GI BLEEDING

S646

Endoscopic vs Conservative Treatment for Bleeding Peptic Ulcer With Adherent Clot: A Comprehensive Systematic Review and Meta-Analysis of Randomized Controlled Trials

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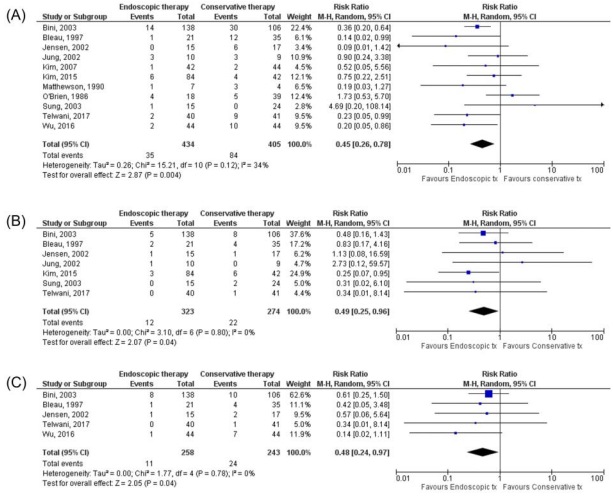
Introduction: Peptic ulcer disease (PUD) is the leading cause of upper GI bleeding. PUDs with an adherent clot (Forrest IIb) are associated with a high risk of rebleeding and mortality. However, the optimal management of bleeding PUD with adherent clots, including endoscopic or conservative therapy, remains unclear. The most recent ACG guidelines in 2021 did not clearly endorse endoscopic treatment for bleeding PUDs with adherent clot as opposed to medical therapy. We performed this systematic review and meta-analysis to compare the endoscopic and conservative therapeutic approaches to managing bleeding PUDs with adherent clot.
Methods: We systematically searched MEDLINE, EMBASE, and the Web of Science databases through May 15, 2022, to include all randomized controlled trials (RCTs) comparing the endoscopic and conservative therapeutic approaches for bleeding PUDs with adherent clots. The outcomes of interest in our meta-analysis were rebleeding, need for surgery, and mortality. The random-effects model was used to calculate the weighted pooled risk ratio (RR) with the corresponding 95% confidence intervals (CI) of our desired outcome. A P-value < 0.05 was considered statistically significant. Heterogeneity was assessed using the Higgins I^2 index (I^2 values >50% implied the presence of significant heterogeneity).
Results: Eleven RCTs with 839 patients (434 received endoscopic therapy vs. 405 received conservative therapy) were included. Endoscopic therapy group underwent clot removal and treatment of the underlying lesion with thermocoagulation, electrocoagulation, injection of sclerosants such as epinephrine or ethanol, or hemoclipping. Rebleeding occurred in 8.1% of patients in the endoscopic therapy group, compared to 20.7% in the conservative therapy group (RR 0.45, 95% CI 0.26-0.78, P=0.004, I^2=34%, Figure A). We observed lower mortality of 3.7% in the endoscopic therapy group compared to 8% in the conservative therapy group (RR 0.49, 95% CI 0.25-0.96, P=0.04, I^2=0%, Figure B). In addition, the need for surgery was significantly lower in the endoscopic therapy group (4.3%) compared to the conservative therapy group (9.9%) (RR 0.48, 95% CI 0.24-0.97, P=0.04, I^2=0%, Figure C).
Conclusion: Our meta-analysis demonstrated that endoscopic therapy is superior to conservative treatment for bleeding PUDs with an adherent clot regarding rebleeding, need for surgery, and mortality. However, large-scale RCTs are needed to validate our findings.



[0646] **Figure 1.**

S647 Outstanding Research Award in the GI Bleeding Category (Trainee)

Should Prophylactic Endotracheal Intubation Be Performed in Upper GI Bleeding? A Meta-Analysis

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Introduction: Prophylactic endotracheal intubation in the setting of upper gastrointestinal bleeding (UGIB) prior to endoscopy is not uncommon. Many use this practice to prevent aspiration of blood or gastric contents. However, this practice is now controversial with results of studies being varied. Therefore, we performed the most comprehensive meta-analysis to-date to address this topic.
Methods: A comprehensive search of multiple databases was performed (June 2022). Studies comparing pre-endoscopy prophylactic endotracheal intubation versus no prophylactic intubation in patients with UGIB were included. Analysis was performed using the random effects model with odds ratio (OR) and mean difference (MD) to assess for mortality, pneumonia within 48 hours, aspiration, and hospital length-of-stay (LOS). Publication bias and heterogeneity were assessed.
Results: Eight studies met the inclusion criteria (n=5,769). Patients that underwent prophylactic intubation prior to endoscopy for UGIB experienced a statistically significant higher odds of pneumonia within 48 hours (OR 6.05; 95% CI: 4.01-9.14; p< 0.01) and longer hospital LOS (MD 0.84 days; 95% CI: 0.12-1.56; p=0.02) as compared to those without prophylactic intubation prior to endoscopy. However, no statistically significant differences were noted for mortality (OR 1.43; 95% CI: 0.58-3.51; p=0.44) and aspiration (OR 1.16; 95% CI: 0.48-2.77; p=0.74) between the two groups.
Conclusion: UGIB patients that underwent prophylactic endotracheal intubation prior to endoscopy are more likely to develop pneumonia within 48 hours and to have longer hospital stays than patients not having prophylactic intubation. Based on these results, prophylactic endotracheal intubation prior to endoscopy does not seem to be beneficial in this population. Randomized controlled trials may be necessary to fully evaluate the utility of this practice in the future.

S648 Presidential Poster Award

Comparison of Over-the-Scope Clips and Standard Therapy for Management of Non-Variceal Upper GI Bleed: A Systematic Review and Meta-Analysis

Muhammad Ali Khan, MD[1], Usman Barlass, MD[2], Faisal Kamal, MD[3], Aisha Amin, MBBS[1], Mehnaz Shafi, MD[1], Gottumukkala Raju, MD[1], Shajan Peter, MD[2].
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Introduction: Endoscopic hemostasis with hemoclips, thermal therapy and submucosal injections of epinephrine have been the standard of care for management of non-variceal upper GI bleed (NVUGIB). However, severe NVUGIB with stigmata of recent hemorrhage (SRH) patients can experience rebleeding in 25% patients. Recently, over-the-scope clips (OTSC) have been successfully used for management of severe NVUGIB. We conducted a systematic review and meta-analysis to compare the efficacy and safety of OTSC and standard endoscopic therapy (SET) for management of severe NVUGIB.

Methods: We searched several databases from inception through May 21, 2022 for randomized controlled trials (RCTs) comparing efficacy and safety of OTSC and SET for management of NVUGIB in terms of risks of further bleeding & mortality, units of blood required, duration of ICU and hospital stays. Pooled odds ratios (OR) and mean differences (MD) were calculated for categorical and continuous variables, respectively.
Results: Three RCTs with 219 patients (69 females) were included in the final analysis. Among these 106 were treated with OTSC and 113 with standard therapy. Pooled OR with 95% confidence interval (CI) for risk of further bleeding during next 30 days was 0.21 (0.10, 0.44), I^2=14% in favor of OTSC. Number needed to treat for OTSC was 4. Pooled OR with 95% CI for mortality was 1.41 (0.49, 4.07), I^2=0%. Likewise, there was no difference in length of hospital stay and ICU stays, pooled MD -1.40(-5.50, 2.69), I^2=0% and 0.94 (-1.44, 3.32), I^2=0%. However, OTSC group was associated with lower requirement of blood transfusion, pooled OR with 95% CI -0.53(-1.04,-0.02), I^2=0% (Figure).
Conclusion: OTSC was found to be superior than standard endoscopic therapy for management of severe NVUGIB in terms of risk of further bleeding and requirement of blood transfusions. There was no difference between the two in terms of mortality, duration of ICU and hospital stays.

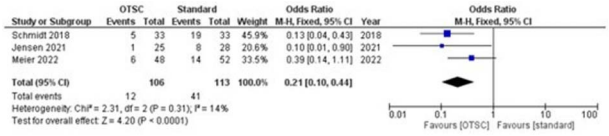

Fig 1: Risk of further bleeding

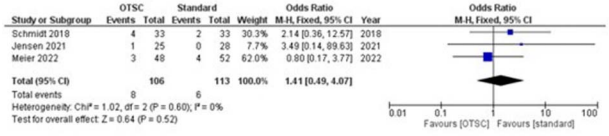

Fig 2: Risk of mortality

[0648] **Figure 1.** Forest Plots to evaluate risk for further bleeding and risk for mortality.

S649 Presidential Poster Award

Early Feeding vs Delayed Feeding After Therapeutic Endoscopic Intervention in Upper GI Bleeding: A Systematic Review and Meta-Analysis

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Introduction: Multiple endoscopic interventions are used to treat upper GI bleeding. Early feeding after endoscopic intervention in upper GI bleeding was always thought to be associated with higher mortality rate and worse outcomes. Recent studies have investigated the role of early post procedural feeding after endoscopic interventions in patients with upper GI bleeding.
Methods: We performed a comprehensive search in the databases of PubMed/MEDLINE, Embase, and the Cochrane Central Register of Controlled Trials from inception through May 25th, 2022. We considered randomized controlled trials. We excluded abstracts, animal studies, case reports, reviews, editorials, and letters to editors. From each study, we collected the number of patients with upper GI bleeding who were started early on regular diet after the endoscopic intervention and the number of patients with delayed feeding. The primary outcome was the mortality rate. The secondary outcomes were the occurrence of early bleeding (within 7 days), late bleeding (after 7 days) and the length of hospital stay. The random-effects model was used to calculate the risk ratios (RR), mean differences (MD), and confidence intervals (CI). A p value < 0.05 was considered statistically significant. Heterogeneity was assessed using the Higgins I^2 index.
Results: Eight randomized controlled trials involving 818 patients were included in the meta-analysis. The mortality rate was not statistically different between the early feeding and the delayed feeding groups (RR 0.60, 95% CI 0.32-1.14, p =0.12, I^2 = 0%) (Figure a). Also, the rates of both early and late bleeding were not statistically different between the two groups (RR 1.17, 95% CI 0.60-2.26, p =0.64, I^2 = 0%) and (RR 0.74, 95% CI 0.25-2.14, p =0.58, I^2 = 17%), respectively. However, the length of hospital stay was significantly shorter in the early feeding group (MD -0.99 days, 95% CI -1.15- -0.83, p $<$ 0.00001, I^2 = 70%) (Figure b).
Conclusion: Our meta-analysis demonstrated that early feeding after endoscopic interventions in patients with upper GI bleeding appears to be relatively safe. There was no statistical difference in mortality rates and in early or late bleeding rates. Moreover, it was associated with a shorter hospital stay. Further randomized controlled trials are needed to confirm our findings.

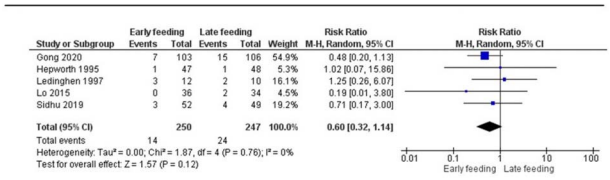

Figure 1 a

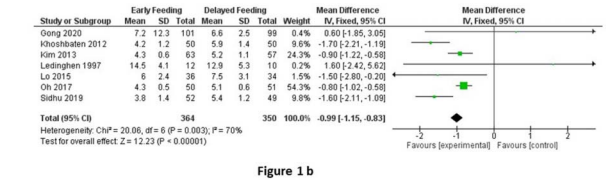

Figure 1 b

[0649] **Figure 1.** a) mortality rate b) the duration of hospital stay.

S650 Presidential Poster Award

Improving the Quality of Esophagogastroduodenoscopy Using Prokinetic in Upper Gastrointestinal Bleeding: A Network Meta-Analysis

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Introduction: Upper gastrointestinal bleeding (UGIB) usually requires esophagogastroduodenoscopy (EGD) for diagnosis and intervention but blood obscures the view. Prior studies have reported positive outcomes with erythromycin administration and nasogastric tube (NG) lavage. This network meta-analysis investigates the efficacy of these interventions.
Methods: We performed a systematic literature search of multiple databases (through March 2022) to include randomized controlled trials (RCTs) comparing different interventions in EGD for UGIB. Outcomes assessed included duration of endoscopy, length of hospital stay, mortality, need for repeat endoscopy, and blood transfusion. We also performed network meta-analysis of the measured outcomes. We used Open Meta Analyst (CEBM, University of Oxford, Oxford, United Kingdom) as the computing software.
Results: A total of 721 patients from 8 RCTs were included in our analysis (Table). The mean age (+/- standard deviation) and male ratio were 60 (+/- 3.1) years and 73.2%, respectively. Four intervention groups of erythromycin, placebo, NG lavage, and NG lavage + erythromycin were defined. All interventions had higher rates of empty stomach than placebo: erythromycin (RR: 2.24, CI: 1.57 – 3.20), NG lavage (RR: 1.70, CI: 1.06 - 2.72), and NG lavage with erythromycin (RR: 2.49, CI: 1.58 – 3.94). The need for second look endoscopy was significantly lower for erythromycin than placebo (RR: 0.42, CI: 0.22 – 0.83) while not different in NG lavage (RR: 0.70, CI: 0.27 – 1.79, p = 0.45), and NG lavage with erythromycin (RR: 0.46, CI: 0.18 – 1.18) compared to placebo. Overall mortality was not significantly different for erythromycin (RR: 0.61, CI: 0.18 – 2.02), NG lavage (RR: 0.61, CI: 0.14 – 2.67), or the combination of NG lavage with erythromycin (RR: 0.20, CI: 0.04 – 1.08) compared to placebo. Using the frequentist approach, the combination of NG lavage + erythromycin (92.2) was rated highest, followed by erythromycin (73.1) alone for higher rates of empty stomach. Mortality was lowest for the combination of NG lavage with erythromycin (97.06). Erythromycin alone was rated highest for lower need for PRBC transfusion (72.8) and mean endoscopy duration (66.0) (Figure).
Conclusion: Erythromycin improved visualization at EGD, reduced requirements for blood transfusion and repeat EGD, and shortened hospital stay.

Table 1. Outcomes for individual studies

Study, Year	Mean age, years (SD)	No. of Patients, N	Empty Stomach, N (%)	Second look Endoscopy, N (%)	Mortality, N (%)	Mean Duration, mins (SD)	Hospital Stay, days (SD)	Mean PRBC Transfusion, (SD)
Altraif, 2010	E: 62.3 (9.8) P: 62.7 (14.7)	E: 53 P: 49	E: 23 (48.9%) P: 10 (23.3%)	E: 2 (4.3%) P: 4 (9.3%)	E: 4 (8.5%) P: 6 (14%)	E: 19 (9.8) P: 26 (13.4)	E: 3.4 (2.4) P: 5.1 (2.9)	E: 3 (1.8) P: 3.6 (2.8)
Ardakani, 2013	NG lavage: 62 (17) NG lavage+ E: 61 (15)	NG lavage: 20 NG lavage+ E: 20	NG lavage: 5 (25%) NG lavage + E: 20 (100%)	NG lavage: 20 (100%) NG lavage + E: 9 (45%)	NG lavage: 1 (5%) NG lavage + E: 0 (0%)	NG lavage: 31.7 (6.1) NG lavage + E: 13.6 (2.7)	NG lavage: 5 (2) NG lavage + E: 3 (1)	NG lavage: 5 (2) NG lavage + E: 1 (1)
Carbonell, 2006	NG lavage: 57 (13.4) NG lavage+ E: 59.3 (14.6)	NG lavage: 50 NG lavage + E: 50	NG lavage: 22 (44%) NG lavage + E: 32 (65.3%)	NG lavage: 12 (24%) NG lavage + E: 12 (24.5%)	NG lavage: 0 (0%) NG lavage + E: 0 (0%)	NG lavage: 16 (8) NG lavage + E: 18 (9)	NG lavage: 7.6 (6.1) NG lavage + E: 7.5 (6)	NG lavage: 1.94 (2.9) NG lavage + E: 1.34 (1.4)
Coffin, 2002	NG lavage: 58 (20) NG lavage+ E: 56 (19)	NG lavage: 22 NG lavage + E: 19	NG lavage: 12 (54.5%) NG lavage + E: 17 (89.5%)	NG lavage: 10 (45.5%) NG lavage + E: 3 (15.8%)	NG lavage: 2 (9.1%) NG lavage + E: 0 (0%)	NG lavage: NR NG lavage + E: NR	NG lavage: 6.5 (1.7) NG lavage + E: 5.8 (0.8)	NG lavage: 4.2 (1) NG lavage + E: 3.4 (4)
Frossard, 2002	E: 59.2 (15) P: 64.5 (16)	E: 51 P: 54	E: 42 (82.4%) P: 18 (33.3%)	E: 6 (11.8%) P: 17 (31.5%)	E: NR P: NR	E: 13.7 (4.5) P: 16.4 (7.8)	E: 10.2 (6.4) P: 12.2 (8.7)	E: 1.9 (1.5) P: 2.3 (1.7)
Na, 2017	NG lavage: 63 (12) NG lavage+ E: 57 (15) E: 60 (14)	NG lavage: 15 NG lavage + E: 14 E: 14	NG lavage: 9 (60.0%) NG lavage + E: 13 (92.9%) E: 13 (92.9%)	NG lavage: NR NG lavage + E: NR E: NR	NG lavage: 0 (0%) NG lavage + E: 0 (0%) E: 0 (0%)	NG lavage: 11 (8) NG lavage + E: 14 (10) E: 11 (4)	NG lavage: NR NG lavage + E: NR E: NR	NG lavage: 1.75 (0.83) NG lavage + E: 1.75 (0.83) E: 1 (0.6)
Pateron, 2011	NG lavage: 61 (15) NG lavage+ E: 60 (17) E: 61 (14)	NG lavage: 85 NG lavage + E: 84 E: 84	NG lavage: 68 (82.0%) NG lavage + E: 69 (88.5%) E: 69 (84.1%)	NG lavage: 20 (24.1%) NG lavage + E: 17 (21.8%) E: 14 (17.1%)	NG lavage: 9 (10.8%) NG lavage + E: 3 (3.8%) E: 9 (11%)	NG lavage: 11.5 (2.3) NG lavage + E: 14.5 (2.9) E: 10.7 (2.6)	NG lavage: NR NG lavage + E: NR E: NR	NG lavage: 2 (1.7) NG lavage + E: 2.4 (1.3) E: 2 (1.2)
Shah, 2020	E: 53.13 (17.7) P: 54.23 (15.8)	E: 30 P: 30	E: 25 (83.3%) P: 12 (40%)	E: 4 (13.3%) P: 8 (26.7%)	E: 0 (0%) P: 0 (0%)	E: 15.5 (4.3) P: 14.3 (3)	E: 5.2 (2.4) P: 5.4 (2.8)	E: 1.37 (1.3) P: 1.77 (1.6)

E: Erythromycin, N: No. of patients, NG: Nasogastric tube, NR: Not reported, P: Placebo, PRBC: Packed red blood cell, SD: Standard deviation.

S651 Outstanding Research Award in the GI Bleeding Category, Presidential Poster Award

Safety and Efficacy of Hemorrhoidal Artery Embolization in Patients Refractory to Conservative Management

Sandeep Bagla, MD[1], Alex Pavidapha, MD[1], Abin Sajan, MD[2], Rachel Piechowiak, MD[1], Pratik Desai, MD[3], Atul Marathe, MD[4], Kenneth Josovitz, MD[4].
[1]Hemorrhoid Centers, Falls Church, VA; [2]Columbia University Irving Medical Center, New York, NY; [3]Potomac Urology, Alexandria, VA; [4]Gastro Health, Woodbridge, NY.

Introduction: Endovascular hemorrhoidal artery embolization has emerged as an analogous therapy to Doppler-guided ligation. The purpose of this study was to evaluate the safety and efficacy of outpatient transarterial embolization for symptomatic refractory internal hemorrhoids.
Methods: One hundred and twenty-six patients with symptomatic bleeding internal hemorrhoids refractory to prior treatment (e.g., banding, dietary/lifestyle modifications) were treated between August 2021 and May 2022 (62 men and 64 women). The average age was 58.3 +/- 15.8 years with an average Goligher's hemorrhoid grade of 2.2. Patients underwent superior and/or middle rectal artery embolization to the target arteries demonstrating abnormal vascular blush of the hemorrhoidal cushion with spherical embolic particles (500 or 600 micron) and/or microcoils (2-6 mm). Patients were discharged two hours post-procedure and were evaluated at baseline and 1-month for the following standardized outcomes: hemorrhoid related pain (HRP, 0-10), hemorrhoid symptoms score (HSS, 5-20), quality of life (QoL, 0-4), French bleeding score (FBS, 0-9), and hemorrhoid grade (0-4).
Results: Femoral (121/126) or radial access (5/126) was performed and successful embolization of the superior and/or middle rectal artery was achieved in 126/126 (100%) patients. Statistically significant improvements in all outcomes were reported at follow-up (baseline vs 1 month): HRP (4.6 vs 1.7, p < 0.001), HSS (10.2 vs 7.1, p < 0.001), QoL (2.4 vs 0.7, p < 0.001), FBS (3.9 vs 1.5, p < 0.001), and hemorrhoid grade (2.0 vs 1.6, p = 0.03). One minor adverse event was reported: post-procedural peri-anal pain that required topical cream, which resolved soon after treatment. No major adverse events were reported.
Conclusion: Hemorrhoidal artery embolization is a safe and effective outpatient treatment for refractory symptomatic internal hemorrhoids.

S652 Presidential Poster Award

Prophylactic Epinephrine Injections for the Prevention of Postpolypectomy Bleeding: A Meta-Analysis

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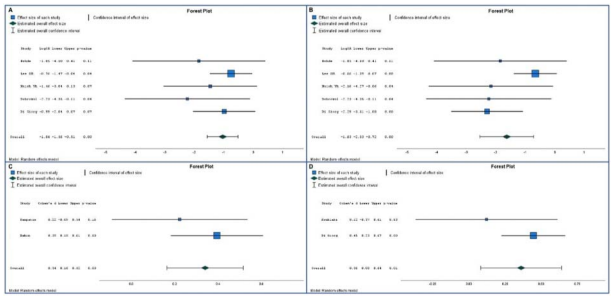
[1]University at Buffalo, Buffalo, NY; [2]Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY.

Introduction: Bleeding is the most common major complication from colonoscopic polypectomy. We performed a meta-analysis to evaluate whether submucosal epinephrine injections prevent post-polypectomy bleeding.

Methods: The dataset was defined by searching PubMed for randomized controlled and retrospective studies published before December 2021 that compared the use of epinephrine (alone or with another preventative measure) to no prophylaxis for bleeding. Groups were defined as either epinephrine injection only (group A), mechanical prophylaxis via detachable snare and/or clip only (group B), combined therapy group (group C), and a control group. Group differences were analyzed by using a random-effects models. Effect sizes were calculated as Cohen's d for continuous data or a log of the odds ratio (OR) for percentage (binary) data.

Results: In all, we identified ten studies: six used in a prior meta-analysis and four additional studies (Table). Overall, 2,125 patients with 2,287 total polyps were included in nine randomized controlled trials and one retrospective chart review. Overall bleeding was lower in group A than in controls on the basis of five studies (OR, -1.038; confidence interval [CI] -1.560 to -0.515; $p \leq 0.001$). One study indicated that overall bleeding was lower in group B than in the controls (OR, -1.524; CI, -2.799 to -0.249; $p=0.019$) (Figure A). Early bleeding was lower in group A than in the controls on the basis of five studies (OR, -1.626; CI, -2.535 to -0.718; $p \leq 0.001$) and lower in group B on the basis of one study (OR, -2.719; CI, -4.175 to -1.263; $p \leq 0.001$) (Figure B). There were no significant group differences associated with late onset bleeding. Group A was significantly older than group C (Figure C) and had larger polyps than group B (Figure D). Homogeneity tests indicated homogeneity among the effect sizes suggesting examination of moderating variables was not necessary and there were no differences among the groups in terms of patient sex, polyp histology, polyp morphology, or stalk size.

Conclusion: The results indicate that epinephrine prophylaxis reduces overall and early postpolypectomy bleeding but does not affect late bleeding.



[0652] **Figure 1.** Comparison of (A) overall and (B) early postpolypectomy bleeding in the epinephrine and control group. (C) Group A was significantly older than Group C. (D) Group A identified larger polyp size than Group B.

Table 1. Study Characteristics (NA, not available; mm, millimeters)

Study	Population	Group Comparisons	Number of patients	Age (year)	Number of polyps	Polyp size (mean) (mm)
Rohde	NA	A: Epinephrine B: No prophylaxis	NA	A: 70 (53–88), B: 65 (33–78)	40	A: 15 (7–28), B: 15 (11–35)
Lee SH.	Multicenter	A: Epinephrine B: No prophylaxis	486	A: 51.6 ± 11.4, B: 56.8 ± 11.3	561	A: 14.5 ± 5.7, B: 15.0 ± 6.8
Hsieh Yh.	Single center	A: Epinephrine B: No prophylaxis	129	A: 62.9 (59.8–62.1), B: 64.9 (62.1–67.8)	151	A: 8.0 (8–13), B: 8.0 (8–11)
Dobrowolski S.	Single center	A: Epinephrine B: No prophylaxis	69	A: 63.7 ± 9.7, B: 66.8 ± 11.5	100	A: 16.3 ± 5.4, B: 16.1 ± 5.9
Paspatis GA.	Multicenter	A: Combined therapy (detachable snare with epinephrine) B: Epinephrine	159	A: 61.7 ± 13.8, B: 64.5 ± 11	159	A: 27.1 ± 8.9, B: 26.3 ± 8.1
Kouklakis G.	Single center	A: Mechanical therapy (Endoloop with postpolypectomy clipping) B: Epinephrine	64	A: 57.9 ± 9.7, B: 58.8 ± 11.2	64	A: 25.6 ± 12.0, B: 27.0 ± 11.0
Di Giorgio P.	Single center	A: Mechanical therapy (detachable snare) B: Epinephrine C: No prophylaxis	488	A: 64 ± 9.2, B: 63 ± 8.9, C: 62 ± 9.0	488	A: 22.2 ± 5.9, B: 24.7 ± 5.3, C: 21.6 ± 4.8
Yamaguchi	Single center	A: Epinephrine B: No prophylaxis	204	A: 73.7 ± 8.7, B: 73.7 ± 8.3	204	A: 10.0 ± 5.8, B: 10.0 ± 5.0
Bahin	Multicenter	A: Combined therapy (epinephrine and succinylated gelatin injection with electrocoagulation) B: Epinephrine and succinylated gelatin injection	347	A: 66.0, B: 70.0	347	A: 39.5, B: 39.8
Park	Multicenter	A: Combined therapy (clipping with epinephrine) B: Mechanical therapy (clipping)	148	A: 59 ± 11, B: 60 ± 10	173	A: 17.5 ± 6.7, B: 17.2 ± 6.6

S653 Presidential Poster Award

Trend Analysis of Lower Gastrointestinal Bleeding Over a Decade: A Population-Based Study

Rabia Rizwan, MD[1], Abdelkader Chaar, MD[1], Ahmad Nawaz, MD[1], Paul Feuerstadt, MD, FACG[2].
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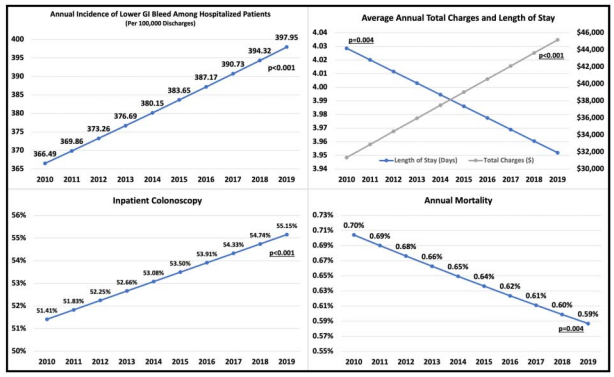
Introduction: There is scarcity of data available on the outcome and healthcare cost in patients with lower gastrointestinal bleeding (LGIB) over the past decade. Given improved diagnostic techniques, more access to interventional radiology procedures and increased prescription of direct oral anticoagulants in comparison to the years prior to that we hypothesized that these changes impacted the outcomes of patients presenting to hospitals with LGIB from 2010 – 2019.

Methods: We performed a retrospective cohort study using the National Inpatient Sample database from 2010 to 2019 of hospitalized patients with primary discharge diagnoses indicating LGIB. Patients with concurrent upper gastrointestinal bleed were excluded. We compared baseline characteristics and outcome of the patients admitted from 2010-2014 to 2015-2019 and compared change in annual trends of inpatient incidence, rates of colonoscopy, length of stay (LOS), total hospitalization charges, and all-cause mortality. We applied discharge weights to generate national estimates (Figure).

Results: A total of 1,163,385 hospitalizations with LGIB were identified; 572,249 hospitalizations during 2010 – 14 and 591,140 during 2015-19. Diverticular bleed remained the most common etiology of LGIB hospitalizations in both groups. The 2015-19 patients had a lower all-cause mortality (1.00% vs 1.15%, $p< 0.001$) despite a higher mean Charlson co-morbidity index (2.18 vs 1.69, $p< 0.001$). Over the study period, LGIB annual incidence increased with respect to hospitalizations (366.49 in 2010 to 397.95 in 2019 per 100,000 discharges, $p< 0.001$), the number of patients undergoing inpatient colonoscopy (51.41% in 2010 and 55.15% in 2019, $p< 0.001$) and inflation-adjusted total hospitalization charges was $13,826 higher in 2019 compared to 2010 ($p< 0.001$), however there was decrease in all-cause mortality (0.70% in 2010 to 0.59% in 2019, $p=0.004$) (Table).

Conclusion: Over the past decade, the rate of inpatient colonoscopy has increased and despite increase in incidence, the inpatient mortality rate is decreasing in patients admitted with LGIB. With more interventions and assessment are occurring and patients are sicker, the overall outcomes are improving which is encouraging. Future research should focus on how colonoscopic assessment might be better serving to direct therapy and potentially improve outcome.



[0653] **Figure 1.** Trends of incidence, length of stay, cost of hospitalization, rates of colonoscopy and all-cause mortality rate for lower gastrointestinal bleeding over a decade.

Table 1. Yearly adjusted rates (or means) for important outcomes

	Colonoscopy	Length of Stay (Days)	Total Charges ($)	LGIB Incidence (per 100,000 discharges)	Mortality
2010	51.41%	4.03	$31,345.01	366.49	0.70%
2011	51.83%	4.02	$32,881.24	369.86	0.69%
2012	52.25%	4.01	$34,417.46	373.26	0.68%
2013	52.66%	4.00	$35,953.68	376.69	0.66%
2014	53.08%	3.99	$37,489.90	380.15	0.65%
2015	53.50%	3.99	$39,026.12	383.65	0.64%
2016	53.91%	3.98	$40,562.35	387.17	0.62%
2017	54.33%	3.97	$42,098.57	390.73	0.61%
2018	54.74%	3.96	$43,634.79	394.32	0.60%
2019	55.15%	3.95	$45,171.01	397.95	0.59%
p-trend	p< 0.001	p=0.040	p< 0.001	P< 0.001	p=0.004

S654 Presidential Poster Award

Early Colonoscopy Is Associated With Lower Mortality in Stable Diverticular Bleeding: A National Database Study

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Introduction: Major GI societies recommend early colonoscopy (within 24 to 48 hours) for acute, high risk, lower GI bleeds, of which diverticular bleeds comprise about 20 to 40 percent. There is paucity of evidence regarding the timing of colonoscopy for stable presumed diverticular bleeds. Majority of these patients are managed conservatively with outpatient follow up colonoscopy at a later date.
Methods: This was a retrospective case-control study. We queried a large national database (TriNetX, LLC.) which aggregates data from 59 healthcare organizations across the United States comprising more than 70 million patients using ICD-10 and CPT codes. All patients were adults ≥ 18 years with known diverticulosis experiencing their first ever lower GI bleed and deemed to be clinically sTable: Cases had a colonoscopy within 7 days of the lower GI bleed, whereas controls had a colonoscopy after 7 days following the lower GI bleed. Patients requiring ICU admission were excluded from both groups. Additionally, patients with upper GI bleeds or presence of any condition that would predispose to a GI bleed (esophageal varices, peptic ulcers, angiodysplasias, GI malignancies, platelet disorders, complement factor deficiencies, etc) were excluded. We also excluded all patients with acute diverticulitis. The cohorts were propensity matched for demographics and comorbidities as shown in Table. Cases and controls were compared for outcomes of interest and odds ratio (OR) and 95% confidence interval (CI) were calculated.
Results: There were 13,890 cases of stable diverticular bleed who had a colonoscopy within 7 days and 103,718 controls with a stable diverticular bleed who had a colonoscopy after 7 days. After propensity matching, there were 12,502 patients in each group (Table). Patients in the late colonoscopy group (> 7 days) had a significantly higher risk of 30-day mortality (HR = 1.80, 95% CI = 1.33, 2.41). On the other hand, the controls had a lower risk of 30-day re-admissions (OR = 0.88, 95% CI = 0.82, 0.95). There were no significant differences between cases and controls with respect to need for blood transfusion (OR = 1.0, 95% CI = 0.72, 1.40).
Conclusion: Early colonoscopy within 7 days seems to confer a survival benefit in patients with stable diverticular bleeds when compared to performing colonoscopy after 7 days. Large prospective randomized controlled trials would be necessary to confirm these findings.

Table 1. Baseline characteristics of patients with stable diverticular bleed who underwent colonoscopy

	Unmatched cohorts		Propensity matched cohorts	
	Colonoscopy &#60αφφ 7 days (N = 13,890)	Colonoscopy > 7 days (N = 103,718)	Colonoscopy &#60αφφ 7 days (N = 12,502)	Colonoscopy > 7 days (N = 12,502)
Age at index	63.4 +/- 15.2 years	64.2 +/- 15.9 years	63.4 +/- 15.2 years	63.4 +/- 15.3 years
White race	8,752 (70%)	67,415 (68.7%)	8,752 (70%)	8,889 (71.1%)
Male	5,717 (45.7%)	43,326 (44.1%)	5,717 (45.7%)	5,648 (45.2%)
Nicotine dependence	1,536 (12.3%)	11,435 (11.7%)	1,536 (12.3%)	1,414 (11.3%)
Alcohol abuse	496 (4%)	3,196 (3.3%)	496 (4%)	391 (3.1%)
Hypertension	6,547 (52.4%)	50,258 (51.2%)	6,547 (52.4%)	6,611 (52.9%)
Chronic kidney disease	1,351 (10.8%)	11,523 (11.7%)	1,351 (10.8%)	1,272 (10.2%)

Table 1. (*continued*)

	Unmatched cohorts		Propensity matched cohorts	
	Colonoscopy &#60αϕϕ 7 days (N = 13,890)	Colonoscopy > 7 days (N = 103,718)	Colonoscopy &#60αϕϕ 7 days (N = 12,502)	Colonoscopy > 7 days (N = 12,502)
Type 2 diabetes	2,579 (20.6%)	20,162 (20.5%)	2,579 (20.6%)	2,532 (20.5%)
BMI ≥ 30	4,424 (35.4%)	29,734 (30.3%	4,424 (35.4%)	4,090 (32.7%)
Atherosclerosis	633 (5.1%)	5,812 (5.9%)	633 (5.1%)	544 (4.4%)
NSAID use	3,921 (31.4%)	29,896 (30.5%)	3,921 (31.4%)	4,017 (32.1%)
Anticoagulant use	2,810 (22.5%)	21,327 (21.7%)	2,810 (22.5%)	2,792 (22.3%)
Anti-platelet agent use	3,532 (28.3%)	24,942 (25.4%)	3,532 (28.3%)	3,459 (27.7%)

S655 Presidential Poster Award

Efficacy and Safety of Hemorrhoid Energy Therapy in Hemorrhagic Internal Hemorrhoids: A Single Center Retrospective Study

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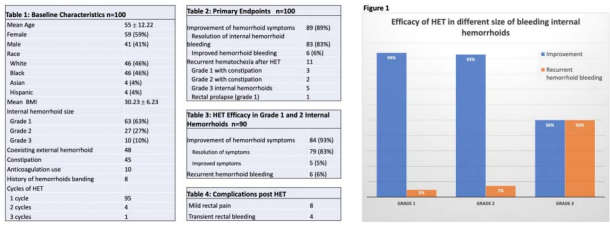
Introduction: Internal hemorrhoids (IH) are a common cause of rectal bleeding. Hemorrhoid energy therapy (HET) is one accepted modality to treat symptomatic grades 1 and 2 IH. However, there are limited literatures regarding its use. We conducted a single center retrospective study with the largest sample size by far to evaluate the efficacy and safety of this therapeutic option in symptomatic internal hemorrhoids.
Methods: We retrospectively included patient encounters with symptomatic IH between 12/ 2019 and 09/2021 with Augusta University IRB approval. Baseline characteristics, including age, gender, race, BMI, grades of IH, constipation, anticoagulation, and history of hemorrhoidal treatments were obtained. Post procedure follow-up was conducted by phone or clinic visit in 4 to 12 weeks post procedure to assess the endpoints including resolution of IH bleeding, bleeding recurrence, and complications.
Results: A total of 100 patients (male 41%, female 59%, mean age of 55 ± 12.22) with bleeding IH were included. Characteristics of IH included 63% as grade 1, 27% as grade 2, and 10% as grade 3. Ten patients (10%) were on anticoagulation, but appropriately held prior to procedure. Mean follow-up time was 8 weeks. The overall resolution rate of IH bleeding was 89% (n=89). Of note, 93% (n=84) in grades 1 and 2 IH. In a subgroup analysis, resolution rate was 94% (n=59) in grade 1 IH, 93% (n=25) in grade 2 IH, and 50% (n=5) in grade 3 IH. 11 cases had recurrent hemorrhoidal bleeding after HET. Among them, 5 were grade 3 IH; 3 were grade 1 IH with severe constipation; 2 were grade 2 IH with severe constipation; and 1 had rectal prolapse. Transient rectal pain and minimal rectal bleeding were noted in 7 and 10 cases post HET respectively.
Conclusion: The efficacy of HET in symptomatic IH varied from 81% to 97% in previous studies. But the quality of those studies was limited by small sample size. Our study is the largest study to date. It showed 89% overall resolution rate. Our study included grade 3 IH that reduced the efficacy due to high rebleeding of 50% in this subgroup. Higher efficacy of 94% was seen if the treatment was only applied to grades 1 or 2 IH. It suggests that grade 3 IH may not be best managed by HET. Constipation post HET appears to be a factor for recurrent bleeding and should be appropriately managed. None of the patients on anticoagulation had rebleeding after HET in our study. Rectal pain and mild rectal bleeding were reported complications, but usually resolved within 2-3 days.



[0655] **Figure 1.** Baseline Characteristics of the study; Table 2: Primary endpoints; Table 3: HET efficacy in grade 1 and grade 2 internal hemorrhoids; Table 4: Post HET complications; Figure: Efficacy of HET in different size of bleeding internal hemorrhoids.

S656

Deprescription of Aspirin for Primary Cardiovascular Prophylaxis Is Rarely Performed at Discharge in Hospitalized Patients With Gastrointestinal Bleeding

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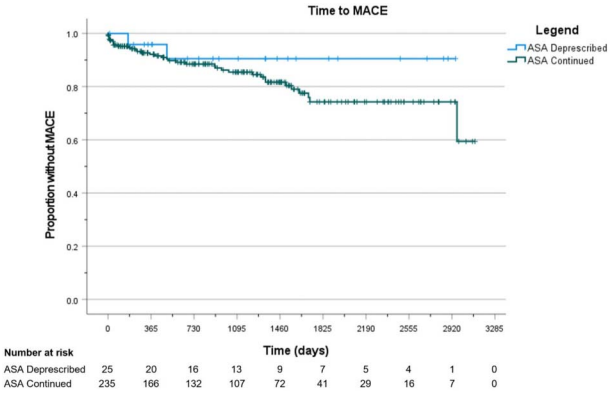
Introduction: Guidelines recommend against aspirin for primary prophylaxis in individuals with a history of gastrointestinal bleeding (GIB). It is unknown how often patients on primary prophylaxis aspirin hospitalized with GIB have aspirin discontinued at discharge. We sought to describe clinical and hospitalization characteristics of these patients, to determine rates of aspirin deprescription, and to explore long-term outcomes including additional GIB hospitalization and major adverse cardiovascular events (MACE).
Methods: This retrospective study identified all patients on low-dose aspirin (81-325 mg daily) for primary cardiovascular prophylaxis admitted for or who developed in-hospital GIB at a large academic center between January 2014 and October 2021. Data were gathered via manual chart review. Our primary endpoint was frequency of aspirin deprescription at discharge and our secondary endpoints were post-discharge GIB hospitalization and MACE. MACE was defined as the composite outcome of myocardial infarction, stroke, and cardiovascular death. Time-to-event analysis was performed using Kaplan-Meier curves and the log rank test.
Results: We identified 320 patients (Table): 149 (46.6%) were male and mean age was 70.8±13.8 years. 297 (92.8%) were on aspirin 81 mg daily. 44 (13.8%) had a prior history of peptic ulcer disease. 16 (5.0%) were on chronic NSAIDs, 45 (14.1%) on SSRIs, and 15 (4.7%) on other antithrombotic agents. 172 (53.8%) patients underwent endoscopic evaluation and 9 (2.8%) had GIB-related mortality. Mean hospital length of stay was 8.7±12.5 days. 60 patients (26.9%) required endoscopic hemostatic therapy. Only 25 (7.8%) of patients were deprescribed aspirin at discharge. 260 patients had follow-up with mean follow-up time of 1152±867 days. Zero of 25 patients with aspirin deprescription had subsequent hospitalization for GIB vs. 17 (7.2%) of 235 who continued aspirin. MACE developed post-discharge in 2/25 (8.0%) with aspirin deprescription vs. 37/235 (15.7%) with aspirin continuation (p=0.278 by log-rank test for comparison of Kaplan-Meier curves) (Figure).
Conclusion: Aspirin given for primary cardiovascular prophylaxis was rarely deprescribed at discharge in hospitalized patients with GIB. Processes designed to review all such patients at discharge and ensure appropriate deprescription of aspirin are crucial to improve adherence to guidelines, thereby reducing the risk of subsequent hospitalization for GIB without increasing the risk of MACE.



[0656] **Figure 1.** Time-to-event analysis of major adverse cardiac events. Kaplan-Meier curves for patients deprescribed or continued on aspirin at hospital discharge. Log rank p = 0.278.

Table 1. Baseline Characteristics of Hospitalized Patients with Gastrointestinal Bleeding on Primary Prophylaxis Aspirin and Post-Discharge Outcomes

	Full Cohort (n=320)	Aspirin Deprescribed at Discharge (n=25)	Aspirin Continued at Discharge (n=235)
Age	70.8 (13.8)		
Sex (Male)	149 (46.6%)		
Hypertension	278 (86.9%)		
Diabetes Mellitus	137 (42.8%)		
Chronic Kidney Disease	83 (25.9%)		
Past History of Peptic Ulcer Disease	44 (13.8%)		
ICU Admission	95 (29.7%)		
Aspirin Deprescribed at Discharge	25 (7.8%)		
Post-discharge MACE		2 (8.0%)	37 (15.7%)
Post-discharge GIB Hospitalization		0 (0.0%)	17 (7.2%)

*p > 0.10 for both comparisons.

S657

Risk of GI Bleed Recurrence in Dual Antiplatelet Therapy Compared to Antiplatelet Monotherapy in Patients Who Underwent Double Balloon Enteroscopy at a Tertiary Care Center

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Introduction: The decision to initiate dual antiplatelet therapy (DAPT) continues to be the center of an intense multidisciplinary discussion regarding overall risks and benefits with gastrointestinal (GI) bleed as a primary contraindication for initiation or continuation of DAPT. This study seeks to examine the rate of GI bleed following anterograde or retrograde double balloon enteroscopy (DBE) while using DAPT vs monotherapy.
Methods: We conducted a retrospective cohort study of patients (n=1163) who underwent DBE at a tertiary care center between 9/2012 and 12/2020 and reviewed the data for patient demographics, indication for endoscopy, interventions, readmission, and recurrent GI bleed. Patients were further stratified by their use of anti-platelet therapy in absence of concomitant anticoagulant use (n=251). Chi-square and 2 sample t-test were used to compare patient characteristics. Univariate and multivariable logistic regression analysis was implemented to depict adjusted odds ratios (OR) for risk of recurrent GI bleed.
Results: Of the 251 subjects, 58% were male with a mean age of 67.7 (10.25, SD). 71.3% of DBEs were performed as an outpatient. The most common indication for DBE was concern for GI bleed (77%). The mean procedural time was 37.5 (17.6, SD) minutes, and 77.3% of patients underwent anterograde DBE. 42 (17%) patients on DAPT and 209 (83%) patients on monotherapy. A higher proportion of DAPT patients required inpatient admission (50%) compared to monotherapy patients (24%) (p=0.001). GI bleed occurring within 6 months of initial DBE was significantly higher in patients on DAPT (17%) compared to patients on anti-platelet monotherapy (5%) (p=0.009). Univariate logistic regression analysis depicted DAPT and inpatient status to be significantly associated with 6-month GI bleed (both p< 0.05). Following multivariable analysis, DAPT [OR: 2.97, 95% CI (1.04-8.47), p=0.04) remained significantly associated with GI bleed within 6 months post DBE.
Conclusion: DBE is often warranted in situations where patients present with obscure GI bleed. Our data indicates that those continued on DAPT have increased incidence of GI bleed at 6 months following DBE when compared with monotherapy. Furthermore, patients using DAPT more frequently required inpatient admission for DBE and were at increased risk for requiring repeat interventions at 6 months. Further studies are needed to confirm our findings.

S658

Risk Factors Associated With Upper Gastrointestinal Bleeding in Cancer Patients Exposed to Immune Checkpoint Inhibitors

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Introduction: Immune checkpoint inhibitors (ICIs) have emerged as effective treatment options for many advanced malignancies. These agents have been associated with several immune related adverse events (irAEs) that may lead to discontinuation of therapy. Gastrointestinal (GI) side effects are amongst the most commonly reported irAEs. Currently, limited data exists on upper GI bleed (UGIB) in patients exposed to ICIs. The aim of this study was to evaluate the characteristics and risk factors associated with UGIB among cancer patients treated with ICIs.
Methods: We performed a retrospective study on all cancer patients from Cleveland Clinic health system who received treatment with ICI's till June 2021. Only the patients with clinical and endoscopic evidence of upper GI bleed were included in the study. The study group (GI Bleed) was matched with control group (non-Bleeders) in 1:3. We compared characteristics of both groups (Bleeders and Non-Bleeders) using univariate and multivariate analysis.
Results: Of the 6820 patients that received ICIs over the study period, 401 patients developed GI bleed. 30 patients had clinical and endoscopic evidence of upper GI Bleed. The most common endoscopic findings were gastric and duodenal ulcers (63%). Compared with the non-bleeding cohort, patients who developed UGIB bleeding had lower BMI (p= 0.0203). Non-small cell lung cancer was the most frequently treated malignancy in the bleeding group. Patients in the bleeding group had higher exposure to pembrolizumab compared to the non-bleeding group (80% vs. 45.6%, p= 0.001). The incidence of ICI induced colitis and hepatotoxicity were more frequent in the bleeding group compared to the non-bleeding cohort (53.5% vs. 27.8%, p= 0.0106). The presence of cirrhosis, diabetes and chronic kidney disease were similar in both groups. On the multivariant analysis, exposure to pembrolizumab (OR=3.62, p=0.0211), aspirin (OR= 10.55, p=0.0002) and with history of ICI induced colitis and hepatotoxicity (OR=3.66 p=0.0108) were predictive factors in development of bleeding. (Table)

Conclusion: This is a novel study that evaluates the risk of UGIB in cancer patients treated with ICIs. In this univariate and multivariate analysis, exposure to aspirin, pembrolizumab and overall incidence of IrAEs were associated with increased risk of bleeding. Although UGIB is a relatively rare irAE, more studies are needed for risk stratification of patients exposed to ICIs.

Table 1. Baseline Clinical Characteristics Of Cancer Patients Exposed To ICIs

Variable	Non-Bleeding (n=90)	Bleeding (n=30)	p-value
Age, mean ± SD	70.6 ± 11.0	69.6 ± 11.3	0.6854
Gender (Male), n (%)	56 (62.2)	19 (63.3)	0.9133
Race (White), n (%)	76 (84.4)	23 (76.7)	0.3316
Hispanic, n (%)	1 (1.1)	2 (6.7)	0.1539
Medication Type, n (%) Pembrolizumab Other	41 (45.6) 49 (54.4)	24 (80.0) 6 (20.0)	0.0010
BMI, n (%) < 26 ≥ 26	 38 (42.2) 52 (57.8)	 20 (66.7) 10 (33.3)	0.0203
History of Upper GI Bleed, n (%)	7 (7.8)	0 (0.0)	0.1902
On Aspirin prior to procedure, n (%)	5 (5.6)	12 (40.0)	< 0.0001
On Plavix prior to procedure, n (%)	1 (1.1)	1 (3.3)	0.4391
On Warfarin prior to procedure, n (%)	0 (0.0)	1 (3.3)	0.2500
Chronic kidney disease, n (%)	34 (37.8)	13 (43.3)	0.5893
Diabetes, n (%)	33 (36.7)	9 (30.0)	0.5073
Cirrhosis, n (%)	4 (4.4)	1 (3.3)	1.0000
Type of cancer treated, n (%) Non-small cell lung cancer Other	25 (27.8) 65 (72.2)	15 (50.0) 15 (50.0)	0.0253
Evidence of metastasis to the GI Tract, n (%)	4 (4.4)	0 (0.0)	0.5710
ICPI induced side effect, n (%)	25 (27.8)	16 (53.3)	0.0106
Treatment with steroids, n (%)	21 (23.3)	11 (36.7)	0.1527
Treatment with Infliximab or Entyvio, n (%)	1 (1.1)	1 (3.3)	0.4391
Current alive, n (%)	29 (32.2)	8 (26.7)	0.5682
PPI, n (%) No Yes	 53 (58.9) 37 (41.1)	 17 (56.7) 13 (43.3)	0.8307

Footnote: PPI (protein pump inhibitor).

S659 Withdrawn

S660

Algorithmic Approach to GI Bleed Using Video Capsule Endoscopy Prior to Double Balloon Enteroscopy Is Associated With Higher Therapeutic Yield and Decreased Readmission at a Tertiary Medical Center

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Introduction: Occult bleeding is usually secondary to small intestinal pathology and can be further evaluated with either video capsule endoscopy (VCE) or double balloon enteroscopy (DBE) after a negative colonoscopy and endoscopy. The traditional algorithmic diagnostic approach consists of performing a VCE before DBE. We analyzed the success rates of using the traditional algorithmic approach as compared to a single diagnostic test (DBE) for the evaluation of obscure GI bleeding (OGIB).
Methods: We performed a retrospective chart review of 805 patients who underwent double balloon enteroscopy (DBE) for evaluation of gastrointestinal bleeding at our institution from 11/2012-12/2020. Patient demographics, endoscopy indication, VCE use, endoscopic intervention, hospital readmission, and incidence of recurrent GI bleeding were obtained. Variables were compared between the 2 groups via Chi-Squared test and student 2 sample t-test. Univariate and multivariable logistic regression analysis were run for adjusted odds ratio (OR) for 30-day readmission.
Results: Our cohort has 805 patients with 374 males (46.4%) and an average age of 64.3 ± 14.7 years. Anterograde DBE was more commonly performed (77.0%) compared to retrograde, and most procedures were performed in the outpatient setting (64.2%). There were 354 patients (44.0%) that received a combination of VCE with subsequent DBE while the remaining 451 patients (56.0%) were evaluated with only DBE. Diagnostic success was higher in the algorithmic approach (VCE +DBE) (62.3%) when compared to DBE group (55.4%)(p=0.094). There was significantly higher therapeutic yield (59.9% vs 51.0%) (P=0.01) and shorter procedure time (35.6 ± 15.6 vs 39.6 ± 21.3 minutes, p=0.003) in those who received VCE+DBE compared to just DBE. Multivariable logistic regression analysis demonstrated that such VCE algorithmic approach was associated with decreased readmission rates at 1 month [Odds Ratio (OR): 0.56, 95% CI (0.33-0.94), p=0.027]. Inpatient status was associated with increased 30-day readmission as depicted in Table (both p< 0.05).
Conclusion: The use of an algorithmic approach with VCE followed by subsequent DBE was found to have several significant benefits in our cohort including increased therapeutic yield, decreased readmission rates, and decreased procedure time. Although limited in the setting of urgent GI bleed, our study shows significant benefit of using an algorithmic approach in the evaluation of OGIB.

Table 1. Logistic regression univariate and multivariable analysis for 30-day readmission

30-day readmission	Univariate Analysis		Multivariate Analysis	
	OR [95% CI]	P value	[OR 95% CI]	P value
Female	**0.44 [0.27-0.72]**	**0.001**	**0.44 [0.26-0.72]**	**0.001**
Age	0.99 [0.97-1.00]	0.103	0.99 [0.97-1.00]	0.153
Inpatient	**4.34 [2.71-6.95]**	**0.000**	**3.61 [2.18-5.97]**	**0.000**
Anticoagulation	1.53 [0.88-2.68]	0.134	1.11 [0.60-2.03]	0.747

Table 1. (*continued*)

30-day readmission	Univariate Analysis		Multivariate Analysis	
	OR [95% CI]	P value	[OR 95% CI]	P value
ESRD	3.19 [1.62-6.26]	0.001	1.69 [0.82-3.49]	0.164
Procedure Minutes	1.01 [0.99-1.02]	0.081	1.00 [0.99-1.02]	0.444
Retro	0.60 [0.33-1.10]	0.098	0.54 [0.28-1.02]	0.059
Video Capsule Endoscopy	**0.44 [0.27-0.72]**	**0.001**	**0.56 [0.33-0.94]**	**0.027**

S661

Impact of Non-Alcoholic Fatty Liver Disease on In-Patient Outcomes in Non-Variceal Upper Gastrointestinal Bleeding: A Nationwide Analysis

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Introduction: Non-Alcoholic Fatty Liver Disease (NAFLD) is the leading cause of liver disease globally with an estimated prevalence of 25%. The clinical and economic burden of NAFLD is expected to keep increasing. Upper gastrointestinal bleeding (UGIB) occurs in ~100 out of 100,000 people per year. Our aim with this study is to determine the impact of NAFLD on mortality, in-patient complications, and utilization of resources in patients with UGIB.
Methods: Using de-identified data from the National Inpatient Sample (NIS) database 2016-2019, we identified patients with non-variceal UGIB and then stratified them into those with and without NAFLD. Patient demographics, length of stay, hospital charges, comorbidities, complications and mortality outcome data were analyzed. Mann-Whitney tests with Bonferroni corrections were used for testing differences in continuous variables, while chi-squared tests with Bonferroni corrections were used for testing homogeneity of categorical variables. Multivariate logistic regression was conducted to analyze the relationship between mortality and NAFLD, while controlling for relevant covariates. Bidirectional stepwise regression was utilized to build the final model. All statistical analysis and hypothesis tests were performed at significance level, with p-value set at < 0.05. Analyses were conducted using R software (v. 4.0.4).
Results: Multivariate logistic regression analysis (MLRA) was conducted, controlling for the multiple covariates.The primary outcome of interest, mortality, was found to be significantly higher in patients with NAFLD and GI bleeding [aOR: 1.88 (1.68-2.1)]. Secondary outcomes of interest, shock [aOR: 1.15 (1.07-1.22)], acute respiratory failure [aOR:1.28 (1.15-1.42)] and acute liver failure [aOR:5.58 (4.48-6.69)] were all more likely to occur in this cohort. Patients with NAFLD were also more likely to incur higher hospital charges [$2174 ($1677-$2618)] and have a longer length of stay [0.28 days (0.17-0.38)]. Interestingly, in our study the patients with NAFLD were less likely to suffer from acute myocardial infarction [aOR: 0.73 (0.64-0.85)]. Patients with NAFLD were not more likely to suffer AKI, shock requiring vasopressors, sepsis, blood transfusion, intubation or dialysis.
Conclusion: Our analysis showed that patients with non-variceal UGIB have higher mortality, increased complications, longer length of stay and higher hospital charges pointing to the increased morbidity and economic burden of NAFLD.

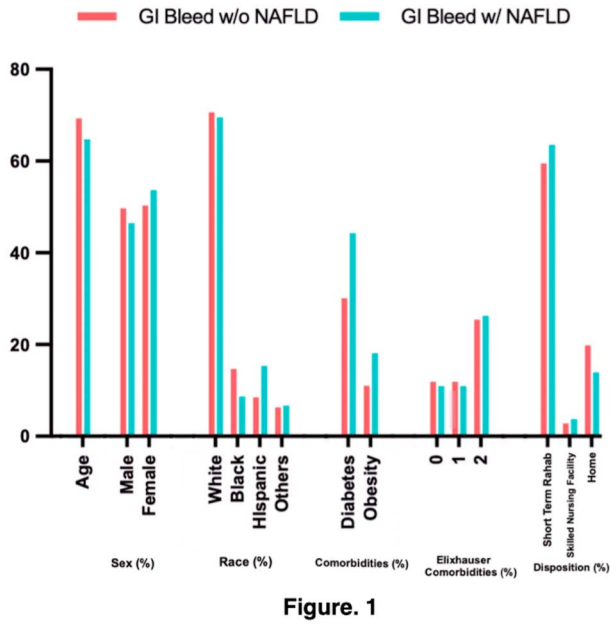

Figure. 1

[0661] **Figure 1.** A. Comparison of demographic and co-morbidities data between non-variceal UGIB with and without NAFLD.

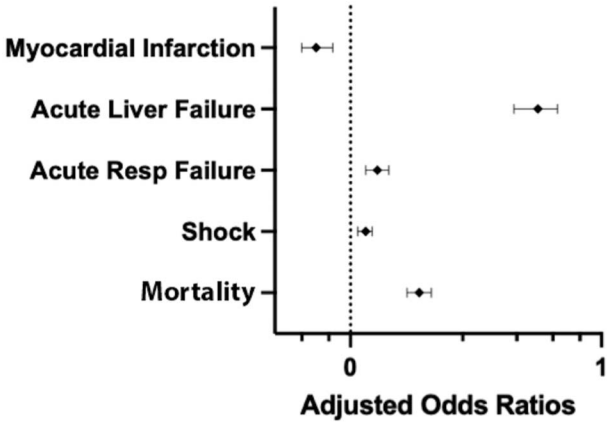

Figure. 2

[0661] **Figure 1B.** Forest Plot showing relation between presence of NAFLD with GI bleeding and co-variates.

S662

Severity of a Gastrointestinal Bleeding After Coronary Stenting Is Associated With a Subsequent Increased Risk of a Major Adverse Cardiovascular Event

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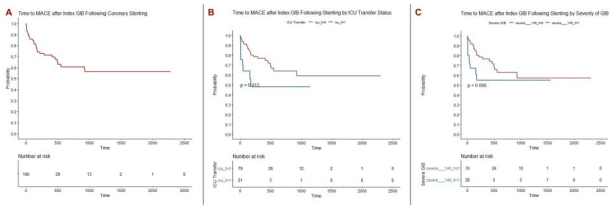
Introduction: Dual antiplatelet therapy following coronary stenting increases the risk of gastrointestinal bleeding (GIB). It remains unclear whether a GIB after coronary stenting is associated with major adverse cardiovascular events (MACE). We aimed to determine features of GIB that may predict the endpoint of MACE.
Methods: We performed a retrospective study of patients who had an index GIB following coronary stenting between January 2015 and June 2021 at a single academic center. Clinical data was collected retrospectively. Kaplan-Meier Estimates and Cox Proportional Hazards Regression Analysis were utilized to determine factors associated with a MACE following the index GIB. Statistical analysis was performed utilizing BlueSky Statistics software v. 7.0.
Results: 100 patients had GIB after coronary stenting and were included. (Table) 32 had MACE following GIB (median time, 121 days, 26-234). MACE included acute coronary syndrome (6.3%), stroke (12.5%), heart failure exacerbation (46.9%), and need for revascularization (34.4%). At $p < 0.10$, labile INR, age > 65 years, and anticoagulation at time of initial coronary stenting were associated with a higher risk of MACE, whereas moderate alcohol use was associated with a reduced risk. 89 patients (89%) were on prescribed P2Y12 inhibitor at the time of index GIB, of which, 19 (21.3%) had it discontinued following GIB. The discontinuation of prescribed P2Y12 inhibitor was not associated with an increased risk of MACE. The absence of findings on endoscopy at GIB was weakly associated with an increased risk of MACE, p=0.0814. Being transferred to the ICU was the strongest predictor of MACE, p=0.0159, and a severe GIB (defined as requiring >/= 5 units of packed red blood cells [pRBCs], length of hospital stay >/= 7 days, transfer to ICU, cardiopulmonary arrest, or death) was weakly associated, p=0.0711. (Figure) Number of pRBC transfused approached significance (HR=1.13 per 1 unit, 95% CI: 0.97-1.31, p=0.1081). The indication for the initial coronary stenting was not associated with the risk of MACE following GIB.
Conclusion: In our single-center study, we found patients who were transferred to the ICU at the time of GIB, or had a severe bleed were subsequently at higher risk of MACE. This may be explained by the decreased oxygen carrying capacity at the time of GIB leading to a propensity to ischemia. Interestingly, however, the hemoglobin or drop in hemoglobin were not associated with MACE. Further studies are recommended.



[0662] **Figure 1.** Kaplan-Meier Estimates for A) Time to MACE after Initial GIB Following Coronary Stenting for All Patients, B) Time to MACE after Initial GIB Following Coronary Stenting by ICU Transfer Status at time of GIB, and C) Time to MACE after Initial GIB Following Coronary Stenting by Severity of GIB. Legend A: Red = All Patients; Legend B: Blue = Transferred to ICU at GI Bleed, Red = Not Transferred to ICU at GI Bleed; Legend C: Blue = Severe GIB, Red = Non-Severe GIB.

Table 1. Baseline Characteristics of All Patients with an Index GIB and Cox Proportional Hazard Regression Analysis for the Occurrence of MACE following Initial Coronary Stenting and Index GIB

Baseline Characteristics Median (IQR) or Fraction (%)		Unadjusted Cox Regression For MACE after Index GIB	
	All Patients N=100	HR (95% CI)	p-value
Age at Coronary Stent Placement, per 10 years	70.5 (61.7-77.8)	1.30 (0.93-1.84)	0.13
Male gender	74 (74.0%)	0.91 (0.42-1.99)	0.91
White Race	100 (100%)	NA	NA
Hispanic Ethnicity	1 (1.0%)	NA	NA
Never Smoker	32 (32.0%)	1.10 (0.53-2.30)	0.80
Body Mass Index, per 1 kg/m^2	30.0 (26.4-30.4)	1.02 (0.97-1.07)	0.45

Table 1. (*continued*)

Baseline Characteristics Median (IQR) or Fraction (%)		Unadjusted Cox Regression For MACE after Index GIB	
	All Patients N=100	HR (95% CI)	p-value
Obesity	50 (50.0%)	1.64 (0.80-3.39)	0.18
Comorbidities – defined as per HAS-BLED			
Hypertension	91 (91.0%)	3.95 (0.53-29.09)	0.18
Chronic Kidney Disease	15 (15.0%)	1.49 (0.57-3.90)	0.42
Liver Disease	15 (15.0%)	1.78 (0.67-4.73)	0.25
History of stroke	12 (12.0%)	1.58 (0.60-4.14)	0.35
Prior Major Bleeding (before LHC)	28 (28.0%)	0.52 (0.20-1.36)	0.18
Labile INR	29 (29.0%)	2.00 (0.98-4.10)	**0.0570**
Age > 65	66 (66.0%)	2.43 (1.00-5.92)	**0.0512**
Medication predisposing to bleeding	100 (100.0%)	NA	NA
Alcohol use	26 (26.0%)	0.40 (0.14-1.14)	**0.0868**
HAS-BLED score	4 (3-5)	1.20 (0.92-1.55)	0.17
HAS-BLED score > 3	53 (53.0%)		
Coronary Catheterization Data			
Pre-catheterization Endoscopy Performed	12 (12.0%)	0.85 (0.26-2.80)	0.79
Delay in LHC due to endoscopy	1 (8.3%)	NA	NA
Indication for coronary catheterization			
Acute Coronary Syndrome	65 (65.0%)	1.64 (0.75-3.57)	0.21
NSTEMI	41 (41.0%)	1.30 (0.64-2.63)	0.47
STEMI	24 (24.0%)	1.33 (0.57-3.11)	0.51
Stable CAD	35 (35.0%)	0.61 (0.28-1.33)	0.21
Number of Stents Placed, per 1 stent	2 (1-2)	1.19 (0.80-1.77)	0.39
3 or more stents placed	20 (20.0%0	1.14 (0.46-2.79)	0.78
Hemoglobin prior to catheterization, per 1 g/dL	12.70 (10.5-14.2)	0.88 (0.76-1.03)	0.11
Medications After Catheterization			
Proton pump inhibitor	31 (31.0%)	1.30 (0.62-2.73)	0.48
SSRI	12 (12.0%)	1.61 (0.61-4.21)	0.33
NSAIDs	2 (2.0%)	NA	NA
Anticoagulation	42 (42.0%)	1.96 (0.96-4.00)	**0.0652**
Warfarin	27 (27.0%)	1.50 (0.53-4.24)	0.45
DOAC	14 (14.0%)	0.71 (0.25-2.02)	0.52
Indication for Anticoagulation			
Atrial Fibrillation	33 (33.0%)	1.24 (0.36-4.27)	0.74
DVT/PE	6 (6.0%)	0.73 (0.17-3.19)	0.68
Gastrointestinal Bleed (GIB)	**Patients with GIB** N = 100		
Median time to Index GIB from stenting, days	166 (22.8-374.8)	NA	NA
P2Y12 inhibitor taken prior to admission	89 (89.0%)	3.87 (0.53-28.4)	0.18
Presenting sign			
None	10 (10.0%)	1.98 (0.76-5.17)	0.16
Hematemesis	11 (11.0%)	0.63 (0.15-2.66)	0.53
Melena	50 (25.0%)	1.24 (0.61-2.53)	0.56
Hematochezia	32 (32.0%)	0.62 (0.27-1.44)	0.26
Labs at time of GIB			
Hemoglobin, per 1 g/dL	8.4 (6.7-10.1)	0.92 (0.79-1.07)	0.28
Hemoglobin drop, per 1 g/dL	3.8 (2.7-5.5)	0.97 (0.83-1.13)	0.65
Platelets, per 50 x 10^9/L	207 (167.8-272.8)	0.97 (0.81-1.17)	0.77
INR, per 1 point	1.2 (1.1-1.9)	1.14 (0.94-1.37)	0.18
Endoscopy Performed	81 (81.0%)		
Inpatient Procedure	74/81 (91.4%)	0.44 (0.15-1.31)	0.14
Normal endoscopy	9/81 (11.1%)	2.65 (0.89-7.93)	**0.0814**
Esophageal varices	0	NA	NA
Esophagitis	10/81 (12.4%)	0.47 (0.06-3.52)	0.46
Gastritis	11/81 (13.6%)	1.80 (0.67-4.86)	0.25
Ulcerations	33/81 (40.7%)	0.58 (0.24-1.42)	0.23

Table 1. (*continued*)

Baseline Characteristics Median (IQR) or Fraction (%)	All Patients N=100	Unadjusted Cox Regression For MACE after Index GIB	
		HR (95% CI)	p-value
Source of Bleeding Found			
Unknown	26 (32.1%)	1.79 (0.78-4.09)	0.17
Intervention Performed	34/81 (42.0%)	0.69 (0.29-1.63)	0.40
Number of pRBCs transfused, per 1 unit	1 (0-3)	1.13 (0.97-1.31)	**0.1081**
Length of stay, per 1 day	3 (2-4)	1.02 (0.92-1.14)	1.02
Transfer to ICU during hospitalization	21 (21.0%)	2.62 (1.20-5.74)	**0.0159**
Death from GIB	1 (1.0%)	NA	NA
Severe GIB	26/100 (26.0%)	2.01 (0.94-4.28)	**0.0711**
P2Y12 Inhibitor Discontinued due to GIB	19/100 (19.0%)	0.66 (0.23-1.89)	0.44
Endpoint			
Major Adverse Cardiovascular Event (MACE)	32/100 (32.0%)	NA	NA
Median time to MACE, days	121.0 (25.8-233.8)	NA	NA
Type of MACE		NA	NA
Acute Coronary Syndrome	2/32 (6.3%)	NA	NA
Stroke or Transient Ischemic Attack	4/32 (12.5%)	NA	NA
Hospitalization for Heart Failure	15 (46.9%)	NA	NA
Need for revascularization	11 (34.4%)	NA	NA

S663

The Impact of Enteral Tube Placement in Patients Presenting With Esophageal Variceal Bleeding

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Introduction: Enteral tube (ET) placement in patients with gastrointestinal bleeding from esophageal varices is commonly approached with caution. Our study examines the frequency and impact of ET placement in patients presenting with esophageal variceal bleeding.
Methods: We performed a retrospective review study examining patients presenting with esophageal variceal bleeding and undergoing esophagogastroduodenoscopy (EGD) at our institution between May 2017 to September 2021. Patient demographics, co-comorbidities, beta-blocker use, and ET placement were recorded. Other data included length of stay (LOS) in days in the hospital and intensive care unit (ICU), days of intubation, as well as packed red blood cell transfusion requirement and mortality. Mean ± standard deviation (SD) was recorded with adjusted mean calculated for beta-blocker use, hypertension (HTN), Diabetes Mellitus (DM), and Hepatocellular Carcinoma (HCC). A Mann-Whitney U-test, Welch t-test, and a heteroscedastic linear model were used to obtain the odds ratio (OR), confidence interval (CI), and calculate statistical significance (p-value$<$ 0.05).
Results: Our cohort consisted of 87 patients: 69% male, 84% white with an average age of 56.0±10.6, Body Mass Index (BMI) 27.4±7.1, Model for End Stage Liver Disease (MELD-Na) 20.5±9.0, and the most common liver cirrhosis etiology being alcohol (39%). Among our cohort, 84% were treated with esophageal variceal banding and 32% had prophylactic beta-blocker use. Compared to patients without ET placement (N=63), patients with ET placement (N=24) had increased transfusion requirements (95.8% vs 73.0%, [OR 6.59, 95% CI 0.70, 62.42, p-value 0.10] and higher mortality (54.2% vs 14.3%), [OR 6.67, 95% CI: 1.50, 29.77, p-value 0.01]. Mean LOS in the hospital and ICU and days of intubation were also higher among patients with ET placement (8.29 vs 24.14 LOS in the hospital, 4.22 vs 17.25 LOS in the ICU, 5.96 vs 1.75 days of intubation) with all statistical significance (Table).
Conclusion: Our study shows that ET placements in patients with esophageal variceal bleeding is associated with prolonged hospitalization, intubation, and ICU stay with higher transfusion requirements. Our study also indicates that there is a concern for causality from ET placement that can be related to tube trauma or negative pressure caused by intermittent suctioning that can exacerbate bleeding and lead to worse outcomes. Further studies are needed to determine the safety of ET placement in this patient population.

Table 1. **Outcomes of Enteral Tube Placement**

Outcomes:	No ET Placement (N=63)	ET Placement (N=24)	p-value
Death	9 (14.29%)	13 (54.17%)	0.0129
Transfusion	46 (73.02%)	23 (95.83%)	0.1004
Hospital LOS			
Mean ± SD	7.75 ± 5.73	24.54 ± 24.59	0.0029[W]
Adjusted Mean*	8.29	24.14	0.0054[H]
ICU LOS			
Mean ± SD	3.86 ± 4.31	17.33 ± 24.19	0.0122[W]
Adjusted Mean*	4.22	17.25	0.0177[H]
Intubation LOS			
Mean ± SD	1.60 ± 2.32	6.04 ± 5.42	0.0006[W]
Adjusted Mean*	1.75	5.96	0.0014[H]

*Adjusted for age, gender, race, MELD, beta-blocker use, and history of HTN, DM, and HCC. LOS: Length of Stay, SD: Standard deviation, ET: Enteral Tube H: p-value from heteroscedastic linear models. W: p-value based on Welch t-test.

S664

Utility and Safety of Pre-LVAD Endoscopy in Preventing Gastrointestinal Bleeding in Left Ventricular Assist Device (LVAD) Recipients

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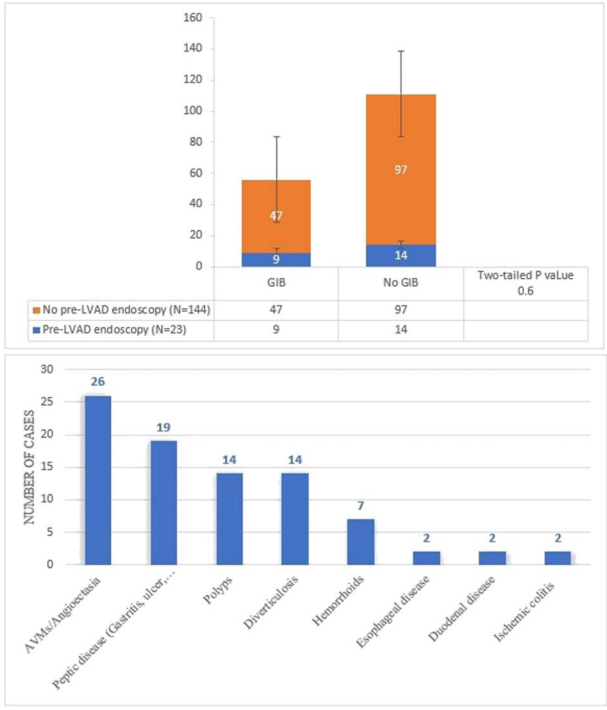
Introduction: Gastrointestinal bleeding (GIB) is a frequent complication in patients with a left ventricular assist device (LVAD). Small bowel angiodysplasias are the most common source of bleeding. The optimal approach to pre-screen patients before LVAD implantation remains unclear. The aim of this study is to describe pre-and-post-LVAD endoscopy findings.
Methods: A retrospective review was conducted among all patients who underwent LVAD implantation, at Saint Luke's Hospital between 2010 and 2020. Data were reviewed to determine the yield and safety of endoscopic procedures performed within 1 month before LVAD placement and the incidence of GIB within 1 year after implantation.
Results: Among 205 patients who received an LVAD, 167 met the inclusion criteria for this study and 23 underwent pre-implantation endoscopic evaluation. Modalities of pre-LVAD endoscopy included EGD 14/23 (60.9%), colonoscopy 9/23 (39.1%), enteroscopy 3/23 (13%), and capsule endoscopy 1/23 (4.3%), with the most frequently identified source of peptic disease. Of 56 patients who experienced post-LVAD bleeding, 55 underwent endoscopy where angiodysplasia was the most frequently identified source, though peptic disease, polyps, and diverticular bleeds were also common. Therapeutic interventions were successful in attaining hemostasis in almost all cases without adverse events. There was no difference in the rates of GI bleeding in patients who underwent endoscopic evaluation pre-LVAD (39.1% vs 32.6%, p=0.64) (Figure, Table).
Conclusion: GIB is a common event following LVAD placement. Pre-LVAD endoscopic evaluation done within 1 month prior to implantation does not reduce the incidence of post-LVAD bleeding, and its role remains questionable.



[0664] **Figure 1.** (A) Incidence of GI bleeding in those who did and didn't undergo pre-LVAD endoscopic evaluation. (B) Diagnostic yield of endoscopy identifying source of bleeding within one year post-LVAD placement.

Table 1. Comparing diagnostic yield of pre vs post-LVAD endoscopy; for detecting possible sources of GI bleeding

	Pre-LVAD (n=23)	Post-LVAD (n=55)
Scope modality		
EGD	14 (60.9%)	37 (67.3%)
Colonoscopy	9 (39.1%)	27 (49.1%)
Enteroscopy	3 (13.0%)	20 (36.4%)
Capsule	1 (4.3%)	4 (7.27%)
Source of bleeding		
Peptic disease	7 (30.4%)	19 (34.6%)
Angiodysplasia	2 (8.70%)	26 (47.3%)
Polyps	3 (13.0%)	14 (25.5%)
Hemorrhoids	3 (13.0%)	7 (12.7%)
Diverticulosis	5 (21.7%)	14 (25.5%)
Esophageal disease	2 (8.7%)	2 (3.64%)
Duodenal disease	4 (17.4%)	2 (3.64%)
Ischemic colitis	0 (0.0%)	2 (3.64%)
Location of lesion		

Table 1. (*continued*)

	Pre-LVAD (n=23)	Post-LVAD (n=55)
No source identified	5 (21.7%)	9 (16.3%)
Stomach	3 (13.0%)	27 (49.1%)
Small intestine	3 (13.0%)	25 (45.5%)
Large intestine	3 (13.0%)	30 (54.5%)
Ano-rectal	3 (13.0%)	8 (14.5%)

S665

Adverse Bleeding Events in Patients With Severe Thrombocytopenia Undergoing Endoscopy: A Systematic Review and Meta-Analysis

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Introduction: Though gastrointestinal endoscopy is relatively safe, it may be complicated by post-procedure bleeding in the severely thrombocytopenic patient. International guidelines do not have a strong support for a specific platelet count necessary to safely perform gastrointestinal endoscopy, yet many institutions adhere to a pre-procedure goal of greater than 50,000/mL.
Methods: A systematic review was performed by searching PubMed, Scopus, Google Scholar and Cochrane Libraries. Adult patients undergoing gastrointestinal endoscopy with a pre-procedure platelet count < 100,000/mL were included. Patients with cirrhosis were excluded. Meta-analysis of post-procedure bleed events based on Common Terminology Criteria for Adverse Events grading was performed.
Results: Four studies were included from 449 unique citation results, providing data on 1,161 patients undergoing 1,557 procedures. Overall prevalence of all post-procedure bleeding was 83/1390 (6%) and 38/730 (5.2%) for post-biopsy bleeding. Grade 3 and 4 (< 50,000/mL) had higher odds of post-procedure bleeding compared to Grades 1 and 2 (>50,000/mL) (OR 2.34, 1.35-4.05). There was no difference between Grade 3 (25-50,000/mL) and Grade 2 (50-75,000/mL) (OR 1.75, 0.93-3.29). There was also no difference among severity of thrombocytopenia and bleeding risk when post-biopsy data was isolated.
Conclusion: Most low risk endoscopic procedures are likely safe in the severely thrombocytopenic patient, when considering bleed risk, and statistically significant bleeds only occur with counts less than 25,000/mL. Diagnostic endoscopy without intervention is likely safe at all platelet counts.

S666

Proton Pump Inhibitors Are Associated With a Higher Risk of Spontaneous Bacterial Peritonitis Independently of Gastrointestinal Bleeding: A Population-Based Study

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Introduction: Spontaneous Bacterial Peritonitis (SBP) is a common complication among patients with cirrhosis and is associated with increased mortality. Recent studies have suggested a possible increase in the risk of SBP among patients on Proton Pump Inhibitors (PPIs). This study aims at identifying whether PPI use is independently associated with a higher risk of SBP among cirrhotic patients.
Methods: Explorys Inc is a validated multicenter database of more than 360 hospitals from 26 different healthcare systems and ~70 million patients across the United States, and was utilized for this study. A cohort of patients with a SNOMED-CT diagnosis of "cirrhosis" between 1999-2022 was identified. A subgroup of patients with "SBP" was later identified and used for the analysis. We excluded all patients with age < 18 years. Statistical Package for Social Sciences (SPSS version 25, IBM Corp) was used for statistical analysis, and for all analyses, a 2-sided p-value of < 0.05 was considered statistically significant. Multivariate analysis was performed to adjust for multiple factors including age, gender, race, type 2 diabetes mellitus, benign hypertension, hyperlipidemia, obesity, smoking history, GI bleeding (GIB), and PPI use.
Results: 69,969,210 individuals were screened in the database and 12,850 were included in the final analysis. The prevalence rate of SBP in cirrhotic patients was 18.36%. The baselines characteristics of cirrhotic patients is shown in Table. SBP was more common among cirrhotic patients using PPI (OR= 1.81) independently of GIB. The diagnosis of GI bleeding (OR= 1.51) and hepatic encephalopathy (OR= 4.54) offered a higher risk for SBP as well (Figure).
Conclusion: This is the largest study for the prevalence of SBP in cirrhotic patients in the United States. Cirrhotic patients using PPI were at higher risk of developing SBP independently of GIB. Results of this study are in line with those of other smaller ones done previously.

		Odd Ratio (95% CI)	P-value
Demographics	Age> 65	0.63 (0.61-0.65)	0.00
	Male	1.23 (1.19-1.28)	0.00
	Caucasians	0.90 (0.86-0.93)	0.00
Medication	PPI use	1.81 (1.72-1.90)	0.00
Associated Medical Condition	Hepatic encephalopathy	4.54 (4.38-4.71)	0.00
	GI bleeding	1.51 (1.46-1.57)	0.00

[0666] **Figure 1.** Multivariate analysis for cirrhotic with SBP in the Study Population.

Table 1. **Baseline characteristics of cirrhotic patients with SBP and control**

		Cirrhotic with SBP (%)	Cirrhotic without SBP (%)
Age	18-65	8103 (62.96)	177690 (48.73)
	> 65	4760 (36.99)	185600 (50.90)
Gender	Male	8040 (62.47)	204120 (55.98)
	Female	4820 (37.45)	159860 (43.84)
Race	Caucasians	9280 (72.11)	258030 (70.77)
	African American	1560 (12.12)	43260 (11.86)
	Asian	190 (1.48)	6170 (1.69)
Comorbidities	Type 2 Diabetes	5230 (40.64)	136730 (37.50)
	Benign Hypertension	2170 (16.86)	60450 (16.58)
	Hyperlipidemia	4840 (37.60)	163140 (44.74)
	Obesity	3490 (27.12)	90820 (24.91)
	Smoker	3240 (25.17)	76010 (20.85)
	GI bleeding	5980 (46.42)	106510 (29.16)
Medication	PPI use	10020 (77.86)	204190 (56)

S667

Outcomes of Difficult Airway (DA) Patients Presenting With Upper Gastrointestinal Bleed (UGIB): 4-Year Retrospective Study Using National Inpatient Sample (2016 – 2019)

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Introduction: Difficult airway patients presenting with upper gastrointestinal bleeding present unique challenge due to increased risk of respiratory complications such as from aspiration or from airway obstruction during anesthesia for urgent upper endoscopy. Limited data are available regarding clinical outcomes in difficult airway patients presenting with Upper gastrointestinal bleed.
Methods: Using National Inpatient Sample databases from 2016 to 2019, we identified patients presenting with Upper gastrointestinal bleed, the population were then divided based on the presence and absence of difficult airway using appropriate ICD-10-CM/PCS codes. STATA 17.0 software (3) was used for the analysis. Pearson's Chi-Square test was used to analyze categorical variable, whereas the student t-test was used to analyze continuous variables. Univariate and multivariate logistic regression was used to adjust for potential confounders. Primary outcome was in hospital mortality due to upper gastrointestinal bleed in patients with and without difficult airway.
Results: Amongst total of 1555580 patients admitted with upper gastrointestinal bleed, 140 patients had diagnosis of difficult airway and 1555440 patients did not have difficult airway diagnosis, male gender and white ethnicity was predominant in both populations. The mean LOS was 6.035±5.02 days in difficult airway group, 4.288±4.45 in non-airway group, this result was statistically significant. The mean total hospitalization charges in difficult airway group were 27111$, in the non-difficult airway group were 13183$ and this was found to be statistically significant. There were 45(32.14%) and 36708(2.36%) mortality in patients with and without difficult airway diagnosis. The difference is statistically significant with OR:5.06, 95% CI: 1.62-15.81, and p < 0.001. Odds of using IR intervention and ICU admissions were higher and EGD were lower in difficult airway group, found to be statistically significant. (Table)
Conclusion: Patient with diagnosis of difficult airway presenting with upper gastrointestinal bleed symptoms were younger, had higher healthcare utilization and were associated with higher inpatient mortality and complications.

Table 1. In Patient Outcomes of the difficult intubation group presenting with upper gastrointestinal bleed

Variables	Odds ratio	95% CI	P-value
In-patient mortality	5.06	1.62-15.81	< 0.001
ALL EGD	0.425	0.131-1.378	<0.001
IR intervention	1.23	0.206-7.31	<0.001
ICU Stay	34.641	13.61-88.11	<0.001
Blood Products Transfusion	0.935	0.408-2.14	<0.001
Blakemore tube insertion	0.95	0.373-2.458	<0.001

S668

The Role of Tranexamic Acid Use in Reducing Mortality in Acute Upper GI Bleeding: A Systemic Review and Meta-Analysis

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Introduction: Acute upper GI bleeding (UGIB) can have a fatality rate of approximately 10% in severe cases. Tranexamic acid (TXA) prevents fibrinolysis and is utilized in surgical setting to prevent trauma bleeding. The use of TXA in acute UGIB has been evaluated in numerous studies but without conclusive evidence on its mortality benefits. We conducted a systematic review and meta-analysis of studies comparing the use of TXA vs no TXA in patients presenting with acute UGIB.
Methods: We performed a comprehensive search of the databases: PubMed/MEDLINE, Embase, and the Cochrane Central Register of Controlled Trials from inception through May 15th, 2022. We considered randomized controlled trials. We excluded abstracts, animal studies, case reports, case series, reviews, editorials, and letters to editors. The primary outcome was the all-cause of mortality rate. The secondary outcomes were the refractory bleeding and the need of endoscopic intervention. The random-effects model was used to calculate the risk ratios (RR) and 95% confidence intervals (CI). A p value < 0.05 was considered statistically significant. Heterogeneity was assessed using the Higgins I^2 index.
Results: Twelve randomized controlled trials involving 14,100 patients were included in the meta-analysis. Eleven studies compared the mortality rate which was significantly lower in patients who were given TXA compared to the no TXA group (4.6% vs 5.3%, RR 0.73, 95% CI 0.58-0.93, p=0.01, I^2 = 17%) (Figure a). The rate of refractory bleeding was also lower in the TXA group compared to the no TXA group (10.6% vs 21.1%, RR 0.57, 95% CI 0.37-0.87, p =0.009, I^2 = 43%) (Figure b). However, there was no statistical significance in the rate of requiring endoscopic intervention between the TXA and the no TXA groups (40.3% vs 42.5%, RR 0.95, 95% CI 0.75-1.20, p =0.67, I^2 =23%) (Figure c).
Conclusion: Our meta-analysis demonstrated that the all-cause mortality rate was significantly lower in the patients with acute UGIB who received TXA. Moreover, the rate of refractory UGIB was lower in patients who were given TXA. TXA maybe utilized clinically in patients presenting with UGIB.

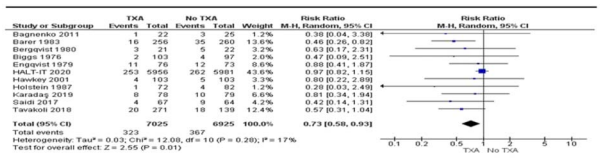

Figure 1 a

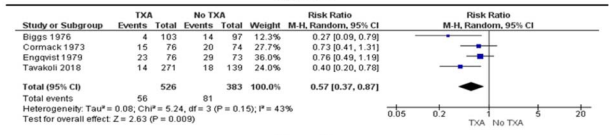

Figure 1 b

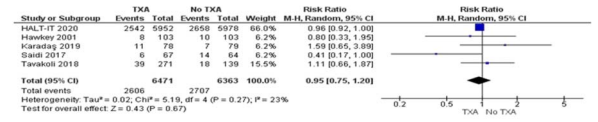

Figure 1 c

[0668] **Figure 1.** a) mortality rate, b) rate of refractory bleeding, c) rate of endoscopic intervention.

S669

Gastrointestinal Bleeding After Transcatheter Aortic Valve Replacement

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Introduction: Gastrointestinal bleeding (GIB) is the most common cause of late bleeding (>30 days) after transcatheter aortic valve replacement (TAVR). This finding is likely attributed to antithrombotic medications and underlying comorbidities. Data remains limited regarding risk factors for GIB and outcomes in long-term follow-up. This study sought to determine the incidence, risk factors, and outcomes of post-TAVR GIB up to one-year post-procedure.
Methods: A retrospective review was conducted which included 844 patients who underwent transfemoral TAVR between 2015-2020. The incidence of upper and lower GIB up to one-year follow up, demographics, medications, and baseline comorbidities were reviewed. The timing of the bleed was evaluated. Post-TAVR bleeds by one-year follow up were classified as minor, major, or life-threatening according to the VARC2 definitions. Severe anemia was defined as pre-operative hemoglobin less than 9. Triple therapy was defined as anticoagulation plus dual-antiplatelet therapy (DAPT). Bivariate and multivariable logistic regressions were used to determine independent predictors of GIB.
Results: Of the 844 patients included, the mean age was 79, and 55% were female sex. The incidence of GIB was 4.6% (n= 39). Regarding patients who experienced post-TAVR GIB, 10.3% (n=4) had a documented history of GIB (p=0.01). Baseline hemoglobin levels were lower in patients with GIB compared to no GIB [10.8 (9.4-12.4) vs. 12.1 (10.8-13.4) g/dL, p< 0.001]. Patients with CKD were more likely to have post-TAVR GIB compared to patients without CKD (41% vs. 24%, p=0.019). Post-TAVR GI bleeds were more likely to have occurred after discharge from TAVR hospitalization (82% vs. 41%, p< 0.0001) and were more often classified as major or life-threatening (62% vs 33%, p=0.0024) compared to patients with non-GI bleeds. Adjusting for all other covariates, the risk factors for GIB included triple therapy [OR 2.88 (95% CI: 1.04-7.97) p=0.042], and severe baseline anemia [HR 4.83 (95% CI: 2.15-10.84) p< 0.001] (Table).
Conclusion: Triple therapy and severe baseline anemia are predictors of post-TAVR GIB by one-year post-procedure. Post-TAVR GIB is more likely to occur after TAVR hospitalization and more likely to be classified as a major or life-threatening bleed.

Table 1. Characteristics of post-TAVR GIB

N (%) for binary variables Median (IQR) for continuous variables			
	No GIB N=805	**GIB N=39**	**p-value**
Patient Demographics			
Female sex	454 (56.4%)	15 (38.5%)	0.028
Age	79.6 (72.9-84.9)	78.3 (71.3-84.7)	0.37
BMI	28.5 (25.0-33.2)	28.7 (24.8-33.8)	0.798
Comorbidities			
Baseline hemoglobin	12.1 (10.8-13.4)	10.8 (9.4-12.4)	< 0.001
Baseline MCV	91.9 (88.4-95.2)	90.4 (84.1-95.5)	0.425
Baseline creatinine	1.0 (0.81-1.3)	1.01 (0.78-1.5)	0.478
eGFR < 30	59 (7.5%)	3 (8.8%)	0.78
CKD	196 (24.3%)	16 (41.0%)	0.019
GI bleed history	23 (2.9%)	4 (10.3%)	0.01
Cirrhosis	9 (1.1%)	1 (2.6%)	0.415
Alcohol use disorder	16 (2.0%)	1 (2.6%)	0.802
Peptic ulcer disease	23 (2.9%)	2 (5.1%)	0.414
Diverticulosis	56 (7.0%)	4 (10.3%)	0.434
Esophageal varices	1 (0.1%)	1 (2.6%)	0.002
CAD	573 (71.2%)	30 (76.9%)	0.438
PAD	100 (12.4%)	9 (23.10%)	0.053
HTN	528 (65.6%)	29 (74.4%)	0.259
HLD	558 (69.3%)	30 (76.9%)	0.313
Diabetes	282 (35.0%)	18 (46.2%)	0.156
Medications Post-TAVR			
DAPT	286 (35.5%)	13 (33.3%)	0.78
Anticoagulation	271 (33.9%)	13 (34.2%)	0.97
Triple therapy	44 (5.5%)	1 (2.6%)	0.431
PPI	241 (30.2%)	20 (52.6%)	0.003
H2 Antagonist	100 (12.5%)	8 (21.1%)	0.125
1 Year Outcomes			
Any bleed	99 (12.3%)	39 (100%)	< 0.001
Major/Life-threatening bleeds	33 (33%)	24 (62%)	0.0024
Stroke	36 (4.5%)	4 (10.3%)	0.097
Myocardial infarct	22 (2.7%)	1 (2.6%)	0.95
Death	32 (4.0%)	4 (10.3%)	0.058

MCV: mean corpuscular volume; eGFR: estimated glomerular filtration rate; CKD: chronic kidney disease; CAD: coronary artery disease; PAD: peripheral artery disease; HTN: hypertension; HLD: hyperlipidemia; DAPT: dual-antiplatelet therapy; PPI: proton pump inhibitor.

S670

Use of an Endoscopic Doppler Probe by General Gastroenterologists and Trainees to Guide Hemostasis in Non-Variceal Upper Gastrointestinal Bleeding (NVUGIB): Outcomes of a Large Academic Medical Center

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Introduction: Visual assessment of stigmata of hemorrhage in NVUGIB is the cornerstone of endoscopic therapy. Nevertheless, rebleeding occurs in up to 30% of patients. The endoscopic doppler probe (EDP) is a novel device that can help guide hemostasis by assessing for arterial blood flow (ABF) within an ulcer base despite its visual appearance. It is most helpful when there is ambiguous stigmata or discordance between the stigmata and clinical picture. Ulcers with residual ABF flow following treatment have been associated with higher rates of rebleeding. The use of EDP to confirm eradication of ABF improves rebleeding. Use of the EDP has not been widely adopted. We seek to evaluate the outcomes in hemostasis with use of EDP after competency training of general gastroenterology (GI) attendings and trainees by our GI hospitalist.

Methods: We performed a retrospective study of patients admitted to a large quaternary care academic medical center with NVUGIB for whom EDP was used during endoscopy (EGD) before and/or after endoscopic treatment. Procedures were performed between January 2021 and May 2022 and were supervised by 4 gastroenterology attendings. Patient demographics and outcomes are listed in Table. The primary outcome was 30-day rebleeding rate, defined as clinical evidence of bleeding plus need for repeat endoscopy or other therapeutic intervention at the location of initial hemostasis as guided by EDP.

Results: We identified 37 patients who underwent EGD with EDP. We found a 30-day rebleeding rate of 13.5% (n = 5). Patients who rebled were more likely to be of Hispanic heritage and previously treated with bipolar cautery ($p < 0.05$). There were no other significant differences (Table). Most ulcers were located within the duodenum (67.6%, n = 25), and most were large (> 10mm in size; 75.7%, n = 28). In 4 patients use of the EDP did not lead to additional endoscopic treatment. None of these patients had rebleeding. For the patients with rebleeding 1 patient required EGD and angiography; 2 patients required repeat EGD only and 2 patients underwent angiography only. No patients required surgery. No intraprocedural complications were identified.

Conclusion: The EDP is a highly effective tool in the management of NVUGIB and can be safely and successfully used by general GI attendings and trainees. The EDP provides a treat-to-target approach to hemostasis and improves upon standard visual assessment of stigmata of hemorrhage. Training in EDP should be encouraged in physicians who treat NVUGIB.

Table 1. Characteristics of 37 patients with use of EDP as a guide in hemostasis by general GI attendings and trainees

	Patients n = 37	Hemostasis N=32 (86.5%)	Rebleed N=5 (13.5%)	P-value
Age, mean (years)	68.5	67.6	74.6	NS
Gender				NS
Female	13 (35.1%)	13 (40.6%)	0	
Male	24 (64.9%)	19 (54.4%)	5 (100%)	
Race				P< 0.05
White	20 (54.1%)	19 (59.4%)	1 (20.0%)	
Black	4 (10.8%)	3 (9.4%)	1 (20.0%)	
Asian	7 (18.9%)	7 (21.9)	0	
Hispanic	6 (16.2%)	3 (9.4%)	3 (60.0%)	
Other	0	0	0	
Medical history				
Hypertension	20 (54.1%)	17 (53.1%)	3 (60.0%)	NS
CKD any stage	8 (21.5%)	7 (21.9%)	1 (20.0%)	NS
Diabetes	5 (13.5%)	4 (12.5%)	1 (20.0%)	NS
ASA Class				NS
1	0	0	0	
2	7 (18.9%)	7 (21.9%)	0	
3	21 (56.8%)	17 (53.1%)	4 (80.0%)	
4	9 (24.3%)	8 (25.0%)	1 (20.0%)	
Labs (Mean Values)				
Admission Hemoglobin (g/dL)	9.0	9.1	8.4	NS
Hemoglobin Nadir (g/dL)	6.7	6.8	6.0	NS
Platelets	301	313	223	NS
INR	1.3	1.3	1.1	NS
Medications				
Anticoagulation use prior to admission	13 (35.1%)	11 (34.4%)	2 (40.0%)	NS
Antiplatelet use prior to admission	9 (24.3%)	9 (28.1%)	0	NS
PPI use prior to admission	14 (37.8%)	14 (43.8%)	0	NS
PPI use following EGD in hospital	37 (100%)	32 (100%)	5 (100%)	NS
Ulcer Location & Features				NS
Stomach	12 (32.4%)	11 (34.4%)	1 (20.0%)	
Duodenum	25 (67.6%)	21 (65.6%)	4 (100%)	
Large Ulcer ≥ 10 mm	28 (75.7%)	23 (71.9%)	5 (100%)	NS
Indication for Index EGD				NS
Primary Hemostasis	21 (56.7%)	17 (53.1%)	4 (80.0%)	
Secondary Hemostasis/Rebleeding	16 (43.2%)	15 (46.9%)	1 (20.0%)	
Adjuvant Endoscopic Treatment	33 (89.1%)	28 (87.5%)	5 (100%)	
Epinephrine Injection	18 (48.7%)	15 (46.9%)	3 (60.0%)	NS
Bipolar Cautery	7 (18.9%)	4 (12.5%)	3 (60.0%)	P< 0.05
Through the Scope (TTS) Clips	8 (21.6%)	7 (21.9%)	1 (20.0%)	NS
Over-the-Scope Clips (OTSC)	20 (54.5%)	18 (56.3%)	2 (40.0%)	NS
Endoscopic Doppler Probe used before treatment				NS
No arterial flow detected	6 (16.2%)	5 (15.6%)	1 (20.0%)	
Arterial flow detected	25 (67.6%)	22 (68.8%)	3(60.0%)	
Not attempted/Used	6 (16.2%)	5 (15.6%)	1 (20.0%)	

Table 1. (*continued*)

	Patients n = 37	Hemostasis N=32 (86.5%)	Rebleed N=5 (13.5%)	P-value
Endoscopic Doppler Probe used after treatment				NS
No arterial flow detected	27 (73.0%)	24 (75%)	3 (60.0%)	
Arterial flow detected	1 (2.7%)	0	1 (20.0%)	
Not attempted/Used	9 (24.3%)	8 (25.0%)	1 (20.0%)	
Forrest Classification of Ulcer				NS
Forrest Ia	1 (2.7%)	1 (3.1%)	0	
Forrest Ib	6 (16.2%)	5 (15.6%)	1 (20.0%)	
Forrest IIa	17 (46.0%)	14 (43.8%)	3 (60.0%)	
Forrest IIb	1 (2.7%)	1 (3.2%)	0	
Forrest IIc	5 (13.5%)	5 (15.6%)	0	
Forrest III	7 (18.9%)	6 (18.8%)	1 (20.0%)	
Outcomes				
Mean LOS, days	14.9	13.6	23.2	NS
Readmission within 30 days of index EGD	6 (16.2%)	4 (12.5%)	2 (40.0%)	NS

S671

Prevalence of Gastrointestinal Hemorrhage in Patients With Amyloidosis: A Population-Based Study

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Introduction: Amyloidosis is characterized by deposition of insoluble protein fibrils in the extracellular space. Gastrointestinal (GI) amyloidosis commonly results from infiltration of the mucosal lining and is most prevalent in the upper GI tract and colorectum. Hence, gastrointestinal hemorrhage (GIB) is the presenting symptom in 25-45% of patients with GI amyloidosis. However, limited epidemiologic data exists on the overall prevalence of GIB in patients with amyloidosis.
Methods: The aim of this study was to investigate if amyloidosis is associated with increased overall risk of GIB and to report the specific etiologies of GIB in these cases. Data was collected from a commercial database (Explorys Inc, Cleveland, OH), an aggregate of EHR data from 27 integrated healthcare systems in the US between 12/2016-12/2021. We identified patients with amyloidosis based on Systemized Nomenclature of Medicine – Clinical Terms. We compared the prevalence of GIB sources at least 30 days post-amyloidosis diagnosis to a control cohort without amyloidosis.
Results: Of the 34,063,760 patients, we identified 17,350 cases of amyloidosis. There were 1,270 cases of GIB in patients with amyloidosis. The overall prevalence with and without amyloidosis was 7320/100000 persons and 3565/100000 persons, respectively. The overall prevalence ratio (PR) of developing GIB after at least 30 days of a diagnosis of amyloidosis was 2.05 (95% CI, 1.95-2.17, p< 0.001). Table 1 shows different causes of GIB. The overall prevalence of upper gastrointestinal hemorrhage (UGIB) with and without amyloidosis was 2306/100000 persons and 890/100000 persons, respectively. The overall prevalence ratio of developing UGIB at least 30 days post-amyloidosis diagnosis was 2.59 (95% CI, 2.35-2.85, P< 0.001). The overall prevalence of lower gastrointestinal hemorrhage (LGIB) with and without amyloidosis was 3804/100000 persons and 2295/100000 persons, respectively. The overall prevalence ratio of developing LGIB at least 30 days post-amyloidosis diagnosis was 1.66 (95% CI, 1.54-1.79, p< 0.001). Table 2 shows different GIB etiologies sub-categorized by demographics.
Conclusion: In this large population-based study, GIB was significantly more prevalent in patients with amyloidosis compared to those without amyloidosis over a 5-year period.

	Amyloidosis	No Amyloidosis	Prevalence in Amyloidosis /100,000	Prevalence in No Amyloidosis /100,000	Prevalence Ratio	95% CI	p-value
Gastrointestinal hemorrhage	1270	1213700	7319.88	3564.84	2.05	1.95-2.17	<0.001
Upper gastrointestinal hemorrhage	400	303000	2305.48	889.96	2.59	2.35-2.85	<0.001
Gastric ulcer with hemorrhage	70	41160	403.46	120.89	3.34	2.64-4.22	<0.001
Gastric ulcer	250	205990	1440.92	605.03	2.38	2.11-2.69	<0.001
Duodenal ulcer with hemorrhage	60	59840	518.73	175.76	2.95	2.40-3.63	<0.001
Duodenal ulcer	100	84440	576.37	248.01	2.32	1.91-2.83	<0.001
Lower gastrointestinal hemorrhage	660	781410	3804.03	2295.13	1.66	1.54-1.79	<0.001
Bleeding Diverticulosis	30	24110	172.91	70.82	2.44	1.71-3.49	<0.001
Angiodysplasia of Colon	50	19460	288.18	57.16	5.04	3.82-6.65	<0.001
Angiodysplasia of Intestine	80	39450	461.10	115.87	3.98	3.20-4.95	<0.001

Table 1.

	Adults (18-65)	Elderly (>65)	Caucasian	African American	Asian	Male	Female
Gastrointestinal hemorrhage	2.219,2.01-2.45,<0.001	1.142,1.07-1.22,<0.001	1.5,1.40-1.60,<0.001	2.18,1.97-2.41,<0.001	1.95,1.28-2.97,0.003	1.9,1.76-2.04,<0.001	2.2,2.04-2.37,<0.001
Upper gastrointestinal hemorrhage	3.669,3.12-4.32,<0.001	1.296,1.15-1.46,<0.001	1.836,1.62-2.08,<0.001	2.852,2.39-3.40,<0.001	0,0,0.05	2.307,2.02-2.64,<0.001	2.885,2.51-3.32,<0.001
Gastric ulcer with hemorrhage	3.49,2.80-4.33,<0.001	1.03,0.889-1.20,0.334	1.67,1.43-1.94,<0.001	2.6,2.06-3.27,<0.001	0,0,0.072	2.5,2.09-2.98,<0.001	2.37,2.00-2.81,<0.001
Gastric ulcer	5.91,3.81-9.15,<0.001	1.26,0.95-1.66,0.057	2.11,1.55-2.88,<0.001	3.47,2.24-5.37,<0.001	0,0,0.327	3.5,2.57-4.77,<0.001	3.11,2.18-4.45,<0.001
Duodenal ulcer with hemorrhage	2.42,1.56-3.75,<0.001	1.09,0.873-1.35,0.226	1.78,1.41-2.25,<0.001	2.83,1.90-4.04,<0.001	0,0,0.44	1.43,1.05-1.95,0.016	4.23,3.37-5.37,<0.001
Duodenal ulcer	3.47,2.24-5.38,<0.001	1.14,0.884-1.47,0.158	1.84,1.39-2.42,<0.001	2.66,1.70-4.09,<0.001	0,0,0.256	2.92,2.27-3.76,<0.001	2.71,1.89-3.86,<0.001
Lower gastrointestinal hemorrhage	1.77,1.54-2.02,<0.001	0.997,0.91-1.09,0.473	1.29,1.18-1.41,<0.001	1.41,1.20-1.66,<0.001	1.39,0.755-2.55,0.15	1.55,1.39-1.72,<0.001	1.79,1.61-1.99,<0.001
Bleeding Diverticulosis	0,0,0.192	1.03,0.72-1.48,0.421	1.83,1.18-2.83,0.007	2.06,1.11-3.83,0.019	0,0,0.451	1.5,0.807-2.79,0.107	3.53,2.28-5.46,<0.001
Angiodysplasia of Colon	5.52,2.86-9.88,<0.001	1.3,1.01-1.67,0.024	2.72,05-3.56,<0.001	4.81,3.36-6.87,<0.001	0,0,0.415	3.7,2.72-5.05,<0.001	4.31,3.16-5.87,<0.001
Angiodysplasia of Intestine	10.41,5.6-19.36,<0.001	1.77,1.30-2.41,<0.001	2.3,1.48-3.56,<0.001	6.53,4.21-10.12,<0.001	0,0,0.456	3.62,2.33-5.61,<0.001	6.82,4.77-9.76,<0.001

Table 2.

[0671] **Figure 1.** (Table 1) Prevalence and prevalence ratios of different etiologies of GIB in patients with and without amyloidosis. (Table 2) Prevalence ratios of etiologies of GIB in patients with amyloidosis categorized by demographic characteristics. (*format is PR, 95% CI, p-value).

S672

Diagnostic Utility of Inpatient Fecal Occult Blood Testing

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Introduction: The fecal occult blood test (FOBT) is a screening tool recommended for use in the outpatient setting for detection of colorectal cancer (CRC) in patients at average risk of developing CRC. Use of FOBT in the inpatient setting is not recommended. Furthermore, there is consistent evidence that inpatient testing may be a detriment to patient care. Thus we completed this study with the objective of assessing the diagnostic utility of inpatient fecal occult blood testing.
Methods: In this retrospective cohort study approved by the USF and TGH IRBs, all consecutive adult patients who underwent FOBT between April 2020 and April 2021 in the ER or inpatient settings were eligible for inclusion. Data extracted included patient demographics, relevant medical comorbidities and treatments, indication for FOBT, and need for inpatient GI consultation and endoscopy related to the completion of FOBT.
Results: A total of 826 patients met inclusion criteria. 456 (55.2%) had a negative FOBT and 370 (44.8%) had a positive test. The two most common indications for FOBT were anemia and overt GI bleed (60.4% and 21.9%, respectively). A GI consult was significantly more common in FOBT positive (71.6%) patients versus FOBT negative patients (33.1%; p-value< 0.01). Overall, 85 patients (10.3%) underwent colonoscopy and 182 patients (22.0%) underwent EGD. A positive FOBT resulted in significantly higher rates of EGD (36.2%) compared with negative FOBT (10.5%; p< 0.01). Similarly, the incidence of

colonoscopy was also significantly higher with positive FOBT (14.9%) versus with negative FOBT (6.6%; p< 0.01). A potential source of bleeding or anemia was identified in 49.7% of patients with a positive FOBT vs 40% of patients with a negative result (p-value: 0.013). Five patients (3.2%) with a positive FOBT versus two patients with negative FOBT (1.4%) were diagnosed with CRC (p=0.45) (Table).
Conclusion: The findings of our study show that the diagnostic utility of FOBT in ED or inpatient setting is poor and of low yield. Not only were a minority of patients were subsequently diagnosed with CRC, but FOBT use was also associated with several follow up tests and consults which may be considered significant misuse of valuable time and resources. One potential implication from our findings could be the development of a decision support system in the electronic medical record to guide healthcare professionals in optimal decision making when assessing a patient with suspected bleeding in the ER or inpatient settings.

Table 1.

Variable	FOBT Negative (N)	FOBT Positive (N)	p-Value
FOBT Result	456	370	
Indication for FOBT	n(%)	n(%)	0.000
GI bleed	45 (24.9)	136 (75.1)	
Anemia	315 (63.1)	184 (36.9)	
Abdominal pain	7 (63.6)	4 (36.4)	
Diarrhea	15 (83.3)	3 (16.7)	
Constipation	0 (0)	2 (100)	
Abnormal imaging	4 (100)	0 (0)	
Colon cancer screening	3 (100)	0 (0)	
Unknown	67 (62)	41 (38)	
GI Consult Placed			0.000
Yes	151 (33.1)	265 (71.6)	
No	305 (66.9)	105 (28.4)	
Colonoscopy Performed			0.000
Yes	30 (6.6)	55 (14.9)	
No	426 (93.4)	315 (85.1)	
EGD Performed			0.000
Yes	48 (10.5)	134 (36.2)	
No	408 (89.5)	236 (63.8)	
Presence of Colorectal Cancer			0.451
Yes	2 (1.4)	5 (3.2)	
No	142 (98.6)	153 (96.8)	
Source of Bleeding Identified			0.013
Yes	144 (40)	159 (49.7)	
No	216 (60)	161 (50.3)	

S673

Stable Coronary Artery Disease as the Indication for Coronary Stenting Is Associated With a Reduced Risk of Gastrointestinal Bleeding Compared to Acute Coronary Syndrome

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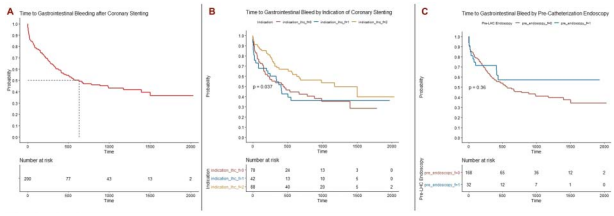
Introduction: Coronary stenting necessitates the initiation of dual-antiplatelet therapy (DAPT), which is associated with an increased risk of gastrointestinal bleeding (GIB). The indication for coronary stenting may include acute coronary syndrome (ACS: STEMI or NSTEMI), or stable coronary artery disease (CAD). We aimed to determine if the indication for coronary stenting was associated with an increased risk of GIB. Additionally, we aimed to determine if a pre-stenting endoscopy was associated with a reduced risk of GIB, and the frequency of discontinuation of P2Y12 inhibitor after GIB.
Methods: We performed a case-control study of patients who underwent left heart catheterization (LHC) followed by coronary stenting between January 2015 and December 2021 at a single academic center. Clinical data was collected retrospectively. Kaplan-Meier Estimates and Cox Proportional Hazards Regression Analysis were utilized to determine risk factors associated with a GIB following coronary stenting. Statistical analysis was performed utilizing BlueSky Statistics software v. 7.0.
Results: 200 patients were included in the study in a 1:1 ratio of cases and controls. (**Table**) The median time to GIB was 166 days (22.8-374.8). At p < 0.10, four variables in the HAS-BLED score at time of LHC were associated with an increased risk of GIB, including hypertension, prior major bleeding, labile INR, and moderate alcohol use. The cumulative HAS-BLED score was not associated with an increased risk of GIB. 32 patients (16.0%) had an endoscopic evaluation within 6 months of coronary stenting. Having had a pre-stenting endoscopy was not associated with a reduced risk of GIB (HR=0.76, 95% CI: 0.41-1.38, p=0.36). Coronary stenting for stable CAD was associated with a 41% reduced risk of GIB compared to patients who had ACS, (HR=0.59, 95% CI: 0.39-0.89, p=0.0113). (**Figure**) GIB led to the discontinuation of the prescribed P2Y12 inhibitor in 19% of patients.
Conclusion: In our single-center study, we found coronary stenting for stable CAD had a reduced risk of GIB compared to ACS. The acuity of coronary stenting and associated hemodynamic instability in patients with ACS may explain this finding. It is unclear, however, how these variables would increase the risk of GIB occurring at a median of approximately 6 months following stenting. Further study is recommended. Additionally, a GIB following coronary stenting infrequently changes management of the prescribed P2Y12 inhibitor.



[0673] **Figure 1.** Kaplan-Meier Estimates for A) Time to Gastrointestinal Bleeding after Coronary Stenting for All Patients, B) Time to Gastrointestinal Bleeding by Indication of Coronary Stenting, and C) Time to Gastrointestinal Bleeding by Having had Pre-Catheterization Endoscopy within 6 months of stenting. Legend A: Red = All Patients; Legend B: Blue = STEMI, Red = NSTEMI, Yellow = Stable CAD; Legend C: Blue = Pre-Stenting Endoscopy Performed, Red = Pre-Stenting Endoscopy Not Performed.

Table 1. **Baseline Characteristics of All Patients and Cox Proportional Hazard Regression Analysis for the Occurrence of GI Bleed Following Coronary Stenting**

Baseline Characteristics Median (IQR) or Fraction (%)		Unadjusted Cox Regression For Index GI Bleeding	
	All Patients N=200	HR (95% CI)	p-value
Age at Coronary Stent Placement, per 1 year	70.9 (62.1-78.8)	1.01 (0.85-1.19)	0.94
Male gender	145 (72.5%)	1.09 (0.70-1.71)	0.70
White Race	193 (96.5%)	NA	NA
Hispanic Ethnicity	3 (1.5%)	NA	NA
Never Smoker	68 (34.0%)	0.66 (0.09-4.76)	0.58
Body Mass Index, per 1 kg/m^2	29.0 (25.0-34.1)	1.00 (0.97-1.03)	0.98
Obesity	88 (44.0%)	1.19 (0.80-1.76)	0.39
Comorbidities – defined as per HAS-BLED			
Hypertension	170 (85.0%)	1.94 (0.98-3.85)	**0.0583**
Chronic Kidney Disease	34 (17.0%)	0.83 (0.48-1.43)	0.50
Liver Disease	33 (16.5%)	0.91 (0.53-1.58)	0.75
History of stroke	32 (16.0%)	0.74 (0.40-1.35)	0.33
Prior Major Bleeding (before LHC)	73 (36.5%)	0.69 (0.45-1.07)	**0.0972**
Labile INR	48 (24.0%)	1.49 (0.97-2.30)	**0.0695**
Age > 65	136 (68.0%)	1.00 (0.66-1.51)	0.99
Medication predisposing to bleeding	200 (100.0%)	NA	NA
Alcohol use	43 (21.5%)	1.55 (0.99-2.42)	**0.0560**
HAS-BLED score	4 (3-5)	1.05 (0.89-1.23)	0.58
Coronary Catheterization Data			
Pre-catheterization Endoscopy Performed	32 (16.0%)	0.76 (0.41-1.38)	0.36
Delay in LHC due to endoscopy	4/32 (12.5%)	0.97 (0.12-7.75)	0.98
Indication for coronary catheterization			
Acute Coronary Syndrome	112 (56%)	1.70 (1.13-2.57)	**0.0113**
NSTEMI	70 (35.0%)	1.40 (0.94-2.09)	**0.0970**
STEMI	42 (21.0%)	1.34 (0.85-2.13)	0.21
Stable CAD	88 (44.0%)	0.59 (0.39-0.89)	**0.0113**
Number of Stents Placed, per 1 stent	1 (1-2)	1.23 (0.99-1.53)	**0.0657**
3 or more stents placed	29 (14.5%)	1.56 (0.96-2.55)	**0.0757**
Hemoglobin prior to catheterization, per 1 g/dL	12.7 (10.5-14.1)	0.98 (0.90-1.06)	0.61
Medications After Catheterization			
Proton pump inhibitor	77 (38.5%)	0.73 (0.48-1.12)	0.15
SSRI	26 (13.0%)	0.81 (0.44-1.48)	0.49
NSAIDs	3 (1.5%)	NA	NA
Anticoagulation	65 (32.5%)	1.95 (1.30-2.91)	**0.0012**
Warfarin	39/65 (60.0%)	1.20 (0.63-2.26)	0.58
DOAC	24/65 (36.9%)	0.83 (0.43-1.58)	0.56
Indication for Anticoagulation			
Atrial Fibrillation	52/65 (80.0%)	0.58 (0.28-1.23)	0.16
DVT/PE	9/65 (13.8%)	1.33 (0.56-3.16)	0.52
Gastrointestinal Bleed (GIB)	**Patients with GIB** N = 100		
Median time to Index GIB, days	166 (22.8-374.8)	NA	NA
P2Y12 inhibitor taken prior to admission	89/100 (89.0%)	NA	NA
P2Y12 inhibitor Discontinued due to GIB	19/100 (19.0%)	NA	NA

S674

The Disparity in Hospitalization Outcomes for Patients With Variceal Hemorrhage Based on the Patients' Living Area Household Income: A Study of the National Inpatient Sample

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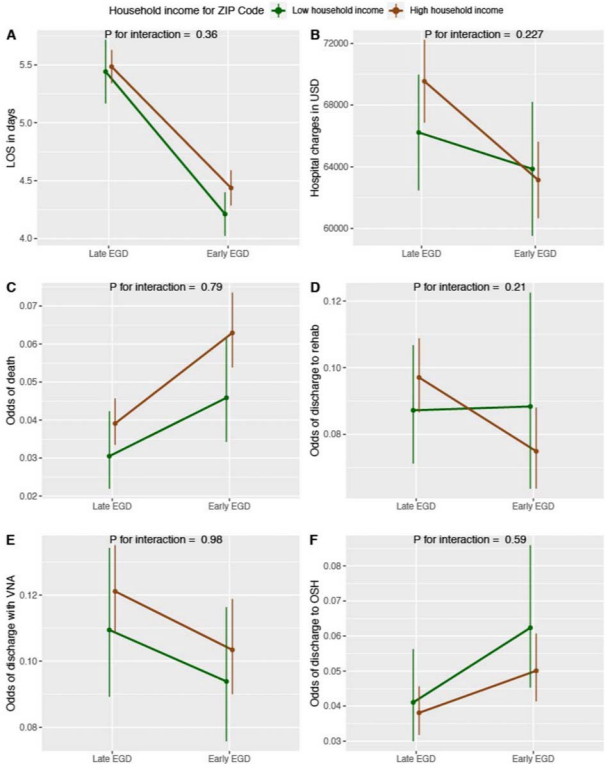
Introduction: Variceal hemorrhage (VH) is a dreaded condition that requires urgent hospitalization. Multiple studies have shown that socioeconomic disparities are linked to poor healthcare outcomes. In this study, we aim to characterize the differences in the hospitalization outcomes of VH based on the household income area.
Methods: Patients with a 1ry discharge diagnosis of VH were identified from the national inpatient sample (NIS) 2016-2018 data and classified based on household income for patients' living areas as: low [LIA] (≤ 50%) or high [HIA] (>50%). The living area household income was provided by Claritas as a quartile classification per ZIP code and incorporated into the NIS data. Inverse probability weighting based on propensity score was used to adjust for differences between the two groups. Our outcomes include time to first esophagogastroduodenoscopy (EGD) (early: ≤ 24 hours vs late: > 24 hours), length of hospital stay (LOS), hospital charges, mortality, and discharge disposition.

Results: Out of 62,775 included patients, 37,420 were identified as LIA group. These patients were more likely to be Black or Hispanic, covered by Medicare or Medicaid, admitted to larger bed-size hospitals, use tobacco, had lower Elixhauser's comorbidity score, and diagnoses of shock compared to the HIA group (Table). In the outcome analyses, the LIA group had lower odds ratio (OR) of having early EGD (0.86, 95% CI 0.78 – 0.95, P 0.002) and higher OR of death (1.3, 95% CI 1.028 – 1.644, P 0.03). There were no differences in LOS (MD 0.12, 95% CI -0.09 – 0.34, P 0.26), hospital charges (MD $1699.61, 95% CI -1707.76 – 5106.98, P 0.33), discharge to nursing facilities (OR 1.01, 95% CI 0.82 – 1.25, P 0.9), discharge with visiting nurse (OR 1.08, 95% CI 0.9 – 1.29, P 0.42), and discharge to other hospitals (OR 0.81, 95% CI 0.619 – 1.053, P 0.11). In an interaction term analyses, the differences in the EGD timing between LIA and HIA groups did not explain the differences in death or other hospitalization outcomes (Figure)

Conclusion: This notional study showed that patients who lived in LIA and were admitted with VH had less likelihood of receiving EGD within 24 hours and a higher likelihood of death despite having fewer comorbidities compared to patients who lived in HIA. However, the differences in EGD timing did not explain the differences in death. More studies are needed to confirm these findings and to help understand and minimize the disparity in the healthcare system in the United States.



[0674] **Figure 1.** Hospitalization outcomes for patients with VH based on the interaction term analyses of household income and EGD timing. Abbreviations: EGD = Esophagogastroduodenoscopy, LOS= Length of hospital stay, OSH= outside hospital, VNA= home visiting nurse.

Table 1. Baseline characteristics

Characteristics	LIA	HIA	P-value
Total number (Weighted)	37,420	25,355	
Age (mean(SD))	56.10 (11.97)	57.02 (12.47)	<0.001
Female (%)	12,060 (32.2)	8,200 (32.4)	0.9
Race (%)			<0.001
White	21,125 (57.8)	16,800 (68.2)	
Black	2,975 (8.1)	1,015 (4.1)	
Hispanic	9,730 (26.6)	4,725 (19.2)	
Others	2,715 (7.4)	2,105 (8.5)	
Patient Location: NCHS Urban-Rural Code (%)			<0.001
"Central" counties of ≥1 million population	11,925 (31.9)	8,900 (35.1)	
"Fringe" counties of ≥1 million population	4,380 (11.7)	8,760 (34.5)	
Counties of 250,000-999,999 population	9,840 (26.3)	5,060 (20.0)	
Counties of 50,000-249,999 population	4,810 (12.9)	1,765 (7.0)	
Not metropolitan or micropolitan counties	6,460 (17.3)	870 (3.4)	
Expected primary payer (%)			<0.001
Medicare	12,075 (32.4)	7,995 (31.6)	
Medicaid	11,065 (29.7)	6,035 (23.8)	
Private insurance	8,150 (21.8)	8,445 (33.3)	
Self-pay/ Others/No charge	6,020 (16.1)	2,855 (11.3)	
Shock (%)	4,295 (11.5)	3,290 (13)	0.01

Table 1. (*continued*)

Characteristics	LIA	HIA	P-value
Acute kidney injury (%)	6,870 (18.4)	4,775 (18.8)	0.51
Acute respiratory failure (%)	4,180 (11.2)	2,690 (10.6)	0.33
Blood transfusion (%)*	0.35 (0.51)	0.38 (0.53)	0.001
FFP or clotting factors transfusion (%)*	0.13 (0.38)	0.14 (0.40)	0.03
Advanced vascular access (%)*	2,550 (6.8)	1,775 (7)	0.69
Intubation and mechanical ventilation (%)*	4,125 (11)	2,920 (11.5)	0.4
Weighted Elixhauser's score (mean(SD))	14.18 (11.17)	15.30 (11.15)	<0.001
Alcohol use disorder	22,835 (61)	15,205 (60)	0.26
Tobacco use	10,585 (28.3)	6,215 (24.5)	<0.001
Long-term (current) anticoagulant use (%)	790 (2.1)	475 (1.9)	0.35
Long-term (current) aspirin use (%)	2,140 (5.7)	1,395 (5.5)	0.6
Long-term (current) NSAID and other antiplatelets/antithrombotic use (%)	870 (2.3)	515 (2)	0.27
Bed size of the hospital			<0.001
Small	5,835 (15.6)	5,305 (20.9)	
Medium	11,395 (30.5)	8,285 (32.7)	
Large	20,190 (54)	11,765 (46.4)	

Abbreviations: EGD = Esophagogastroduodenoscopy, FFP = Fresh frozen plasma, HIA = High income area, LIA = Low income area, NSAID = Nonsteroidal anti-inflammatory drugs, NCHS = National Center for Health Statistics, SD = Standard deviation.
*Procedures were done prior on the same day of EGD.

S675

Glasgow-Blatchford Score vs Glasgow-Blatchford Score Plus Additional Variables to Predict High-Risk Peptic Ulcers in Acute Nonvariceal Upper Gastrointestinal Bleed in a United Arab Emirates Tertiary Center

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Introduction: Acute nonvariceal upper gastrointestinal bleeding (NVUGIB) is a medical emergency and one of the most common reasons for emergency GI care. The Glasgow-Blatchford score (GBS) has been developed for risk stratification. Our group has previously reported that GBS has very limited accuracy in Middle East North Africa (MENA) region. Our aim was to evaluate whether additional clinical variables improved the accuracy of GBS to predict actual high-risk stigmata or active bleeding during emergency endoscopy and to validate this in a large volume tertiary care setting in the MENA region.
Methods: Data were collected retrospectively for a cohort of patients over the age of 16 years who attended the emergency department or were inpatients and underwent esophagogastroduodenoscopy (EGD) for acute NVUGIB from January 2020 through September 2021 at a tertiary hospital in the United Arab Emirates. Our predictor variables included GBS and other potential risk factors as listed in Table. GBS included patients' hemoglobin by gender, blood urea, heart rate, and systolic blood pressure from the time of admission as well as presentation with syncope or melena, and evidence of hepatic disease or cardiac failure. After assessing ability of the GBS to predict Forrest I- II classification by estimating the area under the receiver operating characteristic curve (AUROCC), we examined if other patient demographics and clinical characteristics might improve upon the ability of GBS to detect Forrest I-II classification by fitting several logistic regression models and calculating the AUROCC.
Results: Among the 153 patients in our cohort, the median age was 58 years (IQR XMR 11 (IQR 7 to 13). In our cohort, 28 (18.3%) patients had Forrest I-II classification identified during endoscopy. The AUROCC for the ability of GBS to detect Forrest I-II classification was 0.49 (95% CI 0.37 to 0.62). AUROCC for the ability of each patient characteristic to detect Forrest I-II classification is shown in Table. Models that contained age, diastolic blood pressure and nationality/immigration status in addition to GBS provided the highest overall AUROC with confidence intervals significantly higher than GBS alone.
Conclusion: Our study did not find evidence that GBS by itself was a useful tool at identifying patients with Forrest I-II classification during endoscopy. Our data suggested younger age, nationality / immigration status along with lower DBP may be better predictors of Forrest I-II classification when considered with GBS.

Table 1. **Patients Demographics and Clinical Characteristics with Area under the Receiver Operating Characteristic Curve for Detection of Forrest I-II Classification**

	AUC-1	AUC-2	AUROC-3	AUC-4
Predictor variable	Unadjusted	GBS-adjusted	Age-adjusted	GBS- and age-adjusted
Glasgow-Blatchford score	0.493		0.704	
Age	0.695	0.704		
Gender	0.590	0.605	0.724	**0.731**
Nationality	0.630	0.634	0.737	**0.745**
Diabetes	0.563	0.565	0.697	0.705
Hypertension	0.609	0.627	0.696	0.706
Dyslipidemia	0.523	0.530	0.698	0.707
Chronic kidney disease	0.577	0.602	0.694	0.704
Ischemic heart disease	0.578	0.566	0.695	0.715
Atrial fibrillation	0.568	0.582	0.704	0.718
Congestive heart failure	0.510	0.519	0.696	0.706
Chronic liver disease	0.526	0.530	0.700	0.708
Cerebrovascular accident	0.563	0.575	0.691	0.702
Malignancy	0.508	0.522	0.696	0.705
Antiplatelets	0.533	0.537	0.696	0.706
Anticoagulant	0.527	0.548	0.699	0.709

Table 1. (*continued*)

Predictor variable	AUC-1 Unadjusted	AUC-2 GBS-adjusted	AUROC-3 Age-adjusted	AUC-4 GBS- and age-adjusted
Proton pump inhibitor	0.524	0.525	0.695	0.703
Steroid	0.506	0.514	0.695	0.702
NSAIDs	0.520	0.537	0.704	0.712
Admission unit	0.515	0.534	0.700	0.706
Admission time	0.538	0.533	0.699	0.711
Prior GI bleeding	0.517	0.513	0.693	0.705
Hematemesis	0.578	0.572	0.711	0.717
Melena	0.587	0.602	0.716	0.719
Drop in haemoglobin	0.519	0.504	0.693	0.706
PR Bleeding	0.528	0.541	0.698	0.705
Syncope	0.502	0.511	0.694	0.705
Urea	0.532	0.518	0.698	0.706
Initial Hgb	0.498	0.516	0.693	0.701
SBP	0.383	0.448	0.698	0.710
DBP	0.599	0.648	0.738	**0.738**
Heart rate	0.593	0.599	0.700	0.708
Unstable Pulse	0.570	0.607	0.700	0.705
Blood Transfusion	0.505	0.497	0.698	0.705

AUC=area under the receiver operating characteristic curve, GBS=Glasgow-Blatchford score.
AUC-1 estimates were obtained from single variable logistic regression models separately for each predictor variable.
AUC-2 estimates were obtained from logistic regression models separately for each predictor variable with GBS included as an additional predictor variable.
AUC-3 estimates were obtained from logistic regression models separately for each predictor variable with age included as an additional predictor variable.
AUC-4 estimates were obtained from logistic regression models separately for each predictor variable with GBS and age included as an additional predictor variables.

S676

Outcomes in Non-Variceal Upper Gastrointestinal Bleeding With Use of the Endoscopic Over-the-Scope-Clip Device Deployed by General Gastroenterologists and Trainees: Experience From a Large Academic Medical Center

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Introduction: Non-variceal upper gastrointestinal bleeding (NVUGIB) is a common cause of hospitalization and is associated with an up to 30% incidence of rebleeding. Data increasingly suggests the over-the-scope clip (OTSC) is an effective and safe tool in hemostasis specifically for rebleeding, severe hemorrhage or large ulcers not amenable to standard therapy. Nevertheless, this tool remains underutilized in general gastroenterology (GI) practice and training. We seek to show our outcomes in hemostasis for NVUGIB after competency training of general GI attendings and trainees by our GI hospitalist.
Methods: We performed a retrospective chart review of patients with NVUGIB who received treatment with OTSC by general GI faculty and trainees at a large quaternary care academic center between July 2019 and May 2022. Procedures were supervised by 6 attendings. Demographics are shown in Table. The primary outcome was 30-day rebleeding at the site of initial hemostasis, defined as clinical signs of bleeding with need for repeat endoscopic intervention or angiography.
Results: We identified 52 patients hospitalized for NVUGIB who underwent upper endoscopy with use of the OTSC by general GI attendings and trainees. Of these cases, we observed a 30-day rebleeding rate of 13.5% (n = 7). We observed that patients who rebled had higher readmission rates (71.4% vs 13.3%, $p < 0.05$). No significant differences were observed in demographics, medical history, presenting labs, ulcer features, or length of stay between the two cohorts (Table). We observed that a majority of lesions were found within the duodenum (69.2%, n = 36), and a majority of these ulcers were large >10mm in size (82.7%, n = 43) in both groups. Of patients undergoing OTSC use for primary hemostasis versus secondary hemostasis, rebleeding rate was 15.6% (n = 5) and 10% (n = 2), respectively. Of patients who rebled, 3 underwent repeat endoscopy alone, and 2 underwent EGD & angiography, and 2 underwent angiography alone. No patients required surgery. There were no complications from OTSC placement.
Conclusion: The OTSC is a highly effective tool in the management of NVUGIB specifically in cases of rebleeding, severe hemorrhage, and large ulcers not amenable to standard treatment. The OTSC can be safely and successfully deployed by general gastroenterologists and trainees. Education and competency in OTSC should be encouraged in physicians who treat NVUGIB.

Table 1. **Characteristics of 52 patients with use of the OSTC for hemostasis by general GI attendings and trainees**

	Patients N=52	Hemostasis N=45 (86.5%)	Rebleed N=7 (13.5%)	P-value
Age, mean (years)	72.4	70.4	79	NS
Gender				NS
Female	18 (34.6%)	17 (37.8%)	1 (14.3%)	
Male	34 (65.4%)	28 (62.2%)	6 (85.7%)	
Race				NS
White	28 (53.9%)	25 (55.6%)	3 (42.9%)	
Black	8 (15.4%)	7 (15.6%)	1 (14.3%)	
Asian	9 (17.3%)	8 (17.8%)	1 (14.3%)	
Hispanic	6 (11.5%)	4 (8.9%)	2 (28.6%)	
Other	1 (1.9%)	1 (2.2%)	0	
Medical History				
Hypertension	34 (65.4%)	29 (64.4%)	5 (71.4%)	NS
CKD any stage	19 (36.5%)	15 (33.3%)	4 (57.1%)	NS

Table 1. (*continued*)

	Patients N=52	Hemostasis N=45 (86.5%)	Rebleed N=7 (13.5%)	P-value
Diabetes	12 (23.1%)	10 (22.2%)	2 (28.6%)	NS
ASA Class				NS
ASA 1	1 (1.9%)	1 (2.2%)	0	
ASA 2	7 (13.5%)	7 (15.6%)	0	
ASA 3	24 (46.2%)	20 (44.4%)	4 (54.1%)	
ASA 4	20 (38.5%)	17 (37.8%)	3 (42.9%)	
Labs (Mean Values)				
Admission Hemoglobin (g/dL)	9.3	9.4	9.1	NS
Hemoglobin Nadir (g/dL)	6.6	6.7	6.1	NS
Platelets	256	259	237	NS
INR	1.3	1.3	1.4	NS
Medications				
Anticoagulation use prior to admission	16 (30.8%)	13 (28.9%)	3 (42.9%)	NS
Antiplatelet use prior to admission	27 (51.9%)	24 (53.3%)	3 (42.9%)	NS
PPI use prior to admission	9 (17.3%)	9 (20.0%)	0	NS
PPI use following EGD in hospital	52 (100%)	45 (100%)	7 (100%)	NS
Ulcer Location				NS
Stomach	13 (25.0%)	13 (28.9%)	0	
Duodenum	36 (69.2%)	29 (64.4%)	7 (100%)	
GJ anastomosis	2 (3.9%)	2 (4.4%)	0	
GE junction	1 (1.9%)	1 (2.2%)	0	
Large Ulcer >10 mm	43 (82.7%)	37 (82.2%)	6 (85.7%)	NS
Indication for Index EGD				NS
Primary Hemostasis	32 (61.5%)	27 (60.0%)	5 (71.4%)	
Secondary Hemostasis/Rebleeding	20 (38.5%)	18 (40.0%)	2 (28.6%)	
Adjuvant Endoscopic Treatment				
Epinephrine Injection	32 (61.5%)	27 (60.0%)	5 (71.4%)	NS
Endoscopic Doppler Probe	19 (36.5%)	17 (37.8%)	2 (28.6%)	NS
Forrest Classification of Ulcer				NS
Forrest Ia	0 (0%)	0	0	
Forrest Ib	16 (30.7%)	12 (26.7%)	4 (57.1%)	
Forrest IIa	25 (48.1%)	22 (48.9%)	3 (42.9%)	
Forrest IIb	8 (15.4%)	8 (17.8%)	0	
Forrest IIc	1 (1.9%)	1 (2.2%)	0	
Forrest III	2 (3.9%)	2. (4.4%)	0	
Outcomes				
Readmission within 30 days of index EGD	11 (21.2%)	6 (13.3%)	5 (71.4%)	p< 0.05
Mean length of stay (days)	15.4	14.4	21.7	NS

S677

Overt Gastrointestinal Bleeding in Patients With Cancer: Clinical Characteristics and Outcomes

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Introduction: Characteristics and outcomes of patients with overt gastrointestinal bleeding (GIB) and known cancer are not well characterized. This study compared clinical characteristics, severity and outcomes of GIB between cancer patients (CP) and non-cancer patients (NCP).
Methods: This prospective study included patients admitted with overt GIB between 2013 and 2021. Clinical presentation, management, GIB etiology, need for endoscopy, and outcomes including rebleeding, mortality, and length of hospital stay, were compared between CP (active or inactive cancer) and NCP. Among CP, hematological malignancies were compared to solid tumors and then luminal to non-luminal cancers. The associations with categorical variables were assessed with the Chi-square test, and the t-test was used for continuous variables.
Results: Of 674 patients admitted for GIB, 144 had cancer. Among CP, 84% had active disease (diagnosed within 5 years of the GIB event or on cancer treatment), 49% had stage 4 disease on presentation, and 78% had solid tumors, of whom 20% had luminal GI cancers. Patients were followed for a median of 56 months. Compared to NCP, CP had higher Age-Adjusted Charlson Comorbidity Index, and were less likely to undergo endoscopy or endoscopic therapy. Severe GIB (SBP < 100mmHg, >2units of blood transfused, or ≥2g/dL drop in hemoglobin) was equally prevalent in both groups, but CP were more likely to receive transfusion (68 vs 54%, p=0.002). Peptic ulcer was the most common etiology of GIB in both groups (Table). 9 CP had non-GI cancers causing GIB due to metastasis to the GI tract or due to local invasion. 59% of CP with luminal GI cancers bled due to their cancers. There was no difference in the severity of GIB between luminal cancers and non-luminal cancers. Having cancer was associated with higher in-hospital (12 vs 6%; p=0.018), one-month (17 vs 5.2%; p< 0.001), one-year (48 vs 16%; p< 0.001), and end of follow-up mortality (72 vs 39%; p< 0.001). CP more frequently died of sepsis (16 vs 9%; p=0.02), uncontrolled GIB (4 vs 1%; p=0.026), and systemic malignancy (27 vs 0%, p< 0.001). Length of hospital stay and rebleeding rates did not differ between the two groups.
Conclusion: CP with GIB are less likely to have diagnostic and therapeutic endoscopy and more likely to receive transfusion than NCP. They also have high short-term and long-term mortality. Steps to identify CP at risk for GIB and to improve their outcomes merit consideration and further investigation.

Table 1. Baseline demographics, clinical characteristics and outcomes of patients presenting with gastrointestinal bleeding who had cancer and those who did not CCI = Charlson Comorbidity Index, UGIB = Upper Gastrointestinal Bleeding, LGIB = Lower Gastrointestinal Bleeding, SBP = Systolic Blood Pressure, Hgb = Hemoglobin, AT = antithrombotic, AP = antiplatelet, AC = anticoagulant, SRH = Stigmata of Recent Hemorrhage, AVM = Arteriovenous malformation Laboratory values and SBP are reported upon presentation * Metastasis to the GI tract: 3 lymphomas, 1 breast cancer, 1 sarcoma. Local tumor invasion: 2 pancreatic cancers, 1 cholangiocarcinoma and 1 prostate cancer

	Non-cancer patients N=530	Cancer patients N=144	p-value
Female gender - no. (%)	203 (38)	46 (32)	0.161
Mean age years - yr. (sd)	68 (17)	68 (14)	0.787
Mean age-adjusted CCI - (sd)	4 (2)	7 (3)	< 0.001
GIB location - no. (%) UGIB LGIB	 288 (54) 194 (37)	 85 (59) 51 (36)	 0.262
Severe bleeding - no. (%)	288 (54)	71 (50)	0.399
Mean SBP - mmHg (sd)	124 (22)	121 (20)	0.194
Mean Hgb - g/dL (sd)	10 (2)	9 (3)	< 0.001
Mean platelets - 10^9/L (sd)	248 (103)	231 (181)	0.282
Mean INR - (sd)	2 (1)	22 (1)	0.357
Mean PTT - (sd)	34 (17)	32 (16)	0.164
Mean BUN - mg/dL (sd)	38 (29)	31 (24)	0.002
Mean albumin - g/L (sd)	33 (8)	28 (6)	0.064
AT upon presentation - no. (%) No AT AP only AC only AP and AC	 189 (36) 184 (35) 82 (16) 75 (14)	 63 (44) 38 (27) 29 (20) 13 (9)	 0.066 0.066 0.169 0.111
Endoscopy performed - no. (%)	476 (90)	109 (76)	< 0.001
Endoscopic therapy - no. (%)	177 (33)	33 (24)	0.029
SRH - no. (%)	153 (33)	41 (39)	0.276
Source of bleeding			
Peptic ulcer disease - no. (%)	194 (37)	45 (31)	0.234
Diverticulosis - no. (%)	65 (12)	7 (5)	0.011
AVM - no. (%)	47 (9)	8 (6)	0.198
Esophageal/gastric varices - no. (%)	32 (6)	7 (5)	0.592
Hemorrhoids - no. (%)	30 (6)	6 (4)	0.480
Dieulafoy lesion - no. (%)	14 (3)	5 (4)	0.593
Radiation proctitis - no. (%)	0 (0)	5 (4)	< 0.001
Luminal GI cancer - no. (%)	0 (0)	17 (12)	< 0.001
Non-luminal cancers* - no. (%)	0 (0)	9 (6)	< 0.001
Unknown - no. (%)	67 (13)	25 (17)	0.144
Outcomes			
Blood transfusion - no. (%)	287 (54)	97 (68)	0.002
Length of stay - days (sd)	8 (25)	8 (11)	0.813
End of follow-up mortality - no. (%)	208 (39)	104 (72.2)	< 0.001
End of follow-up re-bleeding	118 (23)	26 (19)	0.274

S678

Treatment of Cardiofundal Gastric Varices From Splenic Vein Occlusion: A Different Phenotype and Framework for Treatment?

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Introduction: Cardiofundal gastric varices can result from left-sided portal hypertension due to isolated splenic vein occlusion, either from intraluminal thrombosis or extrinsic compression of the splenic vein. These patients often do not have systemic portal hypertension or cirrhosis. Treatment of non-cirrhosis related cardiofundal varices can be challenging, as conventional gastric variceal therapies such as transjugular intrahepatic portosystemic shunt (TIPS) or balloon occluded retrograde transvenous obliteration (BRTO) are ineffective for left sided portal hypertension. We aimed to describe our center's experience and approach in treatment of cardiofundal varices in the setting of isolated splenic vein occlusion.
Methods: A retrospective review of all patients who presented with concern for bleeding from cardiofundal varices at two tertiary hospitals was performed from Jan 2018 to May 2022. Patients were included if they received treatment for cardiofundal varices from isolated splenic vein occlusion, and excluded if they had been previously diagnosed with cirrhosis or portal vein thrombosis.
Results: We found a total of 8 patients who met the study's inclusion and exclusion criteria. 7/8 (87.5%) were male and the mean age was 58. Etiology of splenic vein occlusion included pancreatic adenocarcinoma (n=4), necrotizing pancreatitis (n=2), and carcinoid/neuroendocrine tumors (n=2); see Table. Maximum variceal cross section diameter ranged from 4-10mm, and were often small in size and diffuse. All patients underwent initial endoscopic therapy, which included EUS guided coil embolization (n=6) and rubber band ligation (n=3), with 1 patient receiving both. Coil embolization was performed as standalone (n=1), with Gelfoam (n=4), or with cyanoacrylate glue (n=1). Technical success and ability to achieve hemostasis on index procedure were both 100%. 4 patients required re-intervention, with 2 refractory to endoscopic therapy requiring splenic artery embolization and splenectomy.
Conclusion: Coil embolization and/or band ligation can be effective initial endoscopic therapies for non cirrhotic cardiofundal variceal bleeding. Cardiofundal varices from splenic vein occlusion on EUS often appear much smaller in size as compared to those from cirrhosis, which may preclude coil embolization – in these cases, band ligation may be a more preferable option. For patients who fail initial endoscopic therapy and require significant transfusions, splenic artery embolization and splenectomy can be considered.

Table 1. Individual patient description on etiology of splenic vein thrombosis, treatment on index procedure, and follow up

Case	Etiology of Splenic Vein Thrombosis	Maximum variceal cross section diameter (mm)	Treatment on Index Procedure	Follow up
1	Pancreatic adenocarcinoma	5	Coil embolization + Gelfoam	Repeat EGD with deflation of IGV1
2	Pancreatic adenocarcinoma	4	Band ligation	Repeat EGD pending
3	Metastatic carcinoid tumor	5	Coil embolization	One additional EUS guided coil embolization in 2 weeks due to bleeding. Bleeding persisted, so referred to IR. BRTO attempted but no shunt, so ultimately underwent splenectomy.
4	Necrotizing pancreatitis	4.5	Coil embolization + Gelfoam	No recurrent bleeding
5	Pancreatic adenocarcinoma	4	Band ligation	Two additional endoscopic sessions performed for bleeding, first with coil embolization + Gelfoam, second with repeat banding (all within 2-3 months).
6	Pancreatic adenocarcinoma	10	Coil embolization + cyanoacrylate glue	Presented with rebleeding from IGV1 within 3 months, received Hemospray followed by splenic artery embolization.
7	Necrotizing pancreatitis	4	Coil embolization + Gelfoam	Repeat intervention in 3 weeks with coil embolization + Gelfoam + banding. No recurrent bleeding, IGV1 improved.
8	Pancreatic neuroendocrine tumor	8	Coil embolization + Gelfoam + band ligation	Repeat intervention in 2 months with repeat coil embolization + Gelfoam + banding.

S679

Incidence of Major Gastrointestinal Bleeding in Veterans Taking Apixaban vs Rivaroxaban

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Introduction: Gastrointestinal bleeding (GIB) is one of the major adverse effects of Direct oral anticoagulants (DOACs). The incidence of GIB has been extensively compared between Warfarin and DOACs but population-based studies comparing incidence of GIB among different DOACs are limited. The objective of our study was to compare the incidence of GIB in veterans taking apixaban vs. rivaroxaban.
Methods: We retrospectively evaluated electronic medical records of veterans at Dayton VA medical center who were started on apixaban and rivaroxaban between 2012 and 2020. Demographics, HAS BLED Score, and duration of anticoagulation were collected. Outcome included admission to the hospital for gastrointestinal bleeding. SPSS was used to calculate incidence of GIB per 100 years of usage and incidence rate ratio. (Table)
Results: In total, 2170 veterans were started on apixaban, and 677 veterans were started on rivaroxaban between 2012 and 2020. Of these patients, 2781 were male and 66 were female. Patients started on apixaban were older than patients started on rivaroxaban (73.1 years vs. 67.6 years, $p < 0.001$). The duration of treatment on rivaroxaban was slightly higher than apixaban (2.02 years vs. 1.90 years, $p = 0.09$). HAS BLED score of patients started on apixaban was significantly higher than patient started on rivaroxaban (2.22 vs. 1.84, $p < 0.001$). The incidence of GIB in patients taking apixaban was 0.996 per 100 years of usage, whereas the incidence of GIB in patients taking rivaroxaban was 1.314 per 100 years of usage. The incidence rate ratio of GIB between patients taking rivaroxaban vs. apixaban was 1.32.
Conclusion: In our study, the incidence of GIB was higher in patients on rivaroxaban even though they had lower mean age and HAS BLED scores. Apixaban should be considered first in patients requiring anticoagulation with higher risk of bleeding. Our study is limited to the veteran population which is predominantly male. Further population-based studies should be performed to compare the risk of GIB among patients on different DOACs.

Table 1. Incidence of Major GI Bleed in veterans taking apixaban vs. rivaroxaban

	Apixaban (N = 2170)	Rivaroxaban (N = 677)
Age (Mean ± St. Deviation)	73.1 ± 10.41	67.56 ± 10.67
Male	2123	658
Female	47	19
Caucasian	1929	642
African American	187	27
Other	54	8
HAS BLED Score (Mean ± St. Deviation)	2.22 ± 1.07	1.84 ± 0.89
Duration of anti-coagulation (Mean ± St. Deviation)	1.90 ± 1.47	2.02 ± 1.78
Incidence of Major GI Bleed per 100 years of usage	0.996	1.314

S680

Hospital Outcomes in Patients With Gastrointestinal Bleeding on Primary Prevention Aspirin: A Nationwide Emergency Department Sample Analysis

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Introduction: Low-dose aspirin monotherapy (ASA) is widely used for primary prevention of atherosclerotic cardiovascular disease (ASCVD). While ASA is a known risk factor for upper gastrointestinal bleeding (UGIB), little is known regarding in-hospital outcomes in primary prevention ASA users presenting with UGIB. We sought to describe trends in proportion and etiology of primary prevention ASA users presenting with UGIB and investigate the age-dependent impact of ASA on hospital outcomes compared to ASA nonusers.
Methods: Patients ≥40 years old presenting with UGIB were identified in the Nationwide Emergency Department Sample for 2016-2019 using ICD-10 codes. Patients were on primary prevention ASA if they had an ICD-10 code for long-term ASA monotherapy but no ICD-10 codes for ASCVD. In-hospital outcomes included emergency department (ED) discharge, red blood cell (RBC) transfusion, endoscopic hemostatic intervention, and in-hospital mortality. Multivariate weighted regressions were adjusted for gender, geographic region, zip income quartile, primary insurance payer, year, Charlson Comorbidity Index, and urban/rural or teaching hospital status.
Results: From 2016-2019, the overall proportion of patients presenting with acute UGIB to the ED on primary prevention ASA increased ($p < 0.001$). The most frequent cause of UGIB was peptic ulcer disease. ASA users were less likely to be discharged from the ED (OR 0.67, 95% CI 0.62-0.73), more likely to get RBC transfusion (OR 1.17, 95% CI 1.12-1.22), and more likely to require endoscopic hemostatic intervention (OR 1.14, 95% CI 1.09-1.20) compared to ASA nonusers (Table). ASA use decreased overall odds of all-cause in-hospital mortality (OR 0.58 95% CI 0.49-0.70). When stratified by age, the decreased odds of ED discharge was $p < 0.01$ for all ages, whereas the RBC transfusion reached $p < 0.01$ starting at ≥50 years old, and endoscopic hemostatic intervention reached $p < 0.01$ at ≥60 years old.
Conclusion: ASA use was independently associated with decreased odds of ED discharge and increased odds of RBC transfusion and need for endoscopic hemostasis among patients on primary prevention ASA presenting to the ED with UGIB. All three outcomes became significant in patients ≥60 years old, supporting recent guidelines recommending against primary prevention ASA in such patients. This data provides patients and clinicians with additional data to assist in risk-benefit discussions for prophylactic ASA.

Table 1. Age-stratified regression analyses for upper gastrointestinal bleeding outcomes among patients without ASCVD on long-term ASA monotherapy, 2016-2019

Age (years)	N	ED Discharge	Blood Transfusion	Hemostatic Intervention	In-Hospital Mortality
		OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
All	465,687	0.67 (0.62, 0.73)	1.17 (1.12, 1.22)	1.14 (1.09, 1.20)	0.58 (0.49, 0.70)
40-49	84,673	0.73 (0.57, 0.93)	1.06 (0.85, 1.32)	1.10 (0.87, 1.39)	0.56 (0.18, 1.77)
50-59	117,327	0.67 (0.57, 0.79)	1.17 (1.04, 1.31)	1.11 (0.98, 1.26)	0.30 (0.15, 0.62)
60-69	107,155	0.72 (0.62, 0.83)	1.21 (1.11, 1.33)	1.11 (1.01, 1.23)	0.39 (0.24, 0.62)
≥70	156,532	0.63 (0.56, 0.71)	1.14 (1.08, 1.22)	1.16 (1.09, 1.24)	0.68 (0.55, 0.84)

All comparisons made with reference to ASA non-users. OR = odds ratio; CI = confidence interval.

S681

Increased Mortality and Length of Stay in Patients With Gastrointestinal Bleeding With Cardiovascular Disease Compared to Patients Without Cardiovascular Disease

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Introduction: Patients with cardiovascular diseases are commonly treated with antiplatelet or anticoagulation therapy which increases the risk of gastrointestinal bleeding. We compared morbidities, in-hospital mortality rates, and LOS in patients hospitalized for gastrointestinal bleeding with known cardiovascular disease to those without cardiovascular disease
Methods: This retrospective cohort study was conducted using Electronic Medical Records from 2013 to 2020. Patients admitted with gastrointestinal bleeding with established cardiovascular disease (1470) were compared to the patients without cardiovascular disease (4717). Baseline demographic data and outcomes were compared using Mann-Whitney U test, Chi square test and logistic regression. A p-value of < 0.05 was considered significant.
Results: Among 6187 patients admitted with gastrointestinal bleeding, 23% (1470) had cardiovascular disease and 77% (4717) did not have cardiovascular disease. Patients with gastrointestinal bleeding with cardiovascular comorbidities were older, 78 [69-85] vs. 68 [55-80], and had more male population, 51.4% (755) vs 47.9% (2258). Patients with gastrointestinal bleeding with cardiovascular disease had increased prevalence of cancer (58.3% vs. 31.2%), prior gastrointestinal bleeding (46% vs. 32%), DVT (5% vs. 2%), & rheumatologic disease (2.3% vs. 0.7%). Patients with gastrointestinal bleeding with cardiovascular disease had significantly higher BNP (375 vs. 157, p< 0.001), CRP (38 vs. 15, p=0.008), & ESR (47 vs. 27, p=0.004). Higher prevalence of aspirin use (24.1% vs. 16.2%, p< 0.001), DAPT use (1% vs. 0.4%, p=0.006), & anticoagulation (20.1% vs. 2.9%, p< 0.001) was seen in patients with gastrointestinal bleed with cardiovascular disease. LOS (3 vs. 2 days, p< 0.001) & in-hospital mortality (2.1% vs. 0.9% p< 0.001) during hospitalization were significantly higher in patients with GI bleed with cardiovascular disease.
Conclusion: Patients with gastrointestinal bleeding who had cardiovascular disease have a higher prevalence of chronic comorbidities and increased use of antiplatelet and anticoagulation therapy. There was longer length of stay and increased in-hospital mortality in this group during hospitalization. Higher prevalence of cancer among patients with gastrointestinal bleeding with cardiovascular disease may also be linked to poor outcomes. Further investigation is required to assess these outcomes and define patients' characteristics.

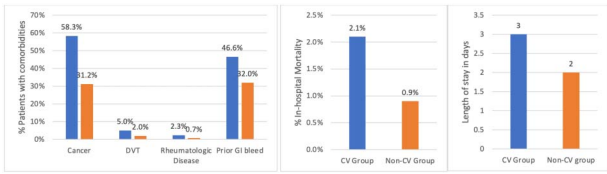

Figure 1a Figure 1b Figure 1c

[0681] **Figure 1.** a: Prevalence of other comorbidities including cancer, rheumatological diseases, DVT and prior gastrointestinal bleeding in patients admitted with gastrointestinal bleeding stratified by patients with and without cardiovascular disease. Cardiovascular disease cohort represented by blue bar and non-cardiovascular cohort represented by orange bar, p-value <0.001 Figure b. In-hospital mortality rates in patients admitted with gastrointestinal bleeding stratified by patients with and without cardiovascular diseases. p-value < 0.001 Figure c. Median length of stay in days in patients admitted with gastrointestinal bleeding stratified by patients with and without cardiovascular diseases. p-value <0.001

S682

Resource Utilization for Gastrointestinal Bleeding in Critically Ill Patients with COVID-19 Pneumonia

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Introduction: During the coronavirus disease 2019 (COVID-19) epidemic, thrombosis contributed to morbidity and mortality. Managing thrombosis in critically ill patients became challenging – as routine evaluation methods were unavailable. Studies have shown no mortality benefit for therapeutic anticoagulation with heparin for those critically ill with COVID-19. Our study expands beyond heparin to other methods of anticoagulation and investigates the impact of therapeutic anticoagulation on mortality, length of stay, ICU days, blood transfusions, gastroenterology consultations, and endoscopic procedures.
Methods: This is a retrospective chart review of 15,707 patients admitted to hospitals in HCA Healthcare's West Florida Division. Charts from January 2019 – October 2021 were used to identify adult patients admitted to the intensive care unit for COVID-19 pneumonia. Patients with confirmed pulmonary emboli, deep venous thrombosis, or other conditions requiring anticoagulation were excluded. Those who met the inclusion criteria were divided by whether they had received thromboprophylaxis or therapeutic anticoagulation. The analyzed outcomes were mortality, length of stay, ICU days, gastroenterology consultation, endoscopic procedures, and blood transfusions (Table).
Results: Therapeutically anticoagulated patients with Covid-19 were more likely to receive blood transfusions or a gastroenterology consultation than the same group of patients receiving thromboprophylaxis. Length of stay (LOS) and days in the intensive care unit were significantly longer by 31% and 34% ($p < 0.0001$), respectively, for therapeutically anticoagulated patients. Of note, there was an increased in endoscopic procedures for patients on therapeutic anticoagulation; however, the difference was not statistically significant. Our study showed therapeutically anticoagulated patients were twice as likely to die during admission as those who only received thromboprophylaxis.
Conclusion: Our study shows a statistically significant increase in mortality, LOS, ICU days, transfusions, and gastroenterology consultations for patients on therapeutic anticoagulation. There was an increase in endoscopic procedures; however it was not statistically significant. This may be in part due to the small number of patients who received endoscopic procedures (less than 1.5% of our study sample). Our results speak to the dangers of empiric anticoagulation in the study population and caution against treating laboratory values for future novel diseases.

Table 1. Mortality and Resource Utilization for Patients Receiving Thromboprophylaxis Compared to Therapeutic Anticoagulation

	Odds Ratio	95% Confidence Interval
Mortality	0.46	0.42-0.49
Gastroenterology Consultation	0.59	0.51-0.68

Table 1. (*continued*)

	Odds Ratio	95% Confidence Interval
Abdominal Imaging	0.85	0.77-0.94
Blood Transfusions	0.69	0.64-0.75

S683

Analysis of Trends in Mortality Rate, Racial Disparity, and Outcomes Among U.S. Patients Hospitalized for Bleeding Esophageal Varices: A Decade-Long Retrospective Study From the National Inpatient Sample Database

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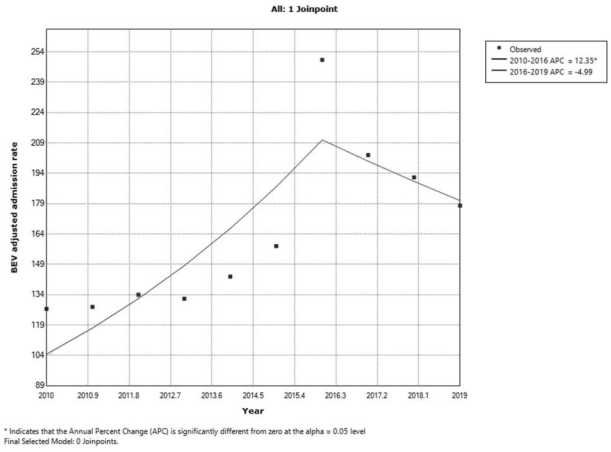
Introduction: Bleeding esophageal varices (BEV) is a life-threatening condition historically associated with high mortality. Recent epidemiologic data stratified by sex and race on hospital outcomes over the past decade are lacking. Our study aimed to evaluate 10-year trends in sociodemographic differences in patients hospitalized for BEV among adults in the U.S.
Methods: This retrospective longitudinal study involved BEV hospitalizations in the U.S. using the National Inpatient Sample collected from 2010 to 2019. The outcomes evaluated in this study were sociodemographic differences in inpatient mortality rate, mean length of hospital stay (LOS), and mean total hospital charges (THC). We used Stata® Version 17 software (StataCorp, Texas, USA) and Joinpoint Regression Program, Version 4.9.1.0, for data analysis. We set a p-value of < 0.05 for statistical significance throughout the study (Figure).
Results: From 2010 to 2019, there were 50,017 hospitalizations with a primary diagnosis of BEV. The BEV hospitalization appears to be highest among middle-aged whites, those with Medicare insurance, and hospitalization at large urban non-teaching centers. From 2010 to 2019, the BEV admission rate increased from 127 to 178 per million adult hospitalizations. Joinpoint analysis showed an average annual percent change of 6.2% (95% CI 4.4 – 8.2, $p< 0.001$). Over the period, mortality was 5.7% in males compared to 4.4% in females, 4.7% in Whites, 7.9% in Blacks, 5.0% in Hispanics, 5.8% in the low-income quartile, and 5.3% in the high-income quartile. Among the groups, only Hispanics significantly decreased mortality over the study period.
Conclusion: The findings of this retrospective study suggest that the 10-year trend in mortality rate and LOS for BEV hospitalizations remain primarily unchanged. However, there was a significant increase in total hospital charges. Blacks, Males, and low-income quartile patients were likelier to have higher mortality rates from BEV than their comparison groups.



[0683] **Figure 1.** Trends in Adjusted BEV Hospitalization Rate from 2010 to 2019.

S684

Assessing the Weekend Effect on Outcomes of Adults With Non-variceal Upper Gastrointestinal Hemorrhage as the Reason for Emergency Department Presentation in the United States

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Introduction: Non-variceal upper gastrointestinal hemorrhage (NUGIH) is defined as bleeding proximal to the ligament of Treitz in the absence of oesophageal, gastric or duodenal varices. This study assessed if there was a difference in outcomes among patients in the Emergency Department (ED) with non-variceal upper gastrointestinal hemorrhage who presented over the weekend compared to weekdays. We queried the US Nationwide Emergency Department Sample (NEDS) for 2018. The NEDS is coded using the International Classification of Diseases 10 th Revision coding system. The first listed diagnosis was taken as the reason for the ED encounter in keeping with NEDS research methods.
Methods: The study population included all ED encounters with a principal encounter diagnosis of NVUGIH obtained from literature review. We excluded encounters less than 18 years from the study. Outcomes assessed included a comparison of ED discharge rates, the mean number of procedures in the ED (EDP), mean total ED charges in USD, inpatient length of hospital stay (IPLOS), and hospital mortality rates between weekday and weekend visits. Multivariable regression analysis was performed to adjust outcomes for age categories, sex, hospital teaching status, hospital region, income quartile, primary payer, and Elixhauser Comorbidity Index (ECI).
Results: There were 229,920 presentations for NVUGIB to the ED in 2018, with 25% occurring over the weekend. The weekend encounters had a statistically significantly lower mean age (57.8 ±21.1 [standard deviation] vs 58.4 ±20.8 years, $p=0.009$), and a lower mean ECI (2.7 vs 2.8, $p=0.010$). There was no difference in sex, primary payer, and median income distribution. Among encounters for NVUGIH, a weekend visit was associated with a lower adjusted odds ratio (aOR) of ED discharge (aOR:0.94, $p=0.011$) and increased IPLOS (4.1 vs 4.0 days, $p=0.028$). There was no difference in mortality (0.9 vs 1.1%, aOR: 0.88, $p=0.200$), mean EDP, and mean total ED charges when compared to weekday encounters.
Conclusion: We postulate that the elderly, non-working population may have led to higher ECI and age in weekday presentations. The 6% decreased odds of being discharged from the ED over the weekend may be due to decreased availability of routine GI specialty services to properly triage patients. This likely impacted the duration of hospitalization, which was longer over the weekend. There is a need for prospective quality initiative projects to elucidate potential factors for the weekend effect on NVUGIH.

S685

Diagnostic and Therapeutic Interventions in Acute Variceal Bleeding: Trends, Mortality, and Outcomes Comparison by Timing of Procedures, NIS 2004-2019

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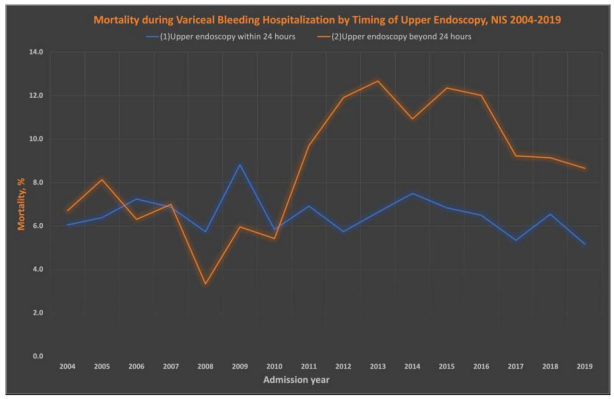
Introduction: Acute variceal bleeding (AVB) is a life-threatening emergency with a high mortality rate. Management requires endoscopic intervention after fluid resuscitation, ideally within 12 hours of presentation. We aimed to analyze AVB hospitalizations, the timing of procedures, and outcomes such as mortality and hospital resource utilization.
Methods: We extracted adult hospitalizations from Nationwide Inpatient Sample (NIS) 2004-2019yy with ICD-9 and ICD-10 Diagnosis codes of AVB (456.0,I85.01) and associated procedure codes of esophagoscopy (EGD) and esophageal variceal ligation (EVL) (42.22,42.23,42.33,42.91,44.43,45.13, 49.95,0DJ08ZZ,0W3P8ZZ,06L38CZ,06L34CZ). We divided procedure timing into early (< 24hrs) and delayed (>24hrs). Mortality, length of stay (LOS), and mean charges (MC) were used as outcomes. These outcomes were compared between early and delayed procedure groups.
Results: Over a 16-year period, AVB hospitalizations increased from 4,798 in 2004 to 8,095 in 2019, with a peak of 9,280 in 2016. Timing of procedures has not shown significant change, ranging from 76% to 80% of EGDs performed in < 24 hours across all years. There was significant male-to-female predominance (69% vs. 31% in 2004; 63% vs. 37% in 2019). The racial distribution was similar over time, except for a minor increase in Native American/Other and Asian or Pacific Islander hospitalizations and a decrease in Black patient hospitalizations. A large shift was noted in hospitalizations towards teaching institutions (39% in 2004 to 74% in 2019). Mortality of early and delayed procedure groups is demonstrated in Figure. Overall mortality was 6.4% (95% CI:6.02%-6.83%) in the early and 9.1% (95% CI: 8.18%-10.01%) in the delayed procedure group. MC has increased, by +Δ $62,527.00 for early and +Δ $105,406.00 for the delayed procedure group; Mean LOS was 5 (95% CI 5.0-5.1) and 9 days (95% CI 8.8-9.4) for early and delayed groups, respectively.
Conclusion: From 2004 to 2019, hospitalizations for acute variceal bleeding, as well as associated therapeutic procedures, costs, and lengths of stay have steadily increased. There was a notable spike in hospitalizations in 2016, however, this coincided with ICD coding transition. Most EGD and EVL procedures (76-80%) were performed in < 24 hours from admission. Inpatient mortality is notably higher if interventions for AVB are delayed. Early and timely interventions should be strongly encouraged and performed.



[0685] **Figure 1.** Mortality of Variceal Bleeding Hospitalizations by Timing of Upper Endoscopy, NIS 2004-2019.

S686

HAS-BLED Score Is Strongly Associated With a Rebleed in Patients With an Initial Episode of Gastrointestinal Bleeding Following Coronary Stenting

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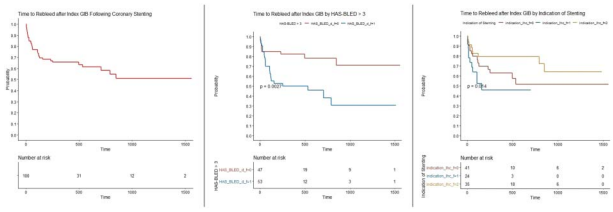
Introduction: The HAS-BLED score was developed as a decision tool for starting anticoagulation in patients with atrial fibrillation. It has not been validated in patients already on dual antiplatelet therapy (DAPT) for coronary stenting. We aimed to determine whether the HAS-BLED score was associated with a recurrence of gastrointestinal bleeding (GIB) after an initial episode. We also sought to determine other factors associated with a rebleed including pre-stenting endoscopy and continuation of P2Y12 inhibitor after the initial GIB.
Methods: We performed a retrospective study of patients who had an index GIB following coronary stenting between January 2015 and June 2021 at a single academic center. Clinical data was collected retrospectively. Kaplan-Meier Estimates and Cox Proportional Hazards Regression Analysis were utilized to determine factors associated with a rebleed. Statistical analysis was performed utilizing BlueSky Statistics software v. 7.0.
Results: A hundred patients were included in the study. (Table) 36 had a rebleed (median time to rebleed, 53.5 days, 14.8-212.5). Having had a major bleed prior to the coronary stenting (HR=2.82, 95% CI: 1.45-5.49, p=0.002) and labile INR (HR=2.75, 95% CI: 1.43-5.30, p=0.003) were strongly associated with an increased risk of a rebleed. Chronic kidney disease (dialysis-dependent, or creatinine > 2.26 mg/dL) was weakly associated with a rebleed, p=0.0823. Every point increase in the HAS-BLED score was associated with a 46% increased risk of a rebleed, p=0.0014. A HAS-BLED score of greater than 3 was associated with a 187% increased risk of a rebleed. A cutoff greater than 3 had a sensitivity 42.2%, specificity 72.2%, and positive predictive value of 50.9% for a rebleed. The indication for the initial coronary stenting, **Figure**, and platelet count and number of red blood cell transfusions at the time of index GIB were associated with a rebleed at p < 0.05. A pre-stenting endoscopy or being continued on prescribed P2Y12 inhibitor were not associated with a rebleed. (Figure)
Conclusion: In our single-center study, we found the HAS-BLED score at the time of coronary stenting was specific but not sensitive for a rebleed. Regardless, the HAS-BLED score may serve as a predictive tool for a rebleed in this patient population. Of its individual variables, chronic kidney disease, prior major bleeding, and labile INR were associated with a higher rebleed risk. We found that the continuation of P2Y12 inhibitor did not increase the risk of rebleed.



[0686] **Figure 1.** Kaplan-Meier Estimates for A) Time to Rebleed after Index GIB Following Coronary Stenting for All Patients, B) Time to Rebleed after Index GIB by HAS-BLED Score > 3, and C) Time to Rebleed after Index GIB by Indication of Coronary Stenting. Legend A: Red = All Patients; Legend B: Blue = HAS-BLED > 3, Red = HAS-BLED 3 or less; Legend C: Blue = STEMI, Red = NSTEMI, Yellow = Stable CAD.

Table 1. Baseline Characteristics of All Patients with an Index GIB and Cox Proportional Hazard Regression Analysis for the Occurrence of a Rebleed

Baseline Characteristics Median (IQR) or Fraction (%)		Unadjusted Cox Regression For Recurrent GI Bleeding	
	All Patients N=100	HR (95% CI)	p-value
Age at Coronary Stent Placement, per 1 year	70.5 (61.7-77.8)	1.00 (0.75-1.34)	1.00
Male gender	74 (74.0%)	0.76 (0.38-1.51)	0.43
White Race	100 (100%)	NA	NA
Hispanic Ethnicity	1 (1.0%)	NA	NA
Never Smoker	32 (32.0%)	0.52 (0.24-1.16)	0.1093
Body Mass Index, per 1 kg/m^2	30.0 (26.4-30.4)	1.00 (0.95-1.05)	0.91
Obesity	50 (50.0%)	1.23 (0.64-2.38)	0.53
Comorbidities – defined as per HAS-BLED			
Hypertension	91 (91.0%)	0.70 (0.25-1.98)	0.50
Chronic Kidney Disease	15 (15.0%)	2.04 (0.91-4.57)	**0.0823**
Liver Disease	15 (15.0%)	1.39 (0.57-3.37)	0.47
History of stroke	12 (12.0%)	0.85 (0.30-2.42)	0.77
Prior Major Bleeding (before LHC)	28 (28.0%)	2.82 (1.45-5.49)	**0.0023**
Labile INR	29 (29.0%)	2.75 (1.43-5.30)	**0.0025**
Age > 65	66 (66.0%)	1.64 (0.77-3.50)	0.20
Medication predisposing to bleeding	100 (100.0%)	NA	NA
Alcohol use	26 (26.0%)	1.14 (0.53-2.42)	0.74
HAS-BLED score	4 (3-5)	1.46 (1.16-1.84)	**0.0014**
HAS-BLED > 3	53 (53.0%)	2.87 (1.41-6.17)	**0.0041**
Coronary Catheterization Data			
Pre-catheterization Endoscopy Performed	12 (12.0%)	1.59 (0.62-4.12)	0.34
Delay in LHC due to endoscopy	1 (8.3%)	NA	NA
Indication for coronary catheterization			
Acute Coronary Syndrome	65 (65.0%)	2.29 (1.07-4.92)	**0.0332**
NSTEMI	41 (41.0%)	1.07 (0.55-2.07)	0.85
STEMI	24 (24.0%)	2.52 (1.24-5.12)	**0.0110**
Stable CAD	35 (35.0%)	0.44 (0.20-0.94)	**0.0332**
Number of Stents Placed, per 1 stent	2 (1-2)	1.23 (0.87-1.75)	0.24
3 or more stents placed	20 (20.0%0	1.45 (0.66-3.20)	0.36
Hemoglobin prior to catheterization, per 1 g/dL	12.70 (10.5-14.2)	0.90 (0.78-1.03)	0.13
Medications After Catheterization			
Proton pump inhibitor	31 (31.0%)	0.74 (0.35-1.57)	0.43
SSRI	12 (12.0%)	1.29 (0.50-3.31)	0.60
NSAIDs	2 (2.0%)	NA	NA
Anticoagulation	42 (42.0%)	1.24 (0.64-2.38)	0.53
Warfarin	27 (27.0%)	1.92 (0.63-5.88)	0.25
DOAC	14 (14.0%)	0.57 (0.19-1.74)	0.33
Indication for Anticoagulation			
Atrial Fibrillation	33 (33.0%)	1.92 (0.44-8.39)	0.38
DVT/PE	6 (6.0%)	0.90 (0.21-3.93)	0.89
Initial Episode of Gastrointestinal Bleed (GIB)			
Median time to Index GIB, days	166 (22.8-374.8)	NA	NA
P2Y12 inhibitor taken prior to admission	89 (89.0%)	1.21 (0.43-3.42)	0.72
Presenting sign			
None	10 (10.0%)	1.10 (0.39-3.13)	0.86
Hematemesis	11 (11.0%)	0.77 (0.23-2.50)	0.66
Melena	50 (25.0%)	0.67 (0.35-1.30)	0.24
Hematochezia	32 (32.0%)	1.00 (0.50-2.01)	0.99
Labs at time of GIB			
Hemoglobin, per 1 g/dL	8.4 (6.7-10.1)	0.87 (0.75-1.00)	**0.0506**
Hemoglobin drop, per 1 g/dL	3.8 (2.7-5.5)	1.03 (0.90-1.18)	0.65
Platelets, per 50 x 10^9/L	207 (167.8-272.8)	1.25 (1.07-1.46)	**0.005**
INR, per 1 point	1.2 (1.1-1.9)	1.14 (0.95-1.36)	0.15
Endoscopy Performed	81 (81.0%)		

Table 1. (*continued*)

Baseline Characteristics Median (IQR) or Fraction (%)		Unadjusted Cox Regression For Recurrent GI Bleeding	
	All Patients N=100	HR (95% CI)	p-value
Inpatient Procedure	74/81 (91.4%)	1.45 (0.34-6.12)	0.61
Normal endoscopy	9/81 (11.1%)	1.67 (0.58-4.82)	0.34
Esophageal varices	0	NA	NA
Esophagitis	10/81 (12.4%)	1.67 (0.57-4.87)	0.35
Gastritis	11/81 (13.6%)	1.67 (0.68-4.11)	0.26
Ulcerations	33/81 (40.7%)	0.78 (0.36-1.67)	0.52
Source of Bleeding Found			
Unknown	26 (32.1%)	1.23 (0.58-2.61)	0.59
Intervention Performed	34/81 (42.0%)	0.63 (0.29-1.35)	0.23
Number of pRBCs transfused, per 1 unit	1 (0-3)	1.14 (1.01-1.30)	**0.0453**
Transfer to ICU during hospitalization	21 (21.0%)	1.17 (0.51-2.68)	0.71
Severe GIB	26(26.0%)	1.49 (0.73-3.04)	0.27
P2Y12 Inhibitor Discontinued due to GIB	19/100 (19.0%)	0.56 (0.73-3.04)	0.27
Endpoint			
Recurrence of GI Bleeding	36/100 (36.0%)	NA	NA
Median time to recurrent GIB, days	53.5 (14.8-121.5)	NA	NA

S687

Efficacy of Thalidomide for the Treatment of Gastrointestinal Bleeding From Vascular Malformation: A Meta-Analysis and Systematic Review

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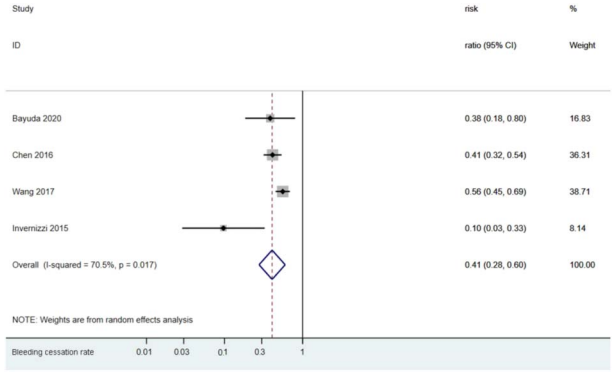
Introduction: Gastrointestinal bleeding from vascular malformation is hard to treat. Thalidomide has been shown with therapeutic effects in several studies. We performed a meta-analysis for its efficacy on GI bleeding due to vascular malformation.
Methods: MEDLINE, the Cochrane Library, and EMBASE were searched up to June 5th. The following keywords were used: "Arteriovenous Malformation", "AVM", "Angioectasia", "Angiodysplasia", "Vascular Malformation", "Telangiectasia", "Thalidomide", "Contergan", "Thalomid", "α-Phthalimidoglutarimide". Observational studies and clinical trials that utilized Nivolumab for refractory esophageal cancer were included. Bleeding cessation rates were studied as primary outcomes. Data were analyzed with STATA version 16.0 (Stata Corp, College Station, TX, USA).
Results: A total of 405 manuscripts were identified and four observational or clinical studies with 194 patients meeting inclusion criteria. Patient median or mean ages were more than 50 in all 4 studies and 89 (45.4%) individuals were male. The dose of thalidomide ranged from 50 mg to 200 mg per day. The duration was from 3 months to 45 months. For patients with gastrointestinal bleeding from vascular malformation, thalidomide has a bleeding cessation rate of 41% (95%, 28%-60%) in 6-12 months.
Conclusion: Many of the studies claimed that thalidomide was able to decrease bleeding cessation rates significantly, while our meta-analysis with all available studies did not show a significant decrease in bleeding cessation rates compared to the non-thalidomide group reported by Wang's study (41% vs 46%) (Figure). Several studies showed that thalidomide was helpful in the yearly bleeding episodes, yearly red blood cell transfusion requirement, transfusion dependence, overall and bleeding-related hospitalization rate, endoscopic treatment requirement, and hemoglobin level changes, but none of the above topics had enough data to perform a meta-analysis. Therefore, further studies are needed to evaluate the efficacy of thalidomide on Gastrointestinal bleeding from vascular malformation, besides the bleeding cessation rates.



[0687] **Figure 1.** Forest plot of thalidomide's effect on cessation of gastrointestinal bleeding from vascular malformation.

S688

Acute Gastrojejunal Ulcer With Hemorrhage: Nationwide Trends in Hospitalization, Demographic Disparity, Cost of Care, and Outcomes

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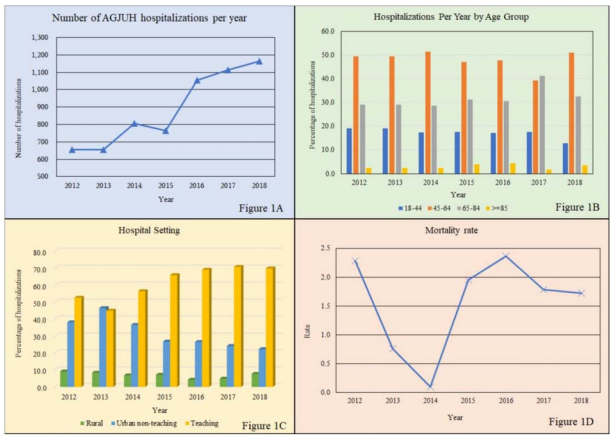
Introduction: Complications at the gastrojejunal anastomosis after surgery can potentially be serious and even life threatening such as an acute gastrojejunal ulcer with hemorrhage (AGJUH). Limited epidemiological data exists on the number of hospitalizations, demographic variation, cost of care, comorbidity measures, and outcomes for AGJUH.
Methods: We analyzed the National Inpatient Sample (NIS) database for all hospitalizations with AGJUH (ICD-9 code 534.00 and ICD-10 code K28.0 as applicable) as primary or secondary diagnosis during the period from 2012-2018. NIS is the largest all-payer inpatient care database in the United States. Statistical significance of variation in the number of hospitalizations, demographic disparity, cost of care, comorbidity measures, and outcomes during the study period were determined using Cochran-Armitage trend test.
Results: Between 2012 and 2018, number of hospitalizations for AGJUH increased from 655 to 1,165 ($p< 0.0001$, Figure A). Hospitalizations with AGJUH were found to be more common in women ($p=0.0001$) and Caucasians ($p=0.0008$). Although age group 45-64 remained the most affected, age group 65-84 showed the greatest rise from 29.0% to 32.6% ($p< 0.0001$, Figure B). Generally, South remained the most affected region ($p=0.01$) throughout the study period. There was a significant rise in the Midwest from 13.7% to 20.6% ($p=0.02$) with a concurrent decrease in the Northeast from 29.0% to 20.2% ($p=0.001$). A proportional decrease in the number of hospitalizations was seen at both, urban non-teaching (38.2% to 22.3%, $p< 0.0001$, Figure C) and rural hospitals (9.2% to 7.7%, $p=0.005$, Figure C), while the number increased at urban teaching hospitals (52.7% to 70.0%, $p< 0.0001$, Figure C). Mean length of hospital stay for AGJUH decreased from 7.0 ± 0.8 to 6.2 ± 0.4 days ($p=0.34$). Overall mortality decreased from 2.3% to 1.7% ($p=0.09$, Figure D). Some of the most associated comorbid conditions with AGJUH were hypertension, fluid and electrolyte disorders, obesity, depression, and diabetes mellitus.
Conclusion: A significant rise in the number of hospitalizations with AGJUH was found with interesting demographic variations and association with comorbidities. Decrease in length of hospital stays as well as overall mortality during the study period was likely due to increased use of newer, more advanced, diagnostic and treatment modalities. Further studies are needed to identify factors responsible for such trends to better elucidate our findings.



[0688] **Figure 1.** a) mortality rate, b) rate of refractory bleeding, c) rate of endoscopic intervention.

S689

Utilization of Risk Stratification Scores to Triage Patients With GI Bleed: A Retrospective Cohort Analysis

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Introduction: Gastrointestinal (GI) bleeding affects 30-40 per 100,000 hospitalized patients annually. Many of these patients can have severe bleeding with hemodynamic instability and rapid clinical deterioration, often requiring higher levels of care such as intermediate units (IU) or intensive care units (ICU). This study aimed to compare various risk stratification tools with patient outcomes to find which tools can best help providers triage patients most appropriately on admission.
Methods: This is a single-center retrospective cohort analysis of patients admitted to IU or ICU with GI bleeding as their primary diagnosis from March, 2015 - March, 2021. Medical records of patients above 18 years of age were reviewed for baseline characteristics, lab values, 30-day mortality, and 90-day readmission. Charlson comorbidity index (CCI), Glasgow-Blatchford Bleeding Score (GBS), AIMS 65, Assessment of Blood Consumption (ABC), quick Sequential Organ Failure Assessment (qSOFA) scores on admission were calculated. Patients were compared according to the level of care. Pearson Chi-square and Mann Whitney U were applied to compare groups. (Figure)
Results: Out of 299 patients admitted with GI bleeding, 195 (65.2%) were admitted to IU and 104 (34.8%) to ICU. Baseline characteristics are illustrated in Table. As for treatment, antibiotics (28.8% ICU vs. 10.3% IU; $p< 0.01$) and PRBC transfusions (median: 3.0 ICU vs. 2.0 IU; $p< 0.01$) were more frequently utilized in ICU. Outcome variables assessed included need for endoscopic intervention, time to scope, and 90-day readmission rates; no significant difference was seen between groups. Patients admitted to the IU had lower 30-day mortality ($p=0.02$). Out of the five scores assessed, GBS, AIM-65, and qSOFA were noted to be statistically significant with score being higher in patients admitted to ICU: median (interquartile range (IQR))– GBS: 12 (9, 14.75) vs. 11.00 (8, 13); $p< 0.05$; AIM-65: 1 (1,2) vs. 1(0,2); $p< 0.01$, and qSOFA: 0(0,1) vs. 0(0,1); $p< 0.01$.No significant difference was noted between the median (IQR) CCI and ABC scores between ICU vs. IU: CCI: 5(3,7) vs. IU: 5 (3,7); $p >0.05$ and ABC: 0 (0,1) vs. IU: 0 (0,1); $p >0.05$.
Conclusion: Our study highlights the utility of scoring tools including GBS, qSOFA, and AIM-65 to assist with triaging GI bleed patients to an appropriate level of care. The scores should be calculated at the time of admission for GI bleed patients and those with elevated scores may benefit from closer monitoring in the ICU.

Table 1. Illustrating the comparison of baseline characteristics, medical history, end organ damage (troponin leak and AKI), 30-day mortality, and 90-day readmission rates, between the patients admitted to intensive care unit and intermediate level of care

	ICU, n (%) = 104 (34.8%)IU n, (%) = 195 (65.2 p-value		
Age, mean ± SD (median, IQR)	**65.56 ±14.64 (65.50, 55.25-77.00)**	**68.75±15.71 (71.00, 57.00-80.00)**	**0.078**
Gender			0.601
Male	57 (54.8%)	113 (57.9%)	
Female	47 (45.2%)	82 (42.1%)	
Race			0.476
Caucasian	69 (66.3%)	126 (64.6%)	
Black	11 (10.6%)	32 (16.4%)	
Hispanic	7 (6.7%)	16 (8.2%)	
Other including data unavailable	17 (16.4%)	21 (10.8%)	
History of HTN	56 (53.8%)	125 (64.1%)	0.155
History of DM	29 (27.9%)	51 (26.2%)	0.747
History of CAD	25 (24%)	78 (40%)	0.006
History of HF	32 (30.8%)	49 (25.1%)	0.296
History of CKD	27 (26%)	53 (27.2%)	0.821

Table 1. (*continued*)

	ICU, n (%) = 104 (34.8%)IU n, (%) = 195 (65.2 p-value		
Age, mean ± SD (median, IQR)	**65.56 ±14.64 (65.50, 55.25-77.00)**	**68.75±15.71 (71.00, 57.00-80.00)**	**0.078**
History of Liver disease	23 (22.1%)	35 (17.9%)	0.482
History of DVT/PE	5 (4.8%)	23 (11.9%)	0.047
Personal history of GI tract cancer	10 (9.6%)	24 (12.3%)	0.593
Family history of GI tract cancer	5 (4.8%)	14 (7.2%)	0.625
Use of NSAIDs	17 (16.7%)	23 (12.1%)	0.280
Use of anticoagulants	40 (39.2%)	61 (31.8%)	0.201
Use of antiplatelets	30 (29.4%)	60 (31.1%)	0.766
Use of PPI at home	30 (29.4%)	69 (36.1%)	0.377
Troponin leak	12 (11.5%)	11 (5.6%)	0.172
AKI	48 (46.2%)	46 (23.6%)	< 0.001
Antibiotics	30 (28.8%)	20 (10.3%)	< 0.001
No. of PRBCs, mean ± SD (median, IQR)	3.29 ±2.64 (3.0, 2-4)	2.13 ±2.61 (2.0, 0-3)	< 0.01
Endoscopic intervention	41 (39.4%)	59 (30.3%)	0.110
Time to scope, mean ± SD (median, IQR)	1.35±1.78 (1.0, 0.75-2.00)	1.72±1.46 (1.0, 1-2)	0.051
Alive at 30 days	81 (77.9%)	171 (88.1%)	0.020
90-day readmission due to GI Bleed	17 (16.3%)	41 (21%)	0.330

ICU – Intensive Care Unit; HTN – Hypertension; DM – Diabetes mellitus; CAD – coronary artery disease; HF – Heart Failure; AF – Atrial Fibrillation; CKD – Chronic Kidney Disease; DVT – Deep venous thrombosis; PE – Pulmonary embolism; NSAIDs – Non steroidal anti-inflammatory drugs; PPI – Proton Pump Inhibitors; AKI – Acute Kidney Injury; PRBC – Packed Red Blood Cells.

S690

"Does the Early Bird Catch the Worm?" Prognostic Value of Early Endoscopic Intervention in GI Bleed Patients

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Introduction: Early endoscopic intervention (within 6 hours of admission) in patients with gastrointestinal bleeding (GIB) increases overall mortality but does not improve the mortality, length of stay (LOS), or transfusion requirement in lower GIB, while reducing the LOS in upper GIB. We aimed to study the prognosis of patients undergoing endoscopic intervention in < 1 day compared to ≥ 1 day.
Methods: This is a single-center retrospective cohort analysis of patients admitted to Intermediate unit and ICU with GIB as their primary diagnosis (03/2015 – 03/2021). Medical records of patients above 18 years of age were reviewed for baseline characteristics and lab values. Charlson comorbidity index (CCI), Glasgow Blatchford Score (GBS), AIMS 65, ABC, quick Sequential Organ Failure Assessment (qSOFA) scores on admission were calculated. Patients were compared according to time to scope i.e., < 1 day vs. ≥ 1 day. Outcome variables assessed included hospital LOS, 30-day mortality, and 90-day readmission rate. Pearson Chi-square and Mann Whitney U were applied to compare groups.
Results: Out of 212 patients admitted with GIB, 196 (92.5%) underwent endoscopic intervention in ≥ 1 day and 16 (7.5%) within 1 day. Baseline characteristics are illustrated in (Table). Patients scoped ≥ 1 day had higher PRBCs transfused (median 3 vs. 2; p< 0.01) and less frequently received antibiotics (15.3% vs. 37.5%, p< 0.01). None of the scores (GBS, AIM-65, qSOFA, CCI, and ABC) were significantly different between two groups (p-value >0.05). Median (interquartile range (IQR)) of the scores according to time to scope i.e., < 1 day vs. ≥ 1 day is as follows: 14.5 (8.3,15.8) vs. 12.0 (9.0, 14.0); AIM-65: 1.0(0.0, 1.0) vs. 1.0(1.0,2.0); qSOFA: 0.5 (0.0,1.0) vs. 0.0(0.0,1.0); CCI: 4.5(1.5,6.8) vs. 5.0(3.0,6.0); ABC: 0.0(0.0,1.0) vs. 0.0(0.0,0.0). There was no significant difference in hospital LOS and 30-day mortality. However, 90-day readmission rate were higher in patients who underwent endoscopic intervention < 1 day (p=0.04).
Conclusion: Comparable risk stratification scores indirectly indicate equivalent severity of GIB between the two groups on presentation. According to our study, early endoscopic intervention does not significantly impact the LOS and 30-day mortality, but increases 90-day readmission rates. Further studies, primarily a prospective analysis, should be pursued to determine whether early endoscopic intervention should be avoided in certain scenarios.

Table 1. Illustrating the comparison of baseline characteristics, medical history, end organ damage (troponin leak and AKI), management, hospital length of stay, 30-day mortality, and 90-day readmission rates, between the patients who underwent endoscopic intervention in less than one day compared to one or more day

Time to scope	Less than 1 day (n =16)	Equal to or greater than 1 day (n=196)	p-value
Age, mean ± SD (median, IQR)	61.19 ±13.01(57.00,52.50-74.25)	66.80±15.12 (67.50, 56.00-78.00)	ns
Gender			
Male	8 (50.0%)	113(57.6%)	ns
Female	8 (50.0%)	83(42.4%)	
Race			
Caucasian	10(62.4%)	126 (64.3%)	
Black	4(25.0%)	28(14.3%)	ns
Hispanic	1(6.3%)	27(13.7%)	
Other including data unavailable	1(6.3%)	15(7.7%)	
History of HTN	7 (43.8%)	123 (63.1%)	ns
History of DM	4 (25.0%)	49 (25.0%)	ns
History of CAD	3 (18.8%)	128 (65.3%)	ns
History of HF	1(6.2%)	52(26.5%)	ns
History of CKD	4(25.0%)	49(25.0%)	ns
History of Liver disease	5(31.3%)	33 (16.9%)	ns
History of DVT/PE	0 (0.0%)	22 (11.2%)	ns

Table 1. (*continued*)

Time to scope	Less than 1 day (n =16)	Equal to or greater than 1 day (n=196)	p-value
History of atrial fibrillation	1(6.2%)	49(25.0%)	ns
Personal history of GI tract cancer	1 (6.3%)	16 (8.2%)	ns
Family history of GI tract cancer	0 (0.0%)	10 (5.3%)	ns
Use of NSAIDs	1(6.2%)	27(14.1%)	ns
Use of anticoagulants	1 (16.3%)	69 (35.6%)	< 0.05
Use of antiplatelets	0(0.0%)	68(35.1%)	< 0.01
Use of PPI at home	5(31.3%)	64(33.3%)	ns
History of smoking	7 (46.6%)	88 (46.1%)	ns
History of alcohol	9 (60%)	81 (42.4%)	ns
History of drug use	0 (0.0%)	8 (4.3%)	ns
NSTEMI/STEMI	0(0.0%)	15(2.6%)	ns
AKI	3 (18.8%)	62 (31.6%)	ns
Antibiotics	6 (37.5%)	30 (15.3%)	< 0.01
PRBc transfused: Median (IQR)	2(1,3)	3(2,4)	< 0.01
No. of patients intubated	2(12.5%)	13(6.63%)	ns
No. of patients			
ICU	7(43.7%)	15(7.7%)	ns
IU	9(56.3%)	80(92.3%)	
Source of GI Bleed			
Upper	13(81.2%)	131(77.9%)	
Lower	0 (0.0%)	31(18.4%)	ns
Both	3 (18.8%)	6(3.6%)	
Hospital length of stay, mean ± SD (median, IQR)	5.63 ± 4.47(4.00,3.00-7.00)	6.34 ±4.20(5.00,4.00-8.00)	ns
Alive at 30 days	15 (93.7%)	174(88.8%)	ns
90-day readmission due to GI Bleed	7 (43.8%)	41 (21.4%)	0.04

HTN – Hypertension; DM – Diabetes mellitus; CAD – Coronary artery disease; HF – Heart Failure; CKD – Chronic Kidney Disease; DVT – Deep venous thrombosis; PE – Pulmonary embolism; AF – Atrial Fibrillation; NSAIDs – Non steroidal anti-inflammatory drugs; PPI – Proton Pump Inhibitors; AKI – Acute Kidney Injury; PRBC – Packed Red Blood Cells; ICU – Intensive care unit; IU – Intermediate unit.

S691

Assessment of Occult Blood Testing in Acute Hospital Settings: A Multicenter GI Fellow Driven Study

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Introduction: Fecal occult blood testing (FOBT) is an outpatient screening tool for colorectal cancer. It is widely misused in the hospital setting, without accounting for false positives or negatives resulting in unnecessary endoscopic procedures, increased costs and increased length of stay. The aim of our study is to understand the knowledge and current utilization of FOBT among internal medicine residents from multiple programs across the USA.

Methods: This is a multicenter survey conducted by a GI fellow in about 25 Internal Medicine Residency programs in Washington-DC, Pennsylvania, New York, New Jersey, Florida, Indiana, Illinois, Georgia, and California. A 15-questionnaire survey on FOBT was emailed on May 18th, 2022, with follow-up reminders until June 3rd, 2022. We considered the end of the academic year as an ideal time to evaluate the understanding and clinical practice of internal medicine trainees.

Results: A total of 227 residents responded to our survey {n=96 (42.2%) PGY-I, n=67 (29.5%) PGY-II & n=64 (28.2%) PGY-III}. Overall, 66.7% i.e., 2/3rd of residents sometimes or always ordered FOBT and 67.4% have ordered this test more often in inpatient than in outpatient settings. Approximately 60% of the residents had knowledge of dietary restrictions but only 32% of the residents were questioning the patients before ordering it. The triggers for ordering FOBT were mostly anemia (92.5%) followed by change in stool colour (61%), weight loss (60%) and bleeding per rectum (47.5%). 62% of respondents felt influenced by their supervisors but 57.2% felt that FOBT results will change their management. Overall, as postgraduate year training increased, trainees were less likely to order FOBT for suspected GI bleeding (Table).

Conclusion: Our survey results showed that residents were influenced by their supervisors and ordered FOBT largely in the inpatient setting. Although there was noted improvement in understanding of the futility of FOBT in suspected acute GI bleeding, more than half of final year trainees would still order FOBT first. There is a need for better education of internal medicine trainees in the utilization of FOBT.

Table 1. **Statistical analysis comparing the level of training with preference to FOBT vs. GI Consult for a suspected GI Bleed**

	For a suspected GI Bleed, which of the following would you consider first		Logistic regression analysis, comparing PGY-I with PGY-II & III		
Postgraduate Year	GI Consult	FOBT	Odds Ratio	Confidence Interval	P-Value
PGY – I	34 (35.4%)	62 (64.6%)	**Ref**	**Ref**	**Ref**
PGY – II	28 (41.8%)	39 (58.2%)	0.76	0.40 - 1.44	0.820
PGY – III	37 (43.6%)	27 (56.4%)	0.40	0.21 - 0.77	0.006

S692

Trends and Disparities in Outcomes of Hospitalizations With Dieulafoy Lesions: A Decade-Long Analysis of the Nationwide Inpatient Sample

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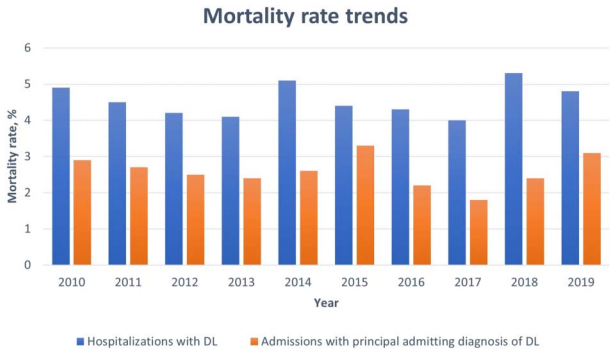
Introduction: Dieulafoy lesion (DL) is a rare yet potentially life-threatening cause of acute gastrointestinal bleeding. There is a paucity of research on the impact of sociodemographic indices on DL hospitalization outcomes. This study aimed to describe the epidemiologic trends and effects of sociodemographic disparities on outcomes among DL hospitalizations over a decade.
Methods: We queried Nationwide Inpatient Sample (NIS) databases from 2010 to 2019, identified hospitalizations with DL, and excluded those of patients less than 18 years. We obtained the incidence and admission rate of DL per 1,000,000 adult hospitalizations for each year. We analyzed trends in mortality rate, mean length of hospital stay (LOS), and mean total hospital charge (THC). We highlighted disparities in outcomes stratified by sex, race, and mean household income (MHOI) quartile. We used multivariable regression analysis to obtain trends in incidence and admission rates, mortality, LOS, and THC adjusted for age categories, sex, and race. We used Joinpoint regression analysis to obtain trends in adjusted rates. Threshold for statistical significance was set at 0.05.
Results: Of the 305 million hospitalizations included in our study, 59,862 were complicated by DL, with 40,356 principal admissions for DL. On Joinpoint analysis, there was no trend in adjusted incidence rate ($p = 0.1$) or adjusted admission rate ($p = 0.05$) over the study period. There was also no trend in adjusted mortality rate among all hospitalizations with DL (p trend = 0.855), admissions with principal diagnosis of DL (p trend = 0.754) or adjusted LOS (p trend = 0.879) but there was a US$4,011 increase in adjusted THC (p trend < 0.001).Middle-aged adults had increased odds of mortality (adjusted odds ratio, aOR = 1.48) compared to young adults ($p = 0.046$). Females had 16% lower odds of adjusted mortality (p trend = 0.046), 0.67 days reduction in adjusted LOS (p trend = 0.001), and US$16,905 reduction in adjusted THC (p trend < 0.001) compared to males. Blacks had 2.6 days increase in adjusted LOS and US$33,685 increase in adjusted THC (both p trends < 0.001) compared to Whites. Hispanics had increased odds of mortality (aOR = 1.76), 1.5 days increase in adjusted LOS, and US$50,476 increase in adjusted THC compared to Whites ((p trends = 0.018, 0.003 and < 0.001 respectively) (Figure).
Conclusion: Outcomes of DL hospitalizations were worse in middle-aged adults, males, and ethnic minorities. Further studies may be needed to elucidate the reasons behind these findings.



[0692] **Figure 1.** Trends in mortality rates among hospitalizations with DL and admissions with principal admitting diagnosis of DL.

S693

The Timing of Esophagogastroduodenoscopy (EGD) and Its Impact on Patients With Cirrhosis and Upper GI Bleeding

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Introduction: GI bleeding in patients with cirrhosis, particularly those with gastroesophageal variceal bleeding have a high rate of morbidity and mortality. Gastroenterological society guidance has recommended endoscopy within 24 hours for GI bleeding. However, endoscopy for GI bleeding in patients with alcohol associated cirrhosis is frequently delayed due to withdrawal concerns. We studied the timing of endoscopy for GI bleeding in patients with alcohol use disorder (AUD) associated cirrhosis and its impact on outcomes.
Methods: A retrospective chart review of patients age 18- 90 with a diagnosis of cirrhosis and GI bleeding, identified by ICD codes at Northwell Health's tertiary medical centers from 10/2019 to 2/2022 was conducted. Data regarding time from admission to EGD, age, gender, history of alcohol use, MELD-Na score, length of hospital stay, benzodiazepine requirements, admission to the ICU, and mortality were assessed and analyzed. Timing of endoscopy was categorized as early or late (< 24 and >24 hours within admission respectively).
Results: A total of 205 patients were found to have AUD and alcohol associated cirrhosis. Of these, 150 eventually underwent EGD during the admission. Early EGD did not correlate with MELD-Na scores, mortality, blood transfusion requirements, admission hemoglobin, or length of stay (Table). However, those who underwent EGD within the first 24 hours had higher rates of ICU admission (RR 2.4217 and CI 1.5037-3.9001, p=0.0003). The need for benzodiazepine use for alcohol withdrawal had a slight positive association with late endoscopy (RR = 1.4239, CI 1.0633-1.9068, p=0.0177) but did not affect mortality (RR 1.1086, CI 0.7153-1.7182, p=0.6447) or ICU admissions (RR 1.1086, CI 0.7153-1.7182, p=0.6447).
Conclusion: In patients with alcohol withdrawal and active GI bleeding, early compared to late EGD past 24 hours appears to not have an impact on patient's mortality and length of stay in the hospital. Early EGD is associated with significantly higher rates of ICU admission, as it facilitates the setting for earlier EGD and is not an adverse event. Our study suggests that a late EGD pending control of alcohol withdrawal symptoms is not associated with adverse outcomes. A further larger series study is warranted to delineate the optimal timing of endoscopy in this particular population.

Table 1. Early EGD within 24 hours and association with various outcomes/patient characteristics

	Odds Ratio	p-value	Confidence Interval
Early EGD vs Length of Stay	0.9152	0.0019	0.8653-0.9679
Early EGD vs PRBC transfused	0.9613	0.4806	0.8615-1.0727
Early EGD vs MELD-Na	0.9843	0.4661	0.9434-1.0270
Early EGD vs admission Hgb	0.9876	0.8516	0.8664-1.1258

S694

Increasing Utilization of Arterial Embolization and Surgeries in Patients Admitted With Lower GI Hemorrhage: Insight Into the U.S. Population

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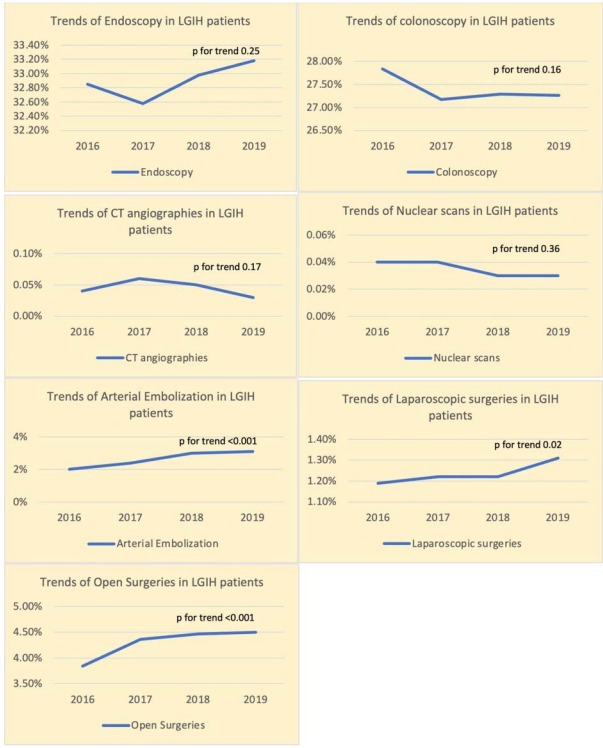
Introduction: Lower gastrointestinal hemorrhage (LGIH) is one of the common reasons for hospitalization. In majority of the cases, bleeding stops spontaneously, however, older patients are at risk of high mortality and morbidity. Many diagnostic and therapeutic modalities are being utilized in the management of LGIH including upper gastrointestinal endoscopy, colonoscopy, CT angiogram (CTA), tagged RBC, laparoscopic and open surgeries. We aimed to evaluate the trends and utilization of these modalities in LGIH management.

Methods: All adult patients with a primary diagnosis and/or secondary diagnosis of LGIH were included in study using nationwide inpatient sample database from January 2016 to December 2019. Wilcoxon rank sum test was used for comparing continuous variables, Chi-square tests for categorical variables and linear regression to evaluate the trend over time. The primary outcome was to examine the utilization trend of imaging studies and procedures in patients admitted with LGIH (Table).
Results: The sample size included 3,050,044 adult patients, of which 1,543,627(50.61%) were females. The mean age of patients was 70 ± 0.2 years. The utilization rates of upper gastrointestinal endoscopy and colonoscopy were the highest which has remained constant over the years. Similarly, the trend of CTA and nuclear scan use have been insignificant. The rate of arterial embolization has increased from 2% to 3.1% since 2016, p< 0.001. The rate of laparoscopic surgery increased from 1.19% to 1.31% (p=0.02) and that of open surgery increased from 3.84% to 4.5% (p< 0.001) from 2016 to 2019 (Table).
Conclusion: This study illustrates a significant uptrend utilization of surgical modalities that indicates increasing rate of complex cases of LGIH and higher rate of complications requiring more invasive approach. Recent trend of increased utility of arterial embolization and its efficacy in the management of LGIH are promising. It may be used as alternative to more invasive surgical modalities.



[0694] **Figure 1.** National trends of diagnostic and therapeutic modalities in LGIH patients.

Table 1. Trends of Imaging studies and procedures in Lower GI hemorrhage admissions

	2016	2017	2018	2019	p-value
Upper GI endoscopy	32.85%	32.58%	32.98%	33.18%	0.25
CT angiography	0.04%	0.06%	0.05%	0.03%	0.17
Nuclear bleeding scan	0.04%	0.04%	0.03%	0.03%	0.36
Colonoscopy	27.83%	27.17%	27.29%	27.26%	0.16
Arterial embolization	2%	2.4%	3%	3.1%	**<0.001**
Laparoscopic surgery	1.19%	1.22%	1.22%	1.31%	**0.02**
Open surgery	3.84%	4.36%	4.47%	4.5%	**<0.001**

S695

Factors Affecting Likelihood of Peptic Ulcer Disease as the Etiology of Suspected Upper Gastrointestinal Bleeding

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Introduction: Patients presenting with suspected upper gastrointestinal bleeding (UGIB) have a broad differential diagnosis. Any process which affects mucosal integrity must be considered when developing a management plan. When treating UGIB a patient's medical history may provide clues that prioritize consideration of certain diagnoses. This study aims to assess components of the medical history that affect the likelihood of finding a peptic ulcer during endoscopic evaluation.
Methods: An IRB-approved retrospective study was performed to evaluate all adult patients who underwent endoscopy for suspected UGIB within five days of presentation, at two affiliated academic hospitals, between 2018 and 2022. Patients were excluded if they had prior endoscopy within 90 days of presentation. Demographic, procedural, and clinical data were obtained via electronic record. Descriptive statistics included t-tests and Chi-square tests. Multivariate analysis was conducted using logistic regression. (Table)
Results: A total of 1392 charts were reviewed and 874 patients were included in the analysis. Average age was 64 years, and 525 (60%) were male. The most common symptoms were melena (68%), abdominal pain (32%) and hematemesis (28%). Peptic ulcer disease (PUD) was diagnosed in 397 patients (45%), with 97 patients (11%) classified as high-risk Forrest class 1a/1b/2a/2b lesions where endoscopic intervention is indicated. Another 300 patients (34%) had low risk PUD with Forrest class 2c/3 lesions, and 477 patients (55%) had no PUD. PPI-naïve patients were found to have PUD in 47% of endoscopies, compared to 36% in active PPI users. Multivariate analysis revealed PPI users were 37% less likely to have any ulcer (p< 0.0001). The risk of finding an ulcer increased by 2.0% for every year of age (p< 0.0001). High risk ulcers were more likely to be seen in males (OR 1.73, 95% CI 1.05-2.82), and a history of hepatic disease decreased the likelihood of finding these lesions (OR 0.56, 95% CI 0.37-0.85).

Conclusion: Active outpatient PPI use leads to a significant decrease in the likelihood of finding PUD in patients with suspected UGIB. This result underscores the importance of considering other etiologies of bleeding in order to prevent a missed diagnosis and delay in care. The "protective" effect of hepatic disease likely stems from liver-related sources of UGIB present in this population. Even when PUD is suspected in these patients, the data suggest timely empiric treatment with antibiotics and vasoactive agents is warranted.

Table 1. Univariate & Multivariate Analysis of Factors Associated with Upper Gastrointestinal Bleed Presentations

	Any Ulcer	High Risk Ulcer (Forrest 1a/1b/2a/2b)	Low Risk Ulcer (Forrest 2c/3)	No Ulcer
Subjects (N=874)				
PPI Na¨ve (N=732)	346 (47%)	84 (11%)	262 (36%)	386 (53%)
PPI Use (N=142)	51 (36%)	13 (9%)	38 (27%)	91 (64%)
Active PPI Use				
OR	0.63	0.64	0.65	N/A
(95% CI)	(0.43-0.93)	(0.33-1.23)	(0.43-0.99)	
Age				
OR	1.02	1.04	1.01	N/A
(95% CI)	(1.01-1.03)	(1.02-1.05)	(1.01-1.02)	
Male Gender				
OR	1.29	1.73	1.21	N/A
(95% CI)	(0.97-1.72)	(1.05-2.82)	(0.88-1.64)	
Hepatic Disease History				
OR	0.56	0.86	0.46	N/A
(95% CI)	(0.37-0.85)	(0.46-1.60)	(0.28-0.73)	

S696

Retrospective Review of Gastrointestinal Bleeding in COVID-19 Patients Admitted to the Intensive Care Unit

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Introduction: The coronavirus disease 2019 (COVID-19) has been observed to affect the gastrointestinal (GI) system with symptoms such as nausea, vomiting, diarrhea, anorexia, and abdominal pain. There is currently limited literature regarding characteristics of gastrointestinal bleeds (GIB) in patients with COVID-19 admitted to the intensive care unit (ICU). We aimed to study clinical characteristics of GIB in COVID-19 patients admitted to the ICU.
Methods: We retrospectively studied COVID-19 patients admitted to the ICU at an academic tertiary care center between January 2020 and September 2020. Among these patients we identified those that had a diagnosis of GIB at time of admission or during hospitalization. All patients ≥ 18 years with overt GIB (melena, hematochezia, hematemesis) and acute anemia were included in this study. Baseline demographics, comorbidities, pharmacological therapies, types and characteristics of GIB, interventions and outcomes were collected. Variables were compared using chi-square and Fisher exact tests and logistic regressions.
Results: A total of 407 COVID-19 patients were admitted to the ICU during the study period. Of these, 100 patients had GIB. Mean age 64 years, 70% male, 48% Hispanic. 16 were cirrhotics. 74% were on anticoagulation. Upper GIB occurred in 76% of patients with most common cause being due to duodenal or gastric ulcer (46.7%). 52% of these were duodenal ulcers. Most common ulcer type was Forrest Classification III. Mean ulcer size was 15.39 ± 8.56 mm. Hemoclip with epinephrine injection was the most common intervention. Diverticular disease was the most common cause of lower GIB (42.2%). Mean hemoglobin was 8.13 g/dl and 49% of patients required blood transfusion. Overall mortality was 41%.
Conclusion: This study highlights clinical characteristics of GIB in ICU patients with COVID-19. The majority had an upper GIB, mostly commonly from duodenal ulcers. Anticoagulation use was a major risk factor for GIB and almost half of patients required blood transfusion. We speculate that the utilization of higher doses of anticoagulation related to increased risk of coagulopathy and thrombotic events as well as systemic inflammation place COVID-19 patients at higher risk for GIB. It is important for clinicians to have a heightened awareness of the possible propensity of COVID-19 patients to have GIB and to utilize clinical judgment for individualized management. Further studies on GIB in COVID-19 patients admitted to ICU are required. (Table)

Table 1. Clinical Characteristics of GIB in COVID-19 Patients in the ICU

	(n=100)
Age (mean, years)	64
Gender	
Male	70% (70)
Female	30% (30)
Ethnicity	
Hispanic	48% (48)
Non-Hispanic	52% (52)
Comorbidities (mean)	
Cirrhotic	16% (16)
Non-cirrhotic	84% (84)
Anticoagulation	
Use of Anticoagulation	74% (74)
No Anticoagulation	26% (26)
Type of GI Bleed	
Upper GIB	76% (76)
Lower GIB	24% (24)
Overall Mortality	41% (41)

S697

Characteristics and Outcomes of Geriatrics Patients Admitted for Upper Gastrointestinal Bleeding: A Population-Based Age-Stratified Retrospective Study

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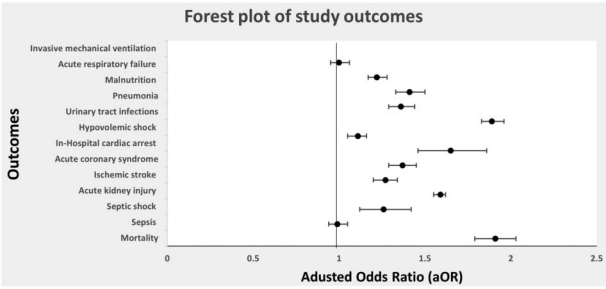
Introduction: Advanced age is a well-known risk factor for mortality in Upper Gastrointestinal Bleeding (UGIB). However, the characteristics and outcomes of elderly patients hospitalized for UGIB remains understudied.
Methods: Using ICD-10 codes, the National Inpatient Sample database of the years 2016 to 2019 was searched for to geriatric (≥ 65 years old) and non-geriatric (18-65 years old) patients who were admitted with a primary diagnosis of UGIB. Multivariate logistic regression analysis was performed to determine the risk of mortality and in-hospital complications in geriatric patient admitted for UGIB compared to their younger counterparts. Baseline patients and facilities characteristics were incorporated into the analysis. Data was considered statistically significant if p-value was < 0.05.
Results: Among 1,656,594 adults' patients who were hospitalized in US with a primary diagnosis of UGIB from 2016 - 2019, 1,022,295 (61.7%) were ≥ 65 years old. Age-stratified patients baseline characteristics are listed in Table. Geriatric patients have a 1.7-fold increase in risk of UGIB (OR 1.74, p< 0.001) with 1.9-fold increase in risk of mortality (OR 1.91, p< 0.001). In term of in-hospital outcomes (Figure), Geriatric patients had a higher risk of septic shock (OR 1.26, p< 0.001), acute kidney injury (OR 1.59, p< 0.001), acute coronary syndrome (OR 1.37, p< 0.001), in-hospital cardiac arrest (OR 1.65, p< 0.001), hypovolemic shock (OR 1.11, p< 0.001), UTIs (OR 1.89, p< 0.001), pneumonia (OR 1.36, p< 0.001), malnutrition (OR 1.41, p< 0.001) and acute respiratory failure (OR 1.22, p< 0.001) when comparted to non-geriatric patients. Interestingly, geriatric/UGIB patients had no significant difference in length of stay (Coefficient 0.28 days, p< 0.001) and cost of care (Coefficient -750$, p< 0.001) when compared to younger subjects.
Conclusion: Geriatric population suffering UGIB have higher rates of mortality, septic shock, acute kidney injury, acute coronary syndrome, in-hospital cardiac arrest, hypovolemic shock, UTIs, pneumonia and acute respiratory failure with similar healthcare resources utilization to younger subjects. These results are likely related to the higher comorbidities and the benefits/risk balance of undergoing invasive therapeutic measures in this friable age group. This necessitates proper risk stratification, treatment protocols and early identification of goals of care for geriatric patients admitted for UGIB.



[0697] **Figure 1.** Forest plot of outcomes of geriatric patients hospitalized for UGIB compared to non-geriatric patients.

Table 1. Baseline characteristics and comorbidities of study sample stratified according to patients age group (UGIB=Upper Gastrointestinal Bleeding)

Variable	Overall UGIB %, No.	NON-GERIATRICS %, No.	GERIATRICS %, No.	P value
	100.0 (1,656,594)	38.2% (634299)	61.7 (1,022,295)	
Patient's characteristics				
Age, mean years	67.6	51.0	77.9 (796368)	< 0.001
Female	46.7 (773629)	38.8 (246108)	51.6 (527504)	< 0.001
Racial distribution				
White	69.4 (1149676)	60.1 (381214)	75.1 (767744)	
Black	14.7 (243519)	19.1 (121151)	12.0 (122675)	
Hispanic	9.47 (156879)	13.2 (83727)	7.14 (72992)	
Others	2.40 (39758)	2.97 (18839)	2.05 (20957)	
Insurance type				< 0.001
Medicaid	66.3 (1098322)	24.2 (153500)	91.6 (936422)	
Medicare	12.1 (200448)	29.9 (189655)	1.43 (14619)	
Private	17.2 (284934)	35.2 (223273)	6.39 (65325)	
Uninsured	4.27 (70737)	10.5 (66601)	0.52 (5316)	
Charlson comorbidity index score				< 0.001
1	21.9 (362794)	26.9 (170626)	18.9 (193214)	
2	17.3 (286591)	15.3 (97048)	18.5 (189125)	
≥3	49.0 (811731)	41.1 (260697)	53.9 (551017)	
Median annual income, us$				< 0.001
1–43,999	31.1 (515201)	35.3 (223908)	28.5 (291354)	
44,000–55,999	26.5 (438997)	26.3 (166821)	26.6 (271930)	
56,000–73,999	23.5 (389300)	22.2 (140814)	24.4 (249440)	
≥74,000	18.7 (309783)	15.9 (100854)	20.4 (208548)	
Hospital characteristics				
Hospital region				< 0.001
Northeast	18.0 (298187)	15.7 (99585)	19.5 (199348)	
Midwest	22.1 (366107)	20.5 (130031)	23.0 (235128)	
South	39.8 (659324)	41.3 (261965)	38.8 (396650)	

Table 1. (*continued*)

Variable	Overall UGIB %, No.	NON-GERIATRICS %, No.	GERIATRICS %, No.	P value
West	20.0 (331319)	22.3 (141449)	18.5 (189125)	
Hospital bed size				< 0.001
Small	20.3 (336289)	19.2 (121785)	20.9 (213660)	
Medium	30.7 (508574)	30.2 (191558)	31.0 (316911)	
Large	48.9 (810074)	50.5 (320321)	47.9 (489679)	
Hospital location				
Rural location	9.10 (150750)	7.53 (47763)	10.1 (103252)	< 0.001
Urban location	23.9 (395926)	22.8 (144620)	24.7 (252507)	
Teaching hospital	66.8 (1106605)	69.6 (441472)	65.1 (665514)	
Comorbidities				
Hypertension	39.2 (649385)	35.8 (227079)	41.3 (422208)	< 0.001
Hyperlipidemia	40.1 (664294)	23.5 (149060)	50.4 (515237)	< 0.001
Smoking history	40.4 (669264)	45.9 (291143)	37.0 (378249)	< 0.001
Diabetes mellitus	32.1 (531767)	25.9 (164283)	35.9 (367004)	< 0.001
Congestive heart failure	21.8 (361137)	10.7 (67870)	28.7 (293399)	< 0.001
Atrial fibrillation	17.5 (289904)	6.12 (38819)	24.6 (251485)	< 0.001
Atrial flutter	1.43 (23689)	0.68 (4313)	1.91 (19526)	< 0.001
Coronary artery disease	29.8 (493665)	14.9 (94511)	39.0 (398695)	< 0.001
Carotid artery disease	1.10 (18223)	0.36 (2283)	1.57 (16050)	< 0.001
Peripheral vascular disease	4.80 (79517)	2.16 (13701)	6.44 (65836)	< 0.001
Chronic obstructive lung disease	18.5 (306470)	12.4 (78653)	22.5 (230016)	< 0.001
Chronic kidney disease	26.2 (434028)	15.6 (98951)	32.9 (336335)	< 0.001
Obesity	12.6 (208731)	14.9 (94511)	11.2 (114497)	< 0.001
Chronic liver disease	15.8 (261742)	27.0 (171261)	8.86 (90575)	< 0.001
Peptic ulcer disease	12.6 (208731)	13.4 (84996)	12.1 (123698)	< 0.001
Hiatal hernia	21.5 (356168)	17.7 (112271)	24.0 (245351)	< 0.001
Portal hypertension	6.58 (109004)	11.9 (75482)	3.25 (33225)	< 0.001
Gastroesophageal reflux disease	27.9 (462190)	26.7 (169358)	28.7 (293399)	
Alcohol use	13.1 (217014)	26.8 (169992)	4.75 (48559)	< 0.001
Esophageal varices	4.81 (79682)	8.58 (54423)	2.48 (25353)	< 0.001

S698

Bleeding Complications From Fecal Management Systems in the COVID Era: A Single Center Experience

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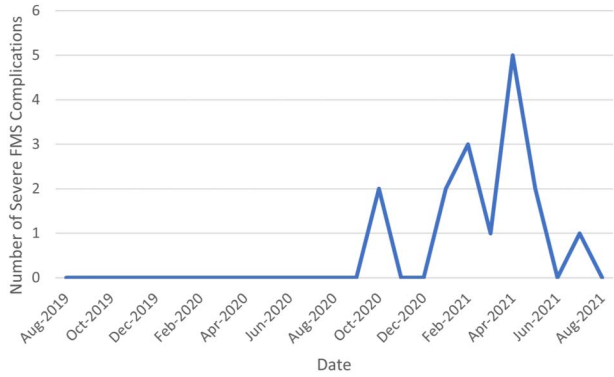
Introduction: Fecal Management Systems (FMS) have become common practice in hospitalized patients with severe diarrhea, or pressure wounds. These devices allow diversion of stool away from the body in an enclosed system. Contraindications to FMS placement include hemorrhoids, anal strictures, rectal mucosal impairment and device use for greater than 29 days. Although FMS are generally safe and effective, severe rectal bleeding has been reported in a small number of studies and case reports though characteristics not well-defined. The goal of this study was to investigate patient characteristics with FMS use and subsequent development of severe bleeding complications.
Methods: We reviewed endoscopy reports for rectal ulcerations and identified 16 patients who developed severe rectal bleeding from FMS at a large medical center from August 1, 2019 to August 1, 2021. Severe rectal bleeding was defined as requirement of blood transfusion, endoscopy or embolization. Demographics, medications, and hospitalization characteristics were extracted from the medical record. Mean, standard deviation, and percentages were calculated for variables of interest.
Results: Patients who bled with FMS had prolonged hospitalizations (mean 67.4 days), and 50% (8/16) died during hospitalization (Table). 43.8% (7/16) had COVID-19 infection, and 75% (12/16) were cared for in intensive care units. 18.8% (3/16) were on antiplatelets, and 50% were on anticoagulation. 93.8% (15/16) of patients who bled with FMS required blood transfusion, receiving 6.1±6.3 units of blood during their hospital admission. 81.3% (13/16) required endoscopy, 12.5% (2/16) required second endoscopy for hemostasis, and 6.3% (1/16) required embolization by Interventional Radiology. Of note, 18.8% (3/16) patients had hemorrhoids, 18.8% (3/16) had FMS for longer than 29 days, and only 37.5% (6/16) had an order for a rectal tube placed. No severe bleeding complications occurred in the 10 months prior to COVID-19 pandemic. (Figure)
Conclusion: FMS has clinical utility but carries risks of severe bleeding complications. It remains unclear how COVID-19 impacted rates of these complications as baseline utilization could not be assessed in our center. Careful attention to hemorrhoids, FMS placement > 29 days, and other relative contraindications like coagulopathy is important to improve patient safety. Interventions should be developed to ensure safe, appropriate FMS placement and timely removal of FMS to avoid adverse events.



[0698] **Figure 1.** Total number of fecal management system (FMS) severe bleeding complications from August 1, 2019-August 1, 2021.

Table 1. Characteristics of patients undergoing sigmoidoscopy or colonoscopy for bleeding from rectal tubes (n =16)

Variable	N (%) or mean (SD)
Length of hospitalization (days)	67.4 (30.6)
Death during hospitalization	8 (50.0)
Hospitalization in intensive care unit (ICU)	13 (81.3)
Age (years)	63.4 (14.9)
Male sex	13 (81.3)
Race White or Caucasian Black or African-American Asian	 8 (50.0) 6 (37.5) 2 (12.5)
Body mass index	26.9 (6.7)
History of hemorrhoids	3 (18.8)
Immobility	12 (75.0)
Mechanical ventilation	11 (68.8)
Aspirin use	10 (62.5)
Antiplatelet use	3 (18.8)
Anticoagulant use	8 (50.0)
NSAID use	2 (12.5)
Bowel regimen use	12 (75.0)
Vasopressor use	9 (56.3)
COVID-19 diagnosis	7 (43.8)
Rectal tube order placement	6 (37.5)
Duration of rectal tube use (days)	18.5 (14.5)
Rectal tube placement >29 days	3 (18.8)
Receipt of blood transfusion	15 (93.8)
Number of blood transfusions	6.1 (6.3)

S699

Early Transjugular Intrahepatic Portosystemic Shunt (TIPS) Procedures in Acute Variceal Bleeding Hospitalizations (AVBH), NIS 2017-2019

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Introduction: Studies have demonstrated that "preemptive" early TIPS (< 72 hours of admission) placement during AVBH is associated with significantly lower treatment failure and inpatient and 1-year mortality rates in high-risk patients. We decided to analyze U.S. hospitalizations and compare outcomes by TIPS procedure timing in AVBH using the latest available largest national database.
Methods: Nationwide Inpatient Sample (NIS) was analyzed for adult hospitalizations with ICD-10 Diagnosis (I85.01) and procedure codes (06183J4). We divided the procedure timing category into early (< 24 hours) and delayed (>24 hours). Mortality, length of stay (LOS), and mean charges (MC) were used as outcomes and compared between the two groups.
Results: A total of 640 TIPS procedures were extracted; 300 of which were performed in < 72hrs of AVBH admission and 340 >72hrs. Sociodemographic data is presented in (Figure). There was significant male-to-female predominance in both procedure groups (73% vs. 27% in the early and 60% vs. 40% in the delayed group); Notably, a higher proportion of females received delayed TIPS. Preemptive TIPS was more likely to be placed in the younger age groups (30-49) when compared to older age groups (50+) who were more likely to undergo delayed TIPS. In terms of race, White patients received preemptive TIPS versus delayed TIPS at a fairly equal frequency (70%), whereas Black (3.3%vs 4.7%) and Hispanic (16.7% vs. 20.3%) patients had slightly higher frequency of delayed TIPS placement. Asian/Pacific-Islander and Native American/Other patients demonstrated a tendency to have early TIPS placement. Inpatient mortality was 13.3% (95% CI: 5.2%-21.5%) in early and 10.3% (95% CI: 4.1%-16.5%) in the delayed group. MC were $187,733 (95% CI: $162,900- $212,566) vs. $208,428 (95% CI: $166,329-$250,527), and mean LOS was 7.6 days (95% CI 6.1-9.1) vs. 11.2 days (95% CI 9.3-13.2) for early and the delayed groups, respectively.
Conclusion: In AVBH early (< 72hrs) TIPS placement reduces treatment failure, inpatient and 1-year mortality. Our analysis demonstrates that early and delayed TIPS are performed at equal frequency. Gender, age and racial disparities were demonstrated in choosing the timing of TIPS placement. Mortality was comparable between the groups. Studies with larger sample size would provide insight in magnitude of these results and guidance for management.

Table1. Sociodemographic Analysis of Early and Delayed TIPS Procedures in Acute Variceal Bleeding, NIS 2016-2019							
		TIPS <72hr %	95% CI		TIPS >72hrs%	95% CI	
TIPS	Total	100.0	100.0	100.0	100.0	100.0	100.0
Age	30-39	8.3	2.5	14.2	.	.	.
	40-49	11.7	3.9	19.4	8.8	3.1	14.5
	50-59	35.0	23.4	46.6	36.8	26.9	46.6
	60-69	31.7	20.9	42.5	35.3	25.7	44.9
	70-	13.3	5.1	21.6	19.1	10.5	27.8
Gender	Male	73.3	63.2	83.5	60.3	50.6	70.0
	Female	26.7	16.5	36.8	39.7	30.0	49.4
Race	White	70.0	59.5	80.5	70.3	61.1	79.5
	Black	3.3	0.0	8.0	4.7	0.0	9.9
	Hispanic	16.7	8.4	24.9	20.3	13.5	27.1
	Asian or Pacific Islander	5.0	0.0	10.5	1.6	0.0	4.7
	Native American /Others	5.0	1.7	8.3	3.1	0.0	7.4
Primary payer	Public	71.7	60.9	82.4	73.1	64.3	82.0
	Private/HMO	26.7	15.9	37.4	23.9	15.2	32.5

[0699] **Figure 1.** Table, Sociodemographic Analysis of Early and Delayed TIPS Procedures in Acute Variceal Bleeding, NIS 2016-2019.

S700

Incidence of Major Gastrointestinal Bleeding for Early vs Late Hemoglobin Monitoring in Veterans Taking Apixaban

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Introduction: Gastrointestinal bleeding is a major cause of hospital-associated mortality and financial burden on the health care system. Identifying gastrointestinal bleeding and preventing hospitalization are important goals. Hemoglobin (Hgb) levels are used to screen for anemia and bleeding in patients on anticoagulation therapy. Studies of warfarin did not find prevention of gastrointestinal bleeding with Hgb monitoring. Apixaban therapy does not require monitoring of INR as frequently as warfarin. We compared the incidence of major gastrointestinal bleeding between patients who had early Hgb monitoring (≤90 days) versus late Hgb monitoring (>90 days) after initiation of apixaban therapy.
Methods: We retrospectively identified veterans at Dayton VAMC who were started on apixaban between 2013 and 2020. Demographics, HASBLED Score at apixaban initiation, duration of anticoagulation use, and days between apixaban initiation and subsequent Hgb check were obtained. Outcome was incidence of major gastrointestinal bleeding.
Results: In total, 1840 veterans initiated on apixaban had a subsequent screening Hgb level. Most patients 1376 (75%) had Hgb screening within 90 days while 464 (25%) had Hgb screening after more than 90 days. Early and late Hgb monitoring groups did not differ on age, sex, and race. The mean HASBLED Score was 2.27±1.08 and 2.13±1.02 in early versus late groups (p=0.022). The mean duration of apixaban use in months was 21.3±16.1 in the early group and 31.0±20.1 in late group (p< 0.001). There were 43 major gastrointestinal bleeds (2.3%). The incidence of major gastrointestinal bleeding was greater in the early group than in the late group (2.9% vs. 0.6%, p=0.005) (Table).
Conclusion: We found more major gastrointestinal bleeding for early Hgb monitoring. Demographics did not differ and the higher mean HASBLED Score for early monitoring was not clinically meaningful. The 10-month longer duration of apixaban use in the late monitoring group could imply that earlier monitoring may lead to discontinuation of anticoagulation without prevention of major gastrointestinal bleeding. This study was limited by its retrospective design and predominantly male patient population, but the sample size was large. Prospective studies would better assess the utility of Hgb monitoring and whether other measures in combination can prevent hospitalization for gastrointestinal bleeding. Further, the value of early and frequent Hgb monitoring in relation to discontinuation of anticoagulation should be evaluated.

Table 1. *Mann-Whitney test **chi-squared test

Characteristic	Early Monitoring (≤90 days) N=1376	Late Monitoring (>90 days) N=464	p
Age – years (mean ± standard deviation)	72.8±10.0	73.6±10.8	0.10*
Sex (number and percent)	1345 (97.7)	454 (97.8)	0.90**
Male	31 (2.3)	10 (32.2)	
Female			
Race (number and percent)	1212 (90.7)	425 (93.4)	0.08**
Caucasian	124 (9.3)	30 (6.6)	
African American			
HASBLED Score (mean ± standard deviation)	2.27±1.08	2.13±1.02	0.022*
Duration of apixaban - months (mean ± standard deviation)	21.3±16.1	31.0±20.1	< 0.001*
Incidence of major GI bleed (number and percent)	40 (2.9%)	3 (0.6%)	0.005**
Comparisons between early and late hemoglobin monitoring groups.			

S701

Outcomes of Patients With History of Stroke, Pulmonary Embolism, Deep Vein Thrombosis, Atrial Fibrillation, and Myocardial Infarction Who Present With a Diverticular Bleed

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Introduction: 3-15% of individuals with diverticular disease will have acute bleeding. One well documented risk factor is the use of anticoagulation medication. Most patients who have a history of vascular diseases such as stroke, pulmonary embolism (PE), deep vein thrombosis (DVT), atrial fibrillation/flutter, and myocardial infarction (MI) are on prolonged courses of anticoagulation. However, the outcome of this population presenting with diverticular bleeding remains poorly understood. Our research aims to look at this population's mortality, length of stay (LOS), and the rate of therapeutic colonoscopy when presenting with diverticular bleeding.

Methods: The Nationwide Inpatient Sample (NIS) 2001-2013 database was queried for patients with a primary diagnosis of diverticulitis and diverticulosis with hemorrhage using International Classification of Diseases, Ninth Revision (ICD-9) codes. Patients with a history of stroke, DVT, PE, atrial fibrillation/flutter, and MI were identified using ICD-9 codes. A logistic regression analysis with data adjusted for demographics was performed on the comorbidities, with a< 0.005.
Results: Patients with a history of MI had the highest odds ratio (OR) of death at 8.962, while those with stroke had the lowest OR at 2.903. Patients with a history of DVT or PE had the highest OR of 4.873 for LOS greater than 3 days, while those with atrial fibrillation/flutter had the lowest OR of 1.634. Finally, stroke, DVT/PE, atrial fibrillation/flutter, and myocardial infarction all had a lower OR of undergoing colonoscopy (Figure).
Conclusion: Having a vascular-related comorbidity increased the average LOS and mortality when presenting with diverticular bleeding. Additionally, these comorbidities also decrease the likelihood of undergoing colonoscopy during a diverticular bleeding event. This may be due to the increased volume and prolonged time of hemorrhage secondary to anticoagulation use, leading to the need for interventional radiology embolization. Future studies should investigate diverticular bleeding outcomes of this population based on different anticoagulation therapy.

Variable	P-Value	Odds Ratio (95% CI)
Death		
No history	Reference	
Stroke	< 0.001	2.903 (2.649 - 3.180)
Deep Vein Thrombosis/Pulmonary Embolism	< 0.001	4.461 (4.071 - 4.889)
Atrial Fibrillation/Flutter	< 0.001	1.789 (1.721 - 1.860)
Myocardial Infarction	0.000*	8.962 (8.492 - 9.457)
Length of stay > 3 Days		
No history	Reference	
Stroke	< 0.001	1.709 (1.643 - 1.777)
Deep Vein Thrombosis/Pulmonary Embolism	0.000*	5.174 (4.873 - 5.493)
Atrial Fibrillation/Flutter	0.000*	1.652 (1.634 - 1.671)
Myocardial Infarction	0.000*	4.861 (4.655 - 5.076)
Colonoscopy		
No history	Reference	
Stroke	< 0.001	0.919 (0.886 - 0.954)
Deep Vein Thrombosis/Pulmonary Embolism	0.002	0.935 (0.896 - 0.976)
Atrial Fibrillation/Flutter	0.336	1.005 (0.995 - 1.016)
Myocardial Infarction	< 0.001	0.799 (0.774 - 0.825)
*Significance level p < 0.001		

[0701] **Figure 1.** Outcomes in patients with stroke, pulmonary embolism, deep vein thrombosis, atrial fibrillation/flutter, and myocardial infarction who present with diverticular bleed.

S702

Effects of Gastrointestinal Comorbidities on Mortality in Patients Admitted for Systemic Lupus Erythematosus

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Introduction: Systemic Lupus Erythematosus (SLE) is a chronic autoimmune inflammatory disease with multi-organ involvement. Gastrointestinal manifestations typically arise as a result of adverse reactions, therapeutic agents or infections. However, SLE gastrointestinal involvement is important to identify because undertreatment can lead to life threatening complications such as lupus mesenteric vasculitis, protein losing enteropathy, and acute pancreatitis. Our project aims to look at the effects of gastrointestinal comorbidities on the mortality of patients admitted for SLE.
Methods: A retrospective analysis of the largest inpatient database, the National Inpatient Sample, was performed from 2001-2013. Primary diagnosis of SLE and comorbidities including gastrointestinal bleeding (GIB), dysphagia, gastroesophageal reflux disease (GERD), Celiac disease, Crohn's disease, Ulcerative colitis, serositis, pancreatitis, malabsorption was extracted using International Classification of Diseases, Ninth Revision (ICD-9) codes. A propensity-matched multivariable logistic regression analysis was performed to analyze the correlation of patients against their healthy counterparts and the effect on mortality. Propensity matching was performed to adjust for baseline patient and hospital demographics. All significance levels of p< 0.01.
Results: After adjusting for age, race, median income, insurance status, hospital region, and Charlson Comorbidity Severity, it was found that GIB was significantly associated with mortality. Patients with GIB admitted for SLE were 3.85 times more likely to die compared to those without GIB. GERD, dysphagia, Celiac disease, Crohn's disease, Ulcerative colitis, serositis, pancreatitis, and malabsorption were not significantly associated with mortality in SLE patients. (Figure)
Conclusion: SLE patients who present with GIB are more likely to die compared to those without SLE. This may be due to SLE patients having prolonged bleeding times. Additionally, many SLE patients have renal involvement and chronic kidney disease which may further exacerbate coagulation and hemostasis problems. SLE patients are also at risk for lupus mesenteric vasculitis, a potential life threatening cause for bleeding. Accurate diagnosis and early treatment of GIB in SLE patients is necessary to reduce mortality risk. Future studies should investigate factors that increase GIB risk in SLE patients.

Variable	P-Value	Adjusted Odds Ratio (95% CI)
Gastrointestinal Bleed		
No	Reference	
Yes	.000*	3.85 (1.59-9.35)
Gastroesophageal Reflux Disease		
No	Reference	
Yes	.300	0.76 (0.45-1.29)
Dysphagia		
No	Reference	
Yes	.367	1.48 (0.63-3.50)
Celiac Disease		
No	Reference	
Yes	.999	N/A
Crohn's Disease		
No	Reference	
Yes	.999	N/A
Ulcerative Colitis		
No	Reference	
Yes	.999	N/A
Serositis		
No	Reference	
Yes	.340	3.00 (0.31-28.59)
Pancreatitis		
No	Reference	
Yes	.999	N/A
Malabsorption		
No	Reference	
Yes	.999	N/A

*significance level p<0.001

[0702] **Figure 1.** Predictors of mortality in patient with SLE and concurrent GI diseases.

S703

Relationship of Decrease in Hemoglobin on Initial Monitoring to the Incidence of Major Gastrointestinal Bleeding

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Introduction: Gastrointestinal bleeding is a major cause of hospital-associated mortality and financial burden on the health care system. Identifying and managing major gastrointestinal bleeding and preventing hospitalization are important to reduce health care costs and improve patient care. Hemoglobin (Hgb) is used to monitor anemia and bleeding in patients on anticoagulation therapy. The utility of Hgb monitoring after initiation of apixaban has not been confirmed.
Methods: We retrospectively identified veterans at the Dayton VAMC who were started on apixaban between 2013 and 2020. Demographics, HASBLED Score, Hgb within 3 months of initiation of apixaban, and a subsequent Hgb were recorded. Two groups were formed: decrease in Hgb < 2 gm/dL and ≥2 gm/dL. We compared the two groups on incidence of gastrointestinal bleeding . Also, we evaluated if patients with a ≥2 gm/dL Hgb decrease were referred to gastroenterology.
Results: There were 1397 veterans initiated on apixaban with baseline and subsequent screening Hgb, 1343 (96%) in the < 2 gm/dL group and 54 (4%) in the ≥2 gm/dL group. The two groups did not differ on age, sex, or race. The mean HASBLED Score at initiation of apixaban therapy was 2.24±1.08 and 2.44±1.09 (p=0.19), respectively. There were 41 major gastrointestinal bleeds (2.93%). The incidence of major gastrointestinal bleeding was 2.2% in the < 2 gm/dL group and 20.4% in the ≥2 gm/dL group (p< 0.001). Of patients with a ≥2 gm/dL decrease, 27.8% had a gastroenterology referral placed (Table).
Conclusion: Hemoglobin is frequently used as a screening tool to evaluate patients on anticoagulation therapy for anemia and potential bleeding. There are no current guidelines to assist with decision-making based on degree of hemoglobin decrease. We found an increased incidence of major gastrointestinal bleeding in patients with a ≥2 gm/dL decrease in Hgb from apixaban initiation to follow-up assessment. Given the increased risk for gastrointestinal bleeding in the ≥2gm/dL decrease group, the low percent (28%) of these patients receiving a gastroenterology referral indicates need for improvements to enhance patient care and lower hospitalizations. This study was limited by its retrospective design and predominantly male patient population, but the sample size was large. Future prospective studies should assess if immediate referral to gastroenterology after a notable decrease in hemoglobin results in a lower rate of hospitalization for gastrointestinal hemorrhage and decreased cost.

Table 1. 110 were other races and not included *Mann-Whitney Test **chi-squared test

Comparisons between patients with hemoglobin decrease of &#60αφφ 2 gm/dL vs. decrease of ≥2 gm/dL.			
Characteristic	**Hgb decrease &#60αφφ 2 gm/dL (N=1343)**	**Hgb decrease ≥2 gm/dL (N = 54)**	**p**
Age (mean ± standard deviation)	72.5±10.1	72.8±9.7	0.91*
Sex (no. and percent)	1316 (98.0)	52 (96.3)	0.71**
Male	27 (2.0)	2 (3.7)	
Female			
Race (no. and percent)[1]	1189 (90.7)	49 (92.5)	0.85**
Caucasian	122 (9.3)	4 (7.5)	
African American			
HASBLED Score (mean ± standard deviation)	2.24±1.08	2.44±1.09	0.19*
Incidence of major GI bleed (no. and percent)	30 (2.2%)	11 (20.4%)	< 0.001**
GI referrals if ≥2 gm/dL decrease (no. and percent)		15 (27.8%)	

S704

Epidemiological Disparities in Trends of Gastrointestinal Hemorrhage-Related Hospitalizations and In-Hospital Mortality in Young Females of Reproductive Age: A National Inpatient Perspective

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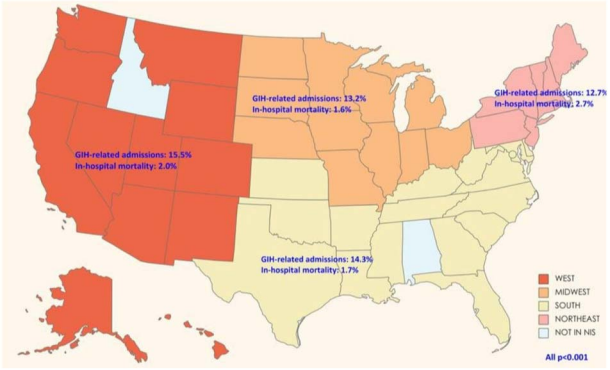
Introduction: Epidemiology and outcomes pertaining to gastrointestinal hemorrhage (GIH) in young females remain under studied. We aimed to study the prevalence, odds and in-hospital mortality of GIH related hospitalizations with associated racial, socioeconomic and regional disparities in young females of reproductive age (YFRA, 18-44 years).
Methods: Data was obtained from National inpatient sample 2019 using relevant ICD-10 codes. We identified YFRA hospitalizations and categorized them into GIH and without GIH. Demographic data, comorbidities, Primary outcomes (prevalence of GIH, in-hospital mortality) were compared between groups stratified by race, socioeconomic status and geographic regions. Secondary outcomeswere length of stay and cost. Multivariate regression analyses were performed adjusting for sociodemographics, hospital characteristics and comorbidities.
Results: Of total 6071529 admissions in YFRA, 48640 (0.8%) had GIH (median age 35, IQR 29-40). Stratified by race, Asian pacific islanders (API, 22.3%) followed by Hispanics (18.9%) had higher rates of GIH ($p< 0.001$). YFRA from Lowest median income quartile (14.5%) demonstrated higher rates of GIH. Geographically, Western region hospitals showed highest (15.5%) rate of GIH admissions followed by Southern (14.3%), midwest (13.2%) and northeast (12.7%) (Figure). Rates of alcohol abuse, drug abuse, depression, diabetes, hypertension, hyperlipidemia were higher in the GIH cohort. When adjusted for confounders, the odds of GIH by race were higher in API vs. white (aOR 1.76;1.45-2.12) ($p< 0.001$) and by region, hospitals from West region demonstrated the highest odds vs. Northeastern region (aOR 1.20; 1.10-1.31)($p< 0.001$). In-hospital mortality in GIH admissions was comparablebetween all regions without statistically significant difference. Median length of stay for GIH hospitalizations was 3 days (IQR 2-6) and total charges were higher compared to non GIH cohort ($37576 vs $20613, $p< 0.001$).
Conclusion: GIH related hospitalizations among YFRA were highest in the West whereas subsequent inhospital mortality was highest in the Northeast region. API demonstrated the highest rates of GIH hospitalizations and in-hospital mortality. GIH admissions in YFRA from two lowermost income quartiles demonstrated the highest rate of GIH hospitalizations and subsequent mortality, respectively. Future studies are warranted to confirm these prevailing sex and regional disparities in GIH among YFRA.



[0704] **Figure 1.** Geographic distribution of GIH related hospitalizations and in-hospital mortality in young females of reproductive age(YARF).

S705

Trends in Cost, Length of Stay, and Mortality in Chronic Kidney Disease Patients on Dialysis Who Present With a Diverticular Bleed

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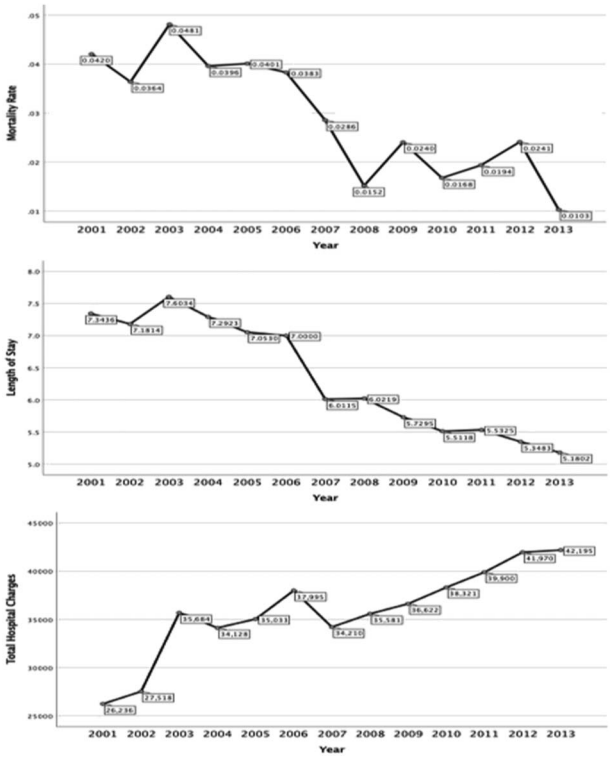
Introduction: The prevalence of symptomatic bleeding in diverticulosis and diverticulitis is about 5-15%. Diverticular disease in chronic kidney disease (CKD) patients has been documented to have higher rates of complications such as perforation, mortality, and bleeding due to iatrogenic causes and/or platelet dysfunction. The healthcare costs, length of hospitalization, and mortality rates remain poorly understood in terms of those on hemodialysis (HD) who present with a diverticular bleed.
Methods: The Nationwide Inpatient Sample 2001-2013 database was queried for a primary diagnosis of diverticulitis and diverticulosis with hemorrhage using International Classification of Diseases, Ninth Revision (ICD-9) codes. CKD was stratified based on whether the patient was on dialysis. A one-way analysis of variance test with linear trend analysis was used to compare the mean length of stay, mean hospitalization cost, and mortality.
Results: The mean mortality rate was significantly higher in those undergoing HD compared to those not on HD. Mortality for HD patients decreased. For hospital charges, those who were on HD had an average hospital cost of $18,835 more than those not on HD. Additionally, hospital charges for patients on HD who present with diverticular bleeding increased. Finally, the average LOS of patients on HD was longer than those not on HD. The average LOS for CKD patients on HD decreased. (Figure)
Conclusion: In the CKD population who present with diverticular bleed, we expect those on HD to have worse due to their immunocompromised state and platelet dysfunction. However, it's reassuring that the overall mortality and length of stay has significantly decreased. This may be due to improved HD technology, advanced interventional techniques such as IR guided embolization, and better management of those on HD. As a consequence, the availability of more resources and increasing cost of medical technology, as well as inflation, may explain the increasing cost in hospital charges.



[0705] **Figure 1.** A) Mortality rate of patients on HD presenting with diverticular bleeding vs. year. B) Length of stay of patients on HD presenting with diverticular bleeding vs. year. C) Total Hospital charges of patients on HD presenting with diverticular bleeding vs. year.

S706

Assessing the Use of the Fecal Occult Blood Tests in a Community Hospital

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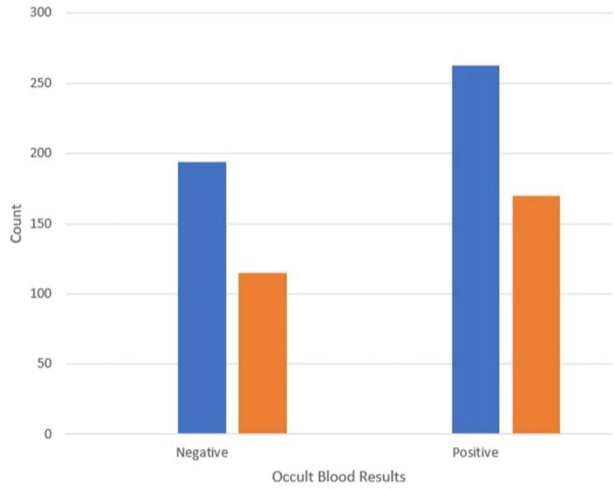
Introduction: Fecal occult blood tests (FOBTs) have been used as a tool for detecting occult blood in stool for colon cancer screening. Increasingly, FOBT has been utilized by clinicians to detect gastrointestinal (GI) bleeding in the hospital setting without evidence supporting its use. Furthermore, a false positive FOBT can lead to excessive patient harm in the form of unnecessary testing, patient anxiety, prolonged hospital stay, and financial hardship. In this study, we looked at the use of FOBTs, relevant specialist consults, and further endoscopic interventions in the inpatient setting.
Methods: Our search criteria included patient demographics, length of stay, admission diagnosis, specialty consulted, FOBT ordering provider, FOBT results, intervention performed, and total blood volume ordered. Patient data was gathered using Epic Workbench. Data were analyzed using SPSS. Frequencies of age, sex, race, and length of stay were calculated. Descriptive statistics were obtained to compare FOBT results with the number of procedures and specialist consults. Pearson chi-square was used in the analysis of statistical significance.
Results: Over one year, a total of 742 patients received a FOBT while inpatient: 411 females and 333 males; predominantly white (97.3%) with a median age of 71. A total of 433 FOBTs were positive, of which 27 resulted in a colonoscopy and 46 in gastroscopy. Consults to specialty services were placed on 222 positive FOBT results and 187 negative FOBT results. Overall, FOBT did have a significant impact on whether an invasive intervention, such as colonoscopy or gastroscopy, was performed ($p < 0.001$). FOBT results were not statistically associated with consults placed ($p < 0.5$). (Figure)
Conclusion: Despite questionable benefits, the use of FOBTs has extended to inpatient and emergency department settings. Reasons for use included anemia, GI bleeds, abdominal pain, melena, and emesis. Two studies looked at the use of FOBTs in the community hospital setting and both found that FOBTs were used for non-evidence-based indications and did not offer any clinical benefit. Data analysis from our study revealed that of the 433 patients with a positive FOBT, only 73 did underwent an intervention. Consequently, the results of a FOBT do not appear to play a large role in deciding further intervention. In order to increase patient benefit and decrease healthcare burden, we plan to further this work by implementing provider education on the uses of FOBT and reporting on the color of stool samples. (Table)



[0706] **Figure 1.** Graphical representation of specialist consults placed compared with positive and negative FOBT results. Blue bars represent number of FOBTs with a consult and orange bars represent number of FOBTs without a consult.

Table 1. Comparison of FOBT with procedures completed

	Colonoscopy	Esophagogastroduodenoscopy	No scope	Total
Occult blood				
Positive	27	46	360	433
Negative	5	7	297	309
Total	32	53	657	742

S707

Comparison of Outcomes Between Upper and Lower GI Bleed Patients: A Post-Hoc Analysis of Retrospective Study

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Introduction: Traditionally, lower gastrointestinal bleed (LGIB) patients tend to have a benign clinical course compared to those with upper gastrointestinal bleed (UGIB) patients leading to the over-utilization of resources in patients with UGIB. However, recent studies have reported similar clinical outcomes such as readmission and mortality rates, thereby challenging this view. Our study aimed to compare clinical outcomes between the two groups.
Methods: This is a post-hoc analysis of a retrospective study on patients admitted with gastrointestinal bleed as their primary diagnosis to higher level of care from March, 2015 - March, 2021. Electronic medical records of patients above 18 years of age were reviewed. The patients were stratified into 2 groups: UGIB and LGIB. The outcomes analyzed included incidence of end organ damage (acute kidney injury and myocardial infarction), treatment modalities (conservative and/or endoscopic intervention), no. of patients requiring intensive care unit (ICU), hospital length of stay (LOS), 30-day mortality, and 90-day readmission rate. Pearson Chi-square and Mann Whitney U were applied to compare groups. p-value greater than 0.05 was considered significant.
Results: Out of 207 eligible patients, 164 (79.2%) had UGIB, 34 (16.4%) LGIB, and remaining 9 (4.4%) had both. The latter were excluded from the analysis. Table illustrates baseline characteristics and outcomes. We did not observe any significant difference in the conservative treatment (transfusion requirement and antibiotics usage), endoscopic interventions, and time to scope between the two groups ($p > 0.05$). Furthermore, there was no significant difference in no. of patients requiring ICU, hospital LOS, 30-day mortality, and 90-day readmission rates (due to UGIB and LGIB).
Conclusion: Similar clinical outcomes were observed between the UGIB and LGIB patients in our study which is in line with the emerging data. Moreover, no difference was noted in the approach of treatment i.e., conservative and/or endoscopic. Our study also highlights that early endoscopic intervention and higher level of care may not be as necessary in all patients with UGIB.

Table 1. Illustrating the comparison of baseline characteristics, medical history, end organ damage (troponin leak and AKI), 30-day mortality, and 90-day readmission rates, between the with upper gastrointestinal bleed and lower gastrointestinal bleed

	Upper GI Bleed	Lower GI Bleed	p-value
	n (%) = 164 (79.2%)	n, (%) = 34 (16.4%)	
Age, mean ± SD (median, IQR)	65.6 (55,77)	64.15 (51, 76.3)	ns
Gender			
Male	98 (47.3%)	25 (12.1%)	
Female	66 (31.9%)	9 (4.3%)	ns
Race			ns
Caucasian	104 (50.2%)	22 (10.6%)	
Black	23 (11.1%)	6 (2.9%)	
Hispanic	13 (6.3%)	2 (1.0%)	
Other including unavailable data	24 (11.6%)	4 (1.9%)	
History of HTN	92 (44.4%)	21 (10.1%)	ns

Table 1. (*continued*)

	Upper GI Bleed	Lower GI Bleed	p-value
	n (%) = 164 (79.2%)	n, (%) = 34 (16.4%)	
History of DM	39 (18.8%)	8 (3.9%)	ns
History of CAD	47 (22.7%)	14 (6.8%)	ns
History of NSTEMI/STEMI	13 (6.3%)	2 (1.0%)	ns
History of CKD	42 (20.3%)	8 (3.9%)	ns
History of Liver disease	35 (16.9%)	7 (3.4%)	ns
History of DVT/PE	16 (7.7%)	2 (1.0%)	ns
History of Smoking	74 (35.7%)	17 (8.2%)	ns
History of Alcohol use	76 (36.7%)	15 (7.2%)	ns
History of Illicit Drug use	7 (3.4%)	2 (1.0%)	ns
Personal history of GI tract cancer	14 (6.8%)	6 (2.9%)	ns
Family history of GI tract cancer	4 (1.9%)	8 (3.9%)	0.000
Use of NSAIDs	27 (16.8%)	3 (9.1%)	ns
Use of anticoagulants	49 (23.9%)	12 (5.9%)	ns
Use of antiplatelets	25 (27.6%)	14 (42.4%)	ns
Troponin leak	14 (6.8%)	3 (1.4%)	ns
AKI	48 (23.2%)	14 (6.8%)	ns
Antibiotics	32 (15.5%)	4 (1.9%)	ns
pRBC transfusion median (IQR)	3 (2,4)	3 (2,4.75)	ns
Endoscopic intervention	81 (39.1%)	13 (6.3)%)	ns
No. of patients requiring ICU	63 (30.4%)	8 (3.9%)	ns
Intubation during hospitalization	15 (7.2%)	0 (0.0%)	ns
Time to scope, mean ± SD (median, IQR)	1.35 ± 1.78 (1.0, 0.75-2.00)	1.72 ± 1.46 (1.0, 1-2)	ns
Alive at 30 days	142 (68.6%)	29 (14%)	ns
90-day readmission due to GI Bleed	39 (18.8%)	7 (3.4%)	ns

NS – None significant; HTN – Hypertension; DM – Diabetes mellitus; CAD – coronary artery disease; HF – Heart Failure; AF – Atrial Fibrillation; CKD – Chronic Kidney Disease; DVT – Deep venous thrombosis; PE – Pulmonary embolism; NSAIDs – Non steroidal anti-inflammatory drugs; PPI – Proton Pump Inhibitors; AKI – Acute Kidney Injury; PRBC – Packed Red Blood Cells; ICU: Intensive Care Unit.

S708

Incidence and Risk Factors of Nonsteroidal Anti-inflammatory Drug (NSAID) Use in Post-Operative Patients After the Oklahoma Senate Bill 1446 Limiting the Prescription of Narcotics for Acute Pain

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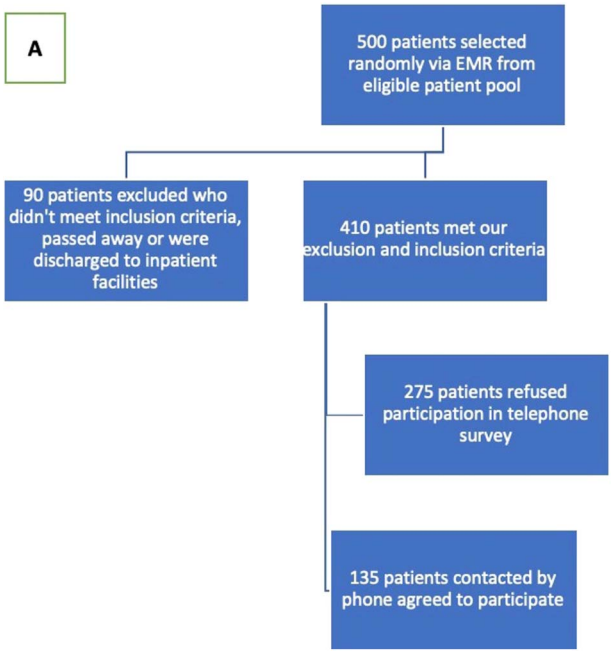
Introduction: Effective postoperative pain control is an essential & humanitarian post-surgical need. Nonsteroidal anti-inflammatory drugs (NSAIDS) and opioids are the most commonly prescribed medication for this purpose. To limit opioid related dependence and side effects, in November 2018, Oklahoma Senate Bill 1446 went into effect, implementing a 7 day restriction for acute pain opioid prescription. GI bleeding is a known notorious side effect of NSAID use. In this study we propose that limiting patient's access to opioid pain medications in the post-operative period can lead to an increased utilization of OTC NSAIDs and contributes to the GI bleeding burden.
Methods: In our retrospective study, 500 patients were randomly selected from a pool of post-surgical patients. Of these, 410 patients met our inclusion criteria and were contacted via a letter explaining the purpose of the study and later via telephone interview. Information was recorded regarding opioid/NSAID prescription, over the counter (OTC) use of pain meds, reason for use, degree of pain control and 30-day refills. Demographic data was collected via the EMR including age, sex, ethnicity, and zip code. Descriptive analysis was used to analyse the results.
Results: The survey response was 32.9%, of which 81.5% were males. Mean age was 53 years and 81% were Caucasians. At discharge, 77% of patients were prescribed a narcotic and 63% non-narcotics (40% NSAIDS). Of these 33.3% (n=45) reported utilizing OTC NSAIDs, within 30 days of their procedure. Ibuprofen was the most commonly used OTC NSAID (91%). (Figure) Interestingly, NSAID use was not significantly different (p 0.14) between patients who were prescribed narcotics (38/45, 84%) and who were not prescribed narcotics (66/90, 73%). No significant differences were observed (p 0.56) in OTC NSAID use between patients who did (15.6%) or did not contact their provider within 30 days of discharge. As shown in the Table, the sub-analysis was not significant when stratified for gender (p 0.81), race (p 0.9), ethnicity (p 0.54) or residential status (p 0.13). An increased tendency for NSAID use was noted for younger patients (p 0.06).
Conclusion: Based on these findings, we conclude that the increased regulations introduced by Bill 1446 for narcotic dosing and duration for acute pain did not impact the utilization of OTC NSAIDs in the post-surgical setting. It remains to be seen if this trend changes in the coming years, and would likely command larger scale studies to better elucidate the results.



[0708] **Figure 1.** A demonstrates a PRISMA flow diagram showing the patient selection process.

Table 1. Comparison of demographics and Narcotic treatment of patients who used and did not use NSAIDs

Variables	NSAID use (n=45)	No NSAID use (n=90)	P value
Age, mean ± SD	51.9 ± 16.4	57.9 ± 18.1	**0.06**
Female, n (%)	21/45 (46.7)	4/90 (4.44)	0.81
White race, n (%)	38/45 (84.4)	71/90 (78.9)	0.9
Non-Hispanic ethnicity, n (%)	44/45 (97.8)	87/90 (96.7)	0.54
Urban resident, n (%)	32/45 (71.1)	52/90 (57.8)	0.13
Narcotic Rx at discharge, n (%)	38/45 (84.4)	66/90 (73.3)	0.14
Attempt to reach provider, n (%)	8/44 (18.2)	12/84 (14.3)	0.56

S709

Proton-Pump Inhibitor Infusion Misuse in the Community Hospital Setting

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Introduction: Proton pump inhibitors (PPIs) are the most potent acid suppressants available. Several studies have shown that in hospitalized patients with acute upper gastrointestinal (GI) bleeding from peptic ulcer disease, high-dose PPI therapy via continuous infusion reduces the rate of high-risk bleeding lesions (active bleeding, visible vessel, adherent clot) on initial endoscopy. While the benefits of PPI infusions have been clearly described for these specific indications, they are often over-prescribed to inpatients. Our study aim was to determine the rate of misuse in a tertiary care community hospital setting.
Methods: A retrospective cohort study was conducted at Lankenau Medical Center, a 370 bed community hospital. The usage of pantoprazole infusion was determined among hospitalized patients between March 1, 2018 and March 1, 2021 through review of the EPIC electronic medical record system. Appropriate candidates for pantoprazole infusion were defined as patients with hematemesis, melena, coffee-ground emesis, or hematochezia with hemodynamic instability. All other indications were categorized as inappropriate. Variables including age, sex, race, serum hemoglobin at the time of PPI infusion initiation, and antiplatelet use were collected. The rate of PPI infusion misuse was determined. Factors which significantly affected utilization of PPI infusion were determined through multivariate analysis.
Results: A total of 348 pre-endoscopic PPI infusions were ordered during the three-year period. Approximately 35% of these prescriptions were ordered without an appropriate indication. The mean age of patients who were prescribed PPI infusions was 68.8 years. 48.6% were on an antiplatelet agent. The only significant variable between patients who were given a PPI infusion for an appropriate versus inappropriate indication was age, where the mean patient age was 68.8 compared to 71.1 years (p=0.04). Patient sex, race, antiplatelet use, and hemoglobin value did not significantly affect PPI infusion use. (Table)
Conclusion: Pre-endoscopic PPI infusion was prescribed inappropriately in 34.8% of patients in a community hospital setting. Misuse of this drug leads to unnecessary healthcare costs and reflects poor understanding among prescribers of its appropriate clinically indicated uses. While PPIs are generally regarded as safe, misuse can increase the risk of adverse side effects. A follow-up study looking at a quality improvement intervention will follow this study.

Table 1. Characteristics and Multivariate Analysis of PPI Infusion Misuse

	Inappropriate PPI Infusion			
	No	Yes	Total	p-value
	n = 227	n = 121	n = 348	
Age (Mean/SD)	67.6 (14.8)	71.1 (15.1)	68.8 (15.0)	0.04
Sex				0.571
Male	131 (57.7%)	66 (54.6%)	197 (56.6%)	

Table 1. (*continued*)

	Inappropriate PPI Infusion			
	No	Yes	Total	p-value
	n = 227	n = 121	n = 348	
Female	96 (42.3%)	55 (45.5%)	151 (43.4%)	
Race				0.705
White	104 (46.0%)	59 (48.8%)	163 (47.0%)	
Black	112 (49.6%)	55 (45.5%)	167 (48.1%)	
Other	10 (4.4%)	7 (5.8%)	17 (4.9%)	
Ethnicity				0.12
Not Hispanic	225 (99.6%)	116 (97.5%)	341 (98.8%)	
Hispanic	1 (0.4%)	3 (2.5%)	4 (1.2%)	
Total Number of Antiplatelets				0.629
0	121 (53.3%)	58 (47.9%)	179 (51.4%)	
1	70 (30.8%)	41 (33.9%)	111 (31.9%)	
2	36 (15.9%)	22 (18.2%)	58 (16.7%)	
Antiplatelet Type (n = 169 Yes Only)				
Aspirin	103 (45.4%)	61 (50.4%)	164 (47.1%)	0.37
Clopidogrel	36 (15.9%)	23 (19.0%)	59 (17.0%)	0.456
Ticagrelor	4 (1.8%)	4 (3.3%)	8 (2.3%)	0.456
Prasugrel	1 (0.4%)	0	1 (0.3%)	1
Last Hemoglobin (Mean/SD, g/dl)	8.9 (2.6)	8.6 (2.9)	8.8 (2.7)	0.344
Missing Hemoglobin	19	8	27	
Transfusion Units (median/IQR)	2 (0-6)	2 (0-4)	2 (0-5)	0.478

S710

Hyperthyroid State Is Associated with Reduced Mortality in Patients Admitted for Nonvariceal Upper Gastrointestinal Bleeding

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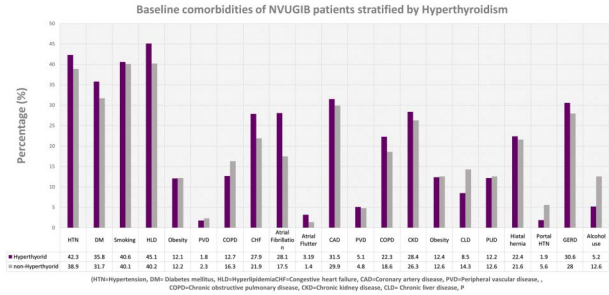
Introduction: Through an uncertain mechanism, previous animal models proved that thyroid hormones act on mucosal lesions and reduce the formation of gastric stress ulcers. In this study, authors aim to investigate the influence of hyperthyroid state on outcomes of patients with non-variceal upper gastrointestinal bleeding (NVUGIB). Up to our knowledge, such association have never been studied in literature before.
Methods: This is a retrospective cohort examining data from the National Inpatient Sample (NIS) Database of the years 2016 to 2019. Using ICD-10 codes, authors identified hyperthyroid and non-hyperthyroid patients who were principally hospitalized for NVUGIB. Univariate and Multivariate logistic regression analysis was performed to determine the risk of mortality and in-hospital complications. Baseline patients and facilities characteristics were incorporated into the analysis. Data was considered statistically significant with p-value < 0.05.
Results: A total of 1,638,754 patients were identified with a principal diagnosis of non-variceal UGIB, among those 7,205 (0.43%) had a history of hyperthyroidism. Study groups baseline comorbidities are illustrated in Figure. After running a multivariate logistic analysis for inpatient mortality, patients with non-variceal UGIB and hyperthyroidism had a 38% reduction in risk of mortality (OR 0.62, 95% CI 0.40 – 0.97, P= 0.039) compared to non-hyperthyroid subjects. In term of secondary outcomes, both groups had no difference in risk of sepsis (OR 0.74, 95% CI 0.50 – 1.09, P= 0.135), hypovolemic shock (OR 1.03, 95% CI 0.74 – 1.43, p=0.853), acute kidney injury (OR 1.06, 95% CI 0.92 – 1.21, p=0.394), acute respiratory failure (OR 0.73, 95% CI 0.54 – 1.00, p=0.050), acute coronary syndrome (OR 1.27, 95% CI 0.95 – 1.71, p=0.097) and In-hospital cardiac arrest (OR 0.62, 95% CI 0.17 – 2.17, p=0.457). Length of stay (aMD 0.33 days, 95% CI -0.09– 0.77, p=0.124) and charges of care (aMD 6146$, 95% CI -852.3– 13145, p=0.085) were not affected by hyperthyroid state as well.
Conclusion: Interestingly, our analysis concludes that hyperthyroid state can influence the mortality of patient with non-variceal UGIB. This beneficial effect is likely related to the modulatory effect of thyroid hormones on the responsiveness of the gastrointestinal mucosa to stress. Further studies are needed to investigate and confirm the clinical impact of thyroid state on the outcomes of patients with gastrointestinal bleeding.



[0710] **Figure 1.** Baseline comorbidities of NVUGIB patients stratified by past history of Hyperthyroidism.

S711

Oversampling in Machine Learning for Patient Risk Stratification for Acute Lower Gastrointestinal Bleeding

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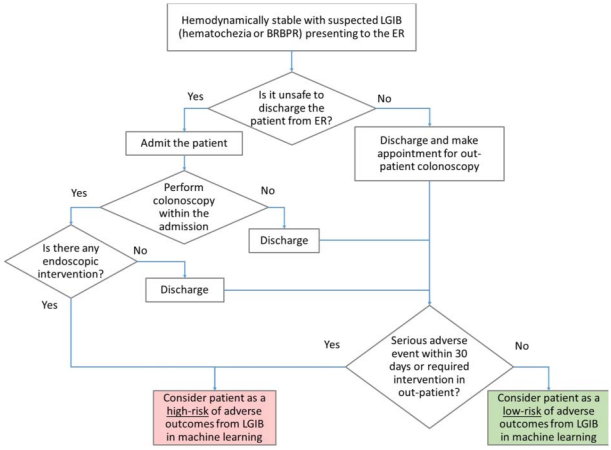
Introduction: Lower gastrointestinal bleeding (LGIB) is a common cause of hospital admissions and can lead to hospital-based interventions that consume a significant amount of medical resources. However, only a minority of cases are high-risk and result in significant morbidity and mortality. We present an oversampling method to help with rebalancing for machine learning modeling for triaging in LGIB when there is significant imbalance between high risk (HR) and low risk (LR) patients.

Methods: From retrospective data, hemodynamically stable patients with suspected LGIB were labeled into HR or LR groups (Figure). Risk factors associated with LGIB (e.g. age, sex, blood pressure, hemoglobin) were included as predictors. The dataset was divided into 80% for training and 20% for testing. Two machine learning models (stepwise logistic regression and decision trees) were applied to the training data to create predictive models. Then, the training and testing performances were evaluated using standard performance metrics (e.g. sensitivity, specificity, and F1).
Results: 1414 records were reviewed. On average, patients were 61 years old and 48.8% were male. The average systolic blood pressure was 138 mmHg and diastolic was 78.0 mmHg with an average pulse of 82.0. The average laboratory values were 13.2 g/dL for hemoglobin (Hb), 16.0 mg/dL for BUN, 0.83 mg/dL for creatinine, 1.1 for INR, and 227.0 × 10e9/L for platelets. Among these patients, 14% were on anticoagulants, 4.3% were on antiplatelet agents, and 14.9% took NSAIDs. There were 69 HR patients and 1345 LR patients. Among the included factors, age, blood pressure, pulse, BUN, Hb, INR, quartile of transfusions, and being on antiplatelet agents were statistically different between the 2 risk groups. During training the decision tree model showed excellent specificity (0.985) and negative predictive value (NPV) (0.9088) among 586 cases. In the testing phase, specificity was 0.982 and NPV was 0.960 among 12 cases. Sensitivity dropped from 0.908 in the training phase to 0.083 in the testing phase; similarly, the F1 dropped from 0.945 to 0.111. The logistic regression model had a sensitivity of 0.691 that dropped to 0.583 and specificity from 0.723 to 0.752; the F1 dropped from 0.709 to 0.163.
Conclusion: Logistic regression did not perform as well as decision trees in training; however, it can generalize better to unseen data. A larger dataset with more HR cases would potentially reduce the overfitting issue and provide a more accurate predictive model.



[0711] **Figure 1.** Algorithm for classifying patients with low-risk or high-risk LGIB BRBPR = Bright red blood per rectum, ER = Emergency room, LGIB = Lower gastrointestinal bleeding.

GI BLEEDING

S2549 Presidential Poster Award

GI Bleeding From an Unusual Cause in an Unusual Place

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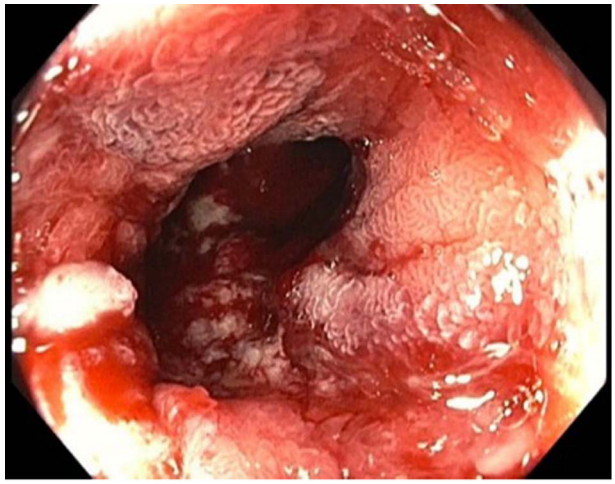
Introduction: Amyloidosis is a rare disease that involves the abnormal deposition of insoluble protein fragments in tissue resulting in impaired functionality and architecture. Deposition is usually systemic with variable involvement of different organs resulting in a wide range of clinical manifestations. Less common is the formation of a solitary mass from amyloid alone – an amyloidoma. Primary amyloidoma is defined as a solitary mass of amyloid protein with no evidence of systemic amyloidosis. Such masses have been described in a variety of locations but amyloidoma's of the duodenum are a rare entity, as evidence by the limited case reports.
Case Description/Methods: A 79-year-old White man with a medical history of low-grade marginal zone lymphoma of the duodenum (currently in remission) presented to the ED for hematemesis. He had no preceding nausea/vomiting, abdominal pain, melena, or hematochezia. He was hemodynamically stable with an initial hemoglobin of 13, which downtrended to 10.7. Other labs were normal. Findings on physical exam were unremarkable. Upper endoscopy revealed a large, circumferential, partially-obstructing mass beginning in the duodenal bulb and extending into the 2nd portion of the duodenum. The mass was very friable with active oozing on contact. The rest of the exam to the proximal jejunum was normal. Biopsies from the duodenal mass came back as extensive mucosal and submucosal amyloid deposition, ulceration/granulation tissue, and fibroinflammatory features without evidence of lymphoma. It stained positive for Congo red. Bone marrow biopsy was done during the admission with no evidence of systemic amyloidosis. His bleeding subsided and he was discharged home with follow up in Amyloidosis clinic for further management.
Discussion: In those with certain forms of amyloidosis, GI tract deposition is common and greatest in the small bowel. Symptoms vary and are based on the location of deposition. A solitary amyloid mass, an amyloidoma, is an uncommon finding. Locally produced proteins rather than circulating forms of the protein tend to be the precursor in localized amyloidosis, which is in contrast with systemic amyloidosis. Amyloidoma involvement of the duodenum is rare, as there are only a few case reports, which makes this case unique. It is also hypothesized that he has recurrence of his localized low-grade lymphoma resulting in amyloid production, which makes this case even more interesting.



[2549] **Figure 1.** Amyloidoma in duodenal bulb extending into the second portion of the duodenum.

GI BLEEDING

S2550 Presidential Poster Award

EUS-Guided Coil Embolization and Absorbable Hemostatic Gelatin Sponge Is a Safe and Efficacious Treatment of Rectal Varices

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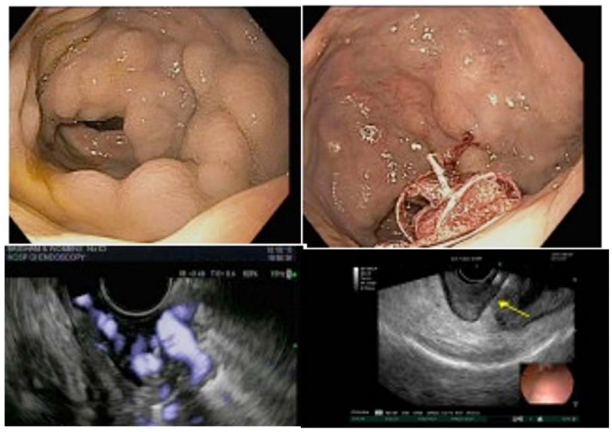
Introduction: Rectal varices are abnormally dilated collateral vessels that may occur from systemic portal hypertension. The endoscopic management of bleeding rectal varix is often challenging; endoscopic band ligation has limited efficacy, and patients are often unsuitable for interventional radiology guided procedures and for surgical ligation. Our group has previously reported positive results of EUS-guided injection of coils and absorbable gelatin sponge (AGS; "Gelfoam") for treatment of bleeding gastric varices. Here we present a case series of endoscopic ultrasound (EUS) guided coil embolization combined with AGS for the management of bleeding rectal varices.
Case Description/Methods: Four cases of bleeding rectal varices were successfully treated with EUS guided coil embolization and Gelfoam between 10/2018 and 3/2022 at a single tertiary center. Patient demographic and procedure characteristics are listed in Table. All 4 cases (100%) presented with active lower GI bleeding, with the rectal varices marked as the most likely etiology. Average age was 67, 3/4 (75%) were female, and mean MELD-Na score was 10. One patient required 3 units of pRBC transfusion prior to lower EUS. Following multidisciplinary discussion with hepatology, interventional radiology, and surgery, it was decided to pursue endoscopic therapy in all 4 cases. All cases underwent EUS-guided puncture of rectal varices (specifically targeting perforator veins) with a 22G FNA needle to serially deploy 0.018" Nester Embolization Coils (Cook Medical, Bloomington, IN) of length ranging from 7-14cm total. Absorbable gelatin sponge (Gelfoam) was then injected as a liquid slurry for hemostatic reinforcement following coil embolization. All cases (100%) achieved technical success with successful coil and AGS injection, along with EUS confirmation of significant and immediate diminution of Doppler flow in the rectal varices. None of the procedures reported procedural-related adverse events. One patient had follow-up EUS at 1 month that demonstrated both endoscopic and sonographic evidence of obliteration of rectal varices. (Figure)
Discussion: EUS guided coil embolization combined with an absorbable hemostatic gelatin sponge appears to be a safe and efficacious treatment option for bleeding rectal varices.



[2550] **Figure 1.** EUS directed coiling and gel foam injection into rectal varices.

Table 1. Demographic and Procedure Characteristics

Case ID	Age (years)	Sex	Etiology of Portal Hypertension	Bleeding Presentation	Charlson Comorbidity Index	Child Pugh Classification	MELD-Na score	Hemoglobin (g/dL)	Platelets (k/uL)	INR	Pre-procedure # Units of pRBC Transfused
1	79	Female	NASH Cirrhosis	Hematochezia	7	A	10	10.7	96	1.2	0
2	59	Female	Oxaliplatin Induced Liver Injury	Hematochezia	8	B	9	7.2	114	1.3	3
3	59	Female	Nodular Regenerative Hyperplasia	Hematochezia	8	A	11	8.4	159	1.1	0
4	71	Male	Alcoholic Cirrhosis	Melena and hematochezia	11	B	12	8	78	1.7	0

Case ID	Maximum Cross Sectional Diameter of Varices (mm	Presence of hemorrhoids	No of coils injected	Total Length of Coil Injected (cm)	Technical Success	Adverse Events	Post procedure blood transfusion
1	3.5	Y	4	28	Y	N	0
2	2.5	Y	1	7	Y	N	0
3	4	Y	2	14	Y	N	0
4	5	Y	2	27	Y	N	0

S2551 Presidential Poster Award

Gone to Guts: A Case of Osteosarcoma With Metastasis to Upper and Lower Gastrointestinal Tract Presenting as Recurring Bleeding

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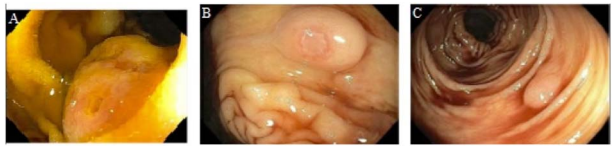
Introduction: Osteosarcomas are the most common bone tumors in children and adolescents. They are notoriously known to metastasize to lungs, however metastasis to gastrointestinal tract is extremely rare and only reported in sparse case reports.[1–5] To our knowledge, we present one of the first cases of osteosarcoma that metastasized to the upper and lower GI tract presenting as recurrent bleeding.

Case Description/Methods: A 43-year-old man with medical history of metastatic osteosarcoma to the lungs and brain, initially diagnosed at the age of 20 years in the femur, presented to the hospital after a syncopal episode. Patient had been having intermittent melena for a month prior to presentation. Oncological treatments included ifosfamide, doxorubicin, carboplatin, and etoposide. On presentation, his vitals were significant for HR 102, and BP 85/40 mmHg. Physical exam revealed a non-tender abdomen and rectal exam was positive for melena. His labs are outlined in Table. Chest X-ray revealed metastatic lung nodules. Enteroscopy showed no bleeding up to proximal jejunum. A 2cm ulcerated nodule was noted in the jejunum which was not actively bleeding (Figure A). Colonoscopy with deep cannulation of terminal ileum (40 cm) revealed old blood throughout. Again, similar 2-3 cm ulcerated transverse and hepatic colon nodules were noted which were biopsied (Figure B). Pathology revealed spindle-shaped cells with marked nuclear atypia with poor immunoreactions indicating poorly differentiated sarcoma. CT angiography of the abdomen showed evidence of metastatic nodules in the small and large bowel. Patient's family opted for comfort measures given his poor surgical candidacy and overall prognosis.
Discussion: In line with other sparsely reported cases, our case presented with luminal bleeding from multiple ulcerated nodules.[1,3,4] To our understanding, this was one of the first cases that had simultaneous involvement of both upper and lower GI tract. With the growing incidence of osteosarcoma, it would aid gastroenterologists in understanding clinical presentation and endoscopic appearance to timely recognize this condition and thereby impact outcomes.



[2551] **Figure 1.** A) EGD image showing a 2cm ulcerated jejunal nodule. B,C) Colonoscopy images showing 2-3cm ulcerated nodules in the hepatic and transverse colon.

Table 1. Laboratory values with reference range on presentation

Lab parameter	Value	Units	Reference range
WBC count	17.70	X 1000 cells/uL	4-10
RBC count	2.28	Million/uL	3.5-5.5
Hemoglobin	5.3	g/dL	12-16
Hematocrit	18.3	%	35-45
MCV	80.3	fL	84-96
Platelet count	257	X 1000/uL	150-400
RDW	19.40	%	12-15
Sodium	135	mmol/L	132-143
Potassium	4.2	mmol/L	3.5-5.1
Chloride	102	mmol/L	98-107
Carbon dioxide	26	mmol/L	21-31
BUN	33	mg/dL	7-25
Creatinine	0.8	mg/dL	0.7-1.3
BUN/Cr ratio	34		6-22
AST	22	IU/L	13-39
ALT	10	IU/L	7-52
ALP	49	IU/L	34-104
Albumin	3.0	g/dL	3.7-4.9
Total Bilirubin	1.1	mg/dL	0.2-1.2
INR	1.32		0.90-1.10
Lactic acid	3.07	mmol/L	0.5-1.99

S2552 Presidential Poster Award

Don't Get Fooled: Scurvy Can Mimic Portal Hypertensive Gastropathy Bleeding

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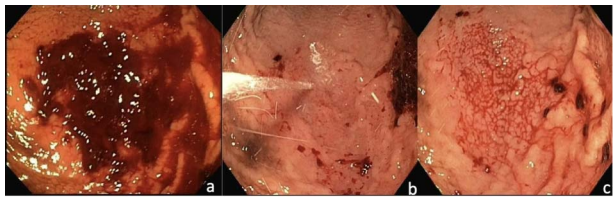
University of Missouri, Columbia, MO.

Introduction: Vitamin C deficiency, also known as scurvy, is a rare cause of significant mucosal bleeding that can easily be missed. It can manifest as diffuse hemorrhage with normal coagulation tests. We describe a case of refractory upper gastrointestinal (GI) bleeding from Vitamin C deficiency initially thought to be related to portal hypertensive gastropathy.
Case Description/Methods: A 56-year-old female with depression, BMI of 74kg/m2, and a recent admission for strangulated ventral hernia with small bowel resection presented to the emergency room with episodes of melena. Labs on admission were notable for Hgb 6.1g/dL, down from 11.2 on discharge, and an elevated BUN with normal creatinine, INR and platelets. CT scan showed mild splenomegaly and postsurgical changes of ventral hernia repair with no anastomotic leak or bleeding. Urgent EGD was performed demonstrating clots in the stomach which later removed. Diffuse hemorrhage from distal gastric body with rapid accumulation of blood following washing with water seen. Hemostasis was achieved with hemostatic powder spray. Next day, patient continued to have melena and required blood transfusions. Tagged RBC scan was performed to rule out additional sources of bleeding, demonstrated ongoing bleeding from distal gastric body. Repeat EGD was performed and area treated with argon plasma coagulation and hemostatic powder. Despite our efforts, patient continued to have slow bleeding and required a total of 17 units of blood. Bleeding initially thought to be due to portal hypertensive gastropathy given risk factors for NASH, however, in the absence of additional clinical evidence beyond mild splenomegaly, underlying bleeding diathesis was suspected. Hematology was consulted. Duloxetine was discontinued due to possible platelet dysfunction. Hematological workup was normal including normal PFA-100, VWF, factor VIII, XIII, ECLT, fibrinogen, ECLT, D-Dimer. Notably, Vitamin C levels were found to be below $<$ 0.1mg/dL. A diagnosis of scurvy was made and patient was initiated on high dose ascorbic acid. Within 24 hours of treatment, bleeding had resolved.
Discussion: Morbidly obese patients are predisposed to developing nutritional deficiencies. Vitamin C deficiency should be considered in the differential of severe refractory GI bleeding in post-surgical patients. Treatment is as simple as replacement of Vitamin C, with swift improvement expected.



[2552] **Figure 1.** (a) residual clot noted in the stomach. (b) Distal gastric body being washed with water. Figure (c) Rapid re-accumulation of hemorrhagic areas with oozing noted.

S2553 Presidential Poster Award

Gastric Variceal Bleed Secondary to Acute Portal Vein Thrombosis and Chronic Splenic Vein Thrombosis in the Setting of Paroxysmal Nocturnal Hematuria

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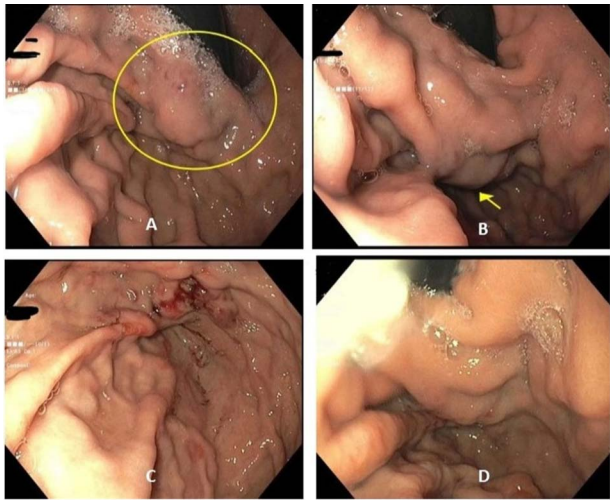
Introduction: PNH causes thrombosis. Long standing thrombosis causes cavernous transformation(formation of venous channels within or around a thrombosed vein).We present a case of acute gastric variceal bleeding due to extensive portal and splenic vein thrombosis from PNH.
Case Description/Methods: 63/F with history of PNH presented with acute melena. CECT abdomen showed an acute, extensive,near occlusive portal vein thrombus (PVT) extending into portal vein branches and SMV with chronic occlusive splenic vein thrombus with multiple perisplenic varices. Prior CT abdomen without contrast showed splenomegaly with possible esophageal varices and pancreatic head soft tissue prominence, and an outpatient EGD/EUS done 4 days before presentation ruled out varices or pancreatic mass. She was stared on octreotide infusion and EGD showed non bleeding isolated gastric varix type 1 (IGV-1) with red wale sign (Fig A&B). Varices were thought to be secondary to extensive acute portal vein thrombosis, so she underwent IR guided mechanical thrombectomy followed by catheter directed tPA infusion with significant reduction in thrombus load. Bleeding resolved and she was discharged on anticoagulation and eculizumab for PNH. She presented 5 days later with melena and EGD showed bleeding IGV-1 not amenable to endoscopic therapy (Fig C). CT angiogram showed persistent main and left PVT with a thrombosed splenic vein with multiple collateral vessels. It was thought that the IGV-1 is secondary to focal central splenic vein occlusion and hence IR guided splenic vein recanalization with splenic varix embolization was planned but could not be attempted due to cavernous transformation of the splenic vein. Patient ultimately underwent partial embolization of the lower pole of splenic artery branches. Repeat EGD showed reduced yet present IGV -1 (Fig D) causing a rebleed 2 months later requiring her to undergo complete IR splenic artery embolization with resolution of bleeding.
Discussion: While there are a few reports of cavernous transformation of portal vein (CTPV), but none with cavernous transformation of splenic vein. There is no treatment option for cavernous transformation, but complications from portal hypertension can be treated via venous thrombolysis and recanalization or arterial embolization to reduce flow with subsequent reduction and/or resolution of varices. Anticomplement therapy, eculizumab, is the only proven therapy to prevent thrombotic complication in PNH while role of prophylactic anticoagulation remains controversial.



[2553] **Figure 1.** (A) & (B) Initial EGD with IGV-1 and stigmata of recent bleed. (C) Bleeding IGV-1. (D) reduction in IGV-1 after splenic artery embolization.

S2554 Presidential Poster Award

Tacrolimus-Induced Esophageal and Colon Ulcers: A Case Report

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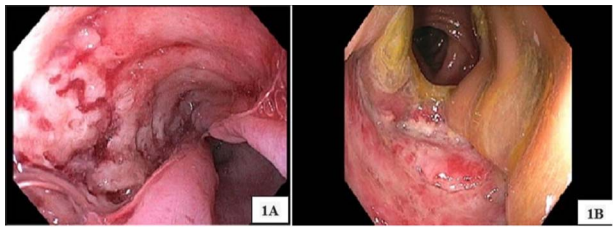
Introduction: Tacrolimus (TC) is one commonly used immunosuppressive medications for patients with solid organ transplants. Here we describe an uncommon side effect of TC presenting with GI tract ulcers.
Case Description/Methods: 44-year-old female with past medical history of orthotopic heart transplant due to arrhythmogenic right ventricular hypertrophy 10 months ago, on TC and mycophenolic acid for immunosuppression who presented with large volume hematochezia, syncope and fall. Her physical exam was notable for sinus tachycardia, hypotension and digital exam was grossly normal without presence of blood. Labs showed a hemoglobin of 3.5 g/dL and a lactate of 3.6 mmol/L, which both improved following resuscitation. Esophagogastroduodenoscopy showed a cratered nonbleeding 5x2-cm mid-esophageal ulcer (Figure A). Colonoscopy revealed 2 nonbleeding cratered ulcers, largest of which was 6x2-cm in the transverse colon (Figure B). Biopsies revealed granulation tissue and necro-inflammatory debris consistent with ulceration and no apparent culprit. Histologic and serologic studies for infectious etiologies (e.g., Cytomegalovirus (CMV), Tuberculosis) were unrevealing. Her clinical course was notable for daily fevers, severe esophageal pain and recurrent hematochezia requiring daily blood transfusions. She ultimately developed hemorrhagic shock and imaging demonstrated active extravasation from the terminal ileum. Interventional radiology performed 2 coil embolizations that successfully controlled the acute bleeding. The decision was made to discontinue TC, as likely the culprit medication. Within days, her GI bleeding resolved, esophageal pain improved, and she was able to eat. Immunosuppression was transitioned to cyclosporine and prednisone, and she was discharged.
Discussion: This report highlights a rare presentation of TC-induced ulcers of the GI tract. The workup of large GI ulcers was a challenge as endoscopic and histologic appearance were not consistent with common etiologies in the post-transplant patient. We considered ischemia, but the patchy distribution and characteristics of these ulcers were atypical. CMV is a common infection in post-transplant patients, but these studies were consistently negative. All other workup was unremarkable. We turned to medications and discontinued TC with rapid improvement in all symptoms. A possible explanation is that TC inhibits TGF-β which mediates granulation tissue and wound re-epithelialization. Discontinuation of TC in similar cases can be considered.



[2554] **Figure 1.** (A) Nonbleeding 5x2-cm mid-esophageal ulcer (B) Nonbleeding cratered 6x2-cm transverse colon ulcer.

S2555 Presidential Poster Award

Intestinal Endometriosis Leading to Recurrent Hematochezia

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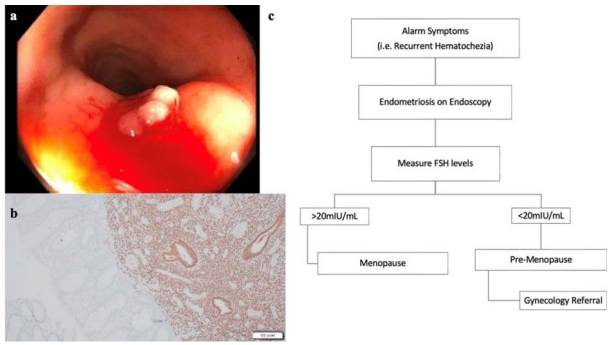
Introduction: Endometriosis involves the GI tract in about 5.4% of all endometriosis cases. This leads to non-specific symptoms such as changes in stool consistency, abdominal pain, and hematochezia, though most women remain asymptomatic. The diagnosis of intestinal endometriosis requires high clinical suspicion. There is no step-wise approach to the workup and the gold standard for diagnosis remains histopathological.
Case Description/Methods: 51F presented for intermittent rectal pain and hematochezia for the preceding two months. She underwent a vaginal hysterectomy without oophorectomy 11 years prior for an unclear indication. Her gynecologist did a transvaginal ultrasound (TVUS) that revealed no acute abnormality. Clinical examination showed tenderness with passage of finger without blood or anal fissures. The colonoscopy revealed a 7mm sessile polyp in the sigmoid colon (Figure a). The histopathology showed no cytologic or architectural atypia, but an immunohistochemical stain for CD10 highlighted the stromal cells as endometrial-type, which supported intestinal endometriosis (Figure b). Given she still had her ovaries, a follicle stimulating hormone (FSH) level was sent to confirm her menopause status. Her FSH was elevated to 56.6mIU/mL (post-menopausal FSH is >20mIU/mL). The patient exhibited no further rectal pain and hematochezia after removal of the endometrial tissue from the colon. Given the absence of other possible etiologies and resolution of symptoms, we attributed her hematochezia to endometriosis.
Discussion: Endometriosis is defined as the presence of functioning endometrial glands and stroma outside the uterine cavity. In a patient without known endometriosis or a prior hysterectomy, intermittent rectal bleeding would prompt a GI work-up rather than a gynecological work-up. A colonoscopy with biopsy would be warranted and required to identify and confirm endometrial tissue in the GI tract. This case is particularly unique as the patient was asymptomatic from her endometriosis during her reproductive years and presented in the post-menopausal state. Menopause is a low-estrogen state, however the decreased levels in menopause are enough to cause symptoms. Furthermore, our patient was overweight and since estrogen can be synthesized in adipose tissue, her risk of symptoms from endometriosis was further increased. As such, we advise our gastroenterology colleagues to keep endometriosis is mind as a possible cause of GI tract bleeding, even in the post-menopausal population (Figure c).



[2555] **Figure 1.** (a) Colonoscopic view of a hyper-vascular lesion embedded at the sigmoid colon wall lumen; (b) Immunohistochemical stain (brown chromogen) for CD10 expression highlights the cytoplasm of stromal cells as endometrial type stroma. The stain for CD10 delineate a clear demarcation between the endometriosis and the colonic lamina propria; (c) Proposed algorithm for Gastroenterologist when endometriosis is diagnosed via colonoscopy.

S2556 Presidential Poster Award

Not Your Everyday Duodenal Ulcer: Massive GI Bleed Secondary to Extramedullary Plasma Cell Myeloma

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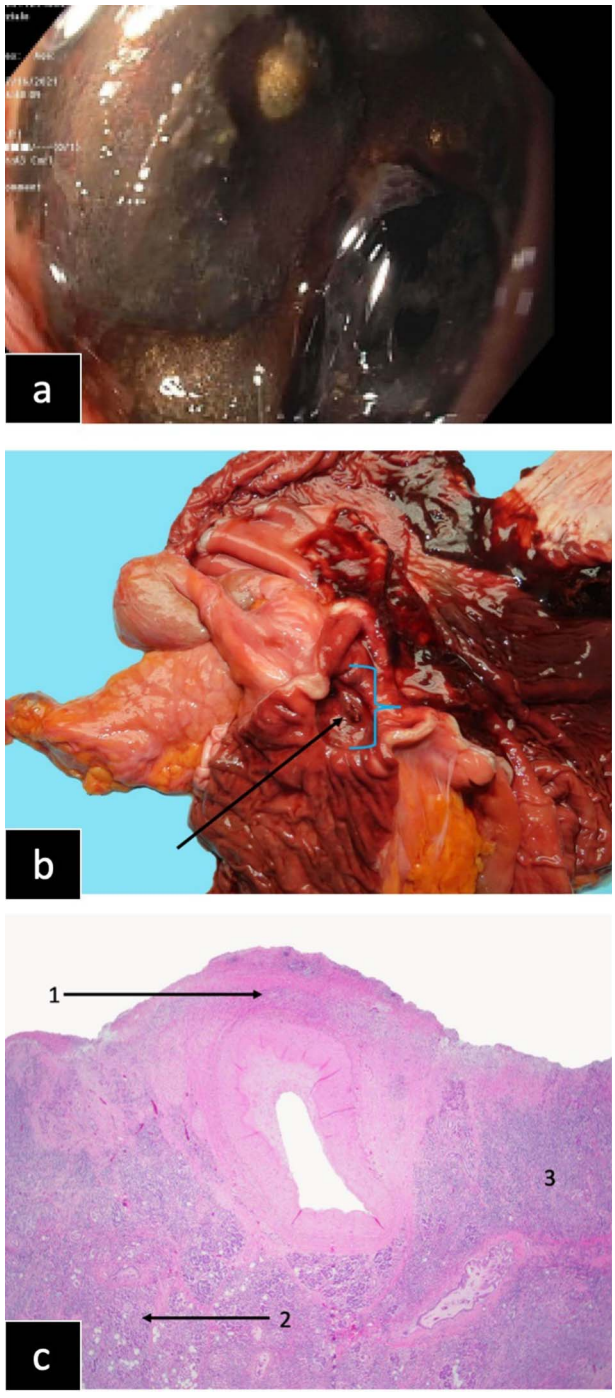
Introduction: Plasma cell neoplasms are defined by a monoclonal proliferation of a single clone of immunoglobulin producing plasma cells. Extramedullary plasmacytomas are rare plasma cell dyscrasias that arise outside of the bone marrow, most commonly in the head or neck. Extramedullary multiple myeloma (MM) involves the gastrointestinal (GI) tract in < 5% of cases, and often presents with non-specific symptoms. Here we discuss one such case of uncommon GI involvement of a plasma cell tumor.
Case Description/Methods: A 62-year-old male with active lambda light chain MM presented with global fatigue, melena, and hematemesis. Initial vitals included blood pressure 90/62 mmHg and heart rate 95 bpm, with labs revealing normocytic, normochromic anemia with hemoglobin (Hgb) 3.9 g/dL. He was transfused 4 units of packed red blood cells with an appropriate Hgb response to 8.6 g/dL. Immediate esophagogastroduodenoscopy (EGD) found a nonbleeding cratered duodenal ulcer with adherent clot, not amenable to endoscopic intervention (Figure a). He remained hemodynamically stable, and given the lack of continued evidence for GI bleed over the following days, vascular interventional radiology (VIR) embolization was deferred. Prior to discharge, patient was having light brown stools with no active signs of bleeding. He was discharged on pantoprazole, with plan for repeat Hgb within 1 week and repeat EGD in 1 month. Unfortunately, patient was readmitted in cardiac arrest within 24 hours of discharge, with oropharyngeal blood and melena. Resuscitation attempts were unsuccessful. Autopsy determined cause of death to be extramedullary GI disease, with plasma cell infiltration and resultant transmural duodenal ulceration involving the gastroduodenal artery having caused acute hemorrhage (Figureb-c).
Discussion: While incredibly rare, due to high mortality and swift progression it is crucial for providers to consider GI extramedullary disease in patients with a history of plasma cell neoplasm who present with upper GI bleed. This holds especially true in cases where the identified lesion is not amenable to endoscopic therapy. Though our patient underwent appropriate resuscitation and evaluation with apparent resolution of symptoms, he died within a day of discharge. Further workup including advanced imaging studies, such as positron emission tomography/computed tomography (PET-CT), or consideration of VIR embolization (deferred here given clinical cessation of bleeding) could be lifesaving.



[2556] **Figure 1.** (a) Ulcer at the duodenal bulb, completely obstructing duodenum. (b) Gastroduodenal ulcer (brackets) with eroded gastroduodenal artery (arrow). (c) H&E, 2X: artery with overlying fibrin cap (1), and surrounding pancreatic parenchyma (2) with plasma cell infiltrate (3).

S2557 Presidential Poster Award

An Unusual Cause of Obscure Gastrointestinal Bleeding

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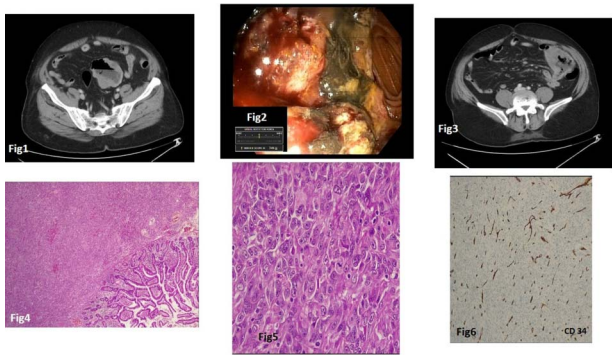
Introduction: Obscure gastrointestinal bleeding is bleeding of unknown origin, that persists or recurs, after a negative initial or primary endoscopy. It accounts for approximately 5% of all cases of gastrointestinal bleeding and is usually due to a lesion in the small bowel. We present a case of rare cause of obscure gastrointestinal bleeding.
Case Description/Methods: 68 year old male, was admitted with history of passing black coloured stools since last 2 weeks. History of weightloss was present. History of squamous cell carcinoma vocal cord in the past and he underwent radiation therapy. Blood investigations showed anemia. Endoscopy showed antral erosions. Colonoscopy revealed caecal angiodysplasia and was treated with Argon plasma coagulation. In view of persistent melena, patient underwent CT angiography, which revealed bowel wall thickening with cavitation and focal bowel dilatation involving the jejunum (Fig 1). Spiral enteroscopy

revealed an ulceroproliferative neoplasm about 4 x 3 cm, involving more than half the circumference of jejunum (Fig 2). He was discharged after stabilisation. Two weeks later, patient was admitted with abdominal pain. CT abdomen revealed dilated jejunal loops with bowel wall thickening and eccentric cavitation. A small loculated collection of size 3.6x1.8cm with a tiny air foci was seen along with minimal free fluid (Fig 3). On laparotomy, a perforated tumor in proximal jejunum, 25 cm away from DJ flexure, was identified. He underwent resection and end to end anastomosis. On histopathology, sections from jejunum showed transmural infiltration by a tumour arranged in sheets. The tumour cells were polygonal to epithelioid, with heterogeneously clumped chromatin. Interspersed proliferated blood vessels were noted. The neoplastic cells show diffuse strong positivity for Pan CK , Vimentin and patchy positivity for CK 7,CD31. CD34 highlighted the vessels. They were negative for p40, CDX2, CK20, CK 5/6, WT1, HMB45, SMA, CD117 and DOG 1. Histopathology was suggestive of a poorly differentiated sarcoma, with IHC suggestive of epitheliod angiosarcoma.

Discussion: Primary angiosarcoma of small intestine is very rare. Epithelioid angiosarcomas are rare tumors, accounting for less than 1%. Angiosarcoma of small bowel may be associated with previous radiation treatment, chemotherapy, and chemical toxin exposure, specifically polyvinyl chloride. Angiosarcoma of small intestine can be considered as a rare cause in a patient who presents with obscure gastrointestinal bleed.



[2557] **Figure 1.** Bowel wall thickening with cavitation and focal bowel dilatation involving the jejunum, Fig 2: Spiral enteroscopy , Fig 3: Dilated jejunal loops with bowel wall thickening and eccentric cavitation, Fig 4/5 Histopathology , Fig 6: Immunohistochemistry.

S2558 Presidential Poster Award

An Unusual Cause of Upper Gastrointestinal Bleed: Temporary Epicardial Pacing Wire

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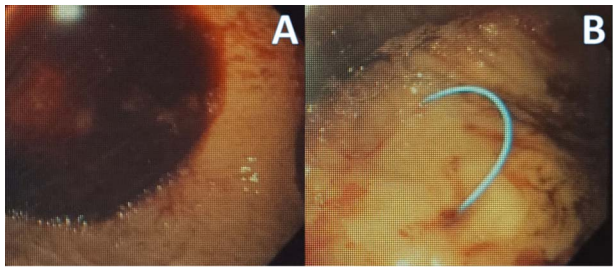
Introduction: A temporary epicardial pacing wire (TEPW) is frequently placed during cardiac surgery to treat postoperative arrhythmias. Gastrointestinal (GI) complications from TEPW are rare, and only a few have been described. Here we describe a rare case of upper GI bleed from TEPW traversing the stomach.

Case Description/Methods: A 76-year-old male with a past medical history of coronary artery disease (CAD) status posts two stents, myocardial infarction, chronic kidney disease, hypertension, and stroke presented to the emergency department with chest pain. The patient had a non-ST-elevation myocardial infarction (NSTEMI); coronary angiography showed multivessel CAD. He underwent coronary artery bypass grafting (CABG), following which the patient had 1200cc dark blood drained through the nasogastric tube. The patient underwent esophagogastroduodenoscopy (EGD), which showed a significant amount of fresh blood (Figure A) and a suspicious linear object entering and exiting the gastric body (Figure B). He underwent a celiac and left gastric artery angiogram with embolization of the injured branch of the left gastric artery. The foreign body removed from the stomach was identified as right ventricle TEPW. Repeat EGD showed no active bleeding.

Discussion: Epi-myocardium of the atria and ventricle are common sites for TEPW placement during cardiac surgery. They are tunneled to the outside through the left subcoastal margin. Poor sensing or capture, dislodgement, or retention are the most common complications. Other complication include bleeding from the right ventricular laceration with tamponade, avulsion of a side branch from a saphenous vein coronary bypass graft, and perforation of the superior epigastric artery. GI complications from this procedure are rare. Few reports of bowel perforation presenting as acute abdomen have been described. A case of dyspepsia due to gastric wall injury caused by the migration of TEPW into the gastric cavity has been described. To our knowledge, no case of upper GI bleed secondary to pacemaker wire misplacement has been described. Post-cardiac surgery patients are usually in the ICU. Therefore, if signs of GI bleeding are present in the postoperative period, EGD should be performed for diagnostic purposes. However, rarely displaced pacemaker wire may be one of the causes of GI bleeding, which should be on the physician's radar.



[2558] **Figure 1.** (A) EGD showing pooled blood in stomach giving definitive evidence of upper GI bleed. (B) EGD showing pacemaker wire traversing the stomach.

S2559

CMV-Induced Small Bowel Bleeding Complicating Severe COVID-19 Respiratory Failure

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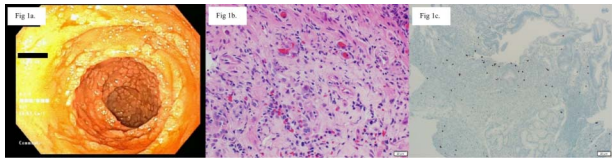
Introduction: Since the onset of the COVID-19 pandemic, reports of associated gastrointestinal (GI) symptoms have been widespread. Of these symptoms, upper GI bleeding is relatively uncommon, and typically associated with peptic ulcer disease and anticoagulation use. Few recent reports have described cytomegalovirus (CMV) co-infection with COVID-19 thus far in the literature. Though CMV gastroenteritis is common amongst immunocompromised hosts, CMV infection in previously immunocompetent hosts is rare.

Case Description/Methods: A 59-year-old previously immunocompetent male with history of chronic obstructive pulmonary disease and chronic kidney disease was admitted with severe COVID-19 pneumonia. He received standard COVID therapy with tocilizumab and dexamethasone. On hospital day 27, he developed decreased stool output, followed by bloody nasogastric tube output, melena, and acute anemia, requiring urgent transfusion and gastroenterology consultation. Upper endoscopy revealed atrophic gastritis and multiple nonbleeding duodenal ulcers with nodular duodenal mucosa; biopsies revealed cytomegalovirus. Colonoscopy showed deep ulcerations throughout the entire terminal ileum, colon, and rectum, also due to CMV. He was subsequently started on intravenous ganciclovir with clinical improvement, absence of further GI bleeding and gradual decline of CMV viral load (Table).

Discussion: It has been previously described that COVID-19 treatment with tocilizumab can cause reactivation of CMV leading to colitis. However, COVID-19-associated CMV duodenitis is exceedingly rare, with limited cases reported thus far. In one report, a 73-year-old man with severe COVID-19 respiratory failure developed abdominal pain in the recovery phase and was noted to have CMV-induced duodenitis and pancreatitis. However, this patient had recent diagnosis of primary cutaneous large B-cell lymphoma and was thus immunosuppressed.[1] This is the first case describing COVID-19-associated CMV duodenitis in a previously immunocompetent host. Moreover, this is only the second reported case of CMV duodenitis in any COVID-19 patient. We suggest any critically ill patient with COVID-19 and gastrointestinal bleeding should be assessed for infectious etiologies such as CMV. (Figure).



[2559] **Figure 1.** Upper endoscopy findings of diffusely nodular mucosa with many non-bleeding superficial ulcers in the second and third portions of the duodenum (Fig 1a). Hematoxylin and eosin stain (x40 magnification) showing CMV inclusion bodies (Fig 1b) and immunohistochemistry stain showing CMV immunoreactivity (Fig 1c).

Table 1. Decline of cytomegalovirus viral load (based on serum PCR) after treatment started with intravenous ganciclovir on 'Day 0'

Treatment Day #	CMV Titer (IU/mL)
Day 1	367,000
Day 5	61,200
Day 7	55,800
Day 14	6,800
Day 17	1,300
Day 25	600
Day 42	197
Day 48	< 96

REFERENCE:

1. Marchi G, Vianello A, Crisafulli E, et al. Cytomegalovirus-Induced Gastrointestinal Bleeding and Pancreatitis Complicating Severe Covid-19 Pneumonia: A Paradigmatic Case. Mediterr J Hematol Infect Dis. 2020;12(1):e2020060.

S2560

A Rare Case of a Bleeding Duodenal Varix Causing Hemodynamic Instability

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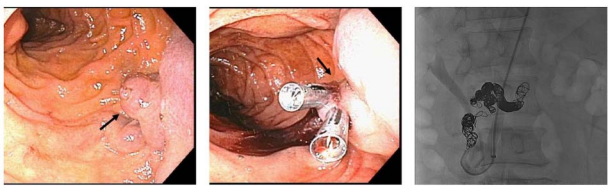
Introduction: Variceal bleeding is a life-threatening complication of portal hypertension (PH), affecting 25-35% of patients with cirrhosis. Duodenal varices are uncommon, accounting for 0.4% of variceal bleeds from PH, but are associated with poor outcomes. Presented is a rare case of a bleeding duodenal varix (DV) causing hemodynamic instability in a patient with cirrhosis.
Case Description/Methods: A 42-year-old male with polysubstance abuse and alcoholic cirrhosis complicated by PH and esophageal varices (EV) presented via emergency medical services after being found down in the street. The patient was hypotensive, tachycardic to the 140s, and febrile to 40.4 degrees Celsius. Physical exam was remarkable for blood covering his lower extremities and a large blood clot in his rectum. Labs were significant for a hemoglobin of 6.7 g/dl, platelet count of 68 K/MM3, white blood count of 15.6, bilirubin of 4.4 mg/dL, ammonia of 76 umol/L, and lactic acid of 4.2. Triphasic computed tomography of the abdomen and pelvis with intravenous (IV) contrast showed cirrhotic liver morphology and thickening of the ascending colon. Two units of packed red blood cells, IV pantoprazole, and IV octreotide were given. An emergent esophagogastroduodenoscopy demonstrated PH gastropathy, non-bleeding EV, and a 5-millimeter bleeding DV (Figure a). To achieve temporary hemostasis, two clips were placed over the DV with plan for Interventional Radiology (IR) to definitively control bleeding with embolization (Figure b). Abdominal ultrasound with Doppler demonstrated a patent portal venous system. Venogram showed DV fed by inflow from the superior mesenteric venous circulation with outflow via an enlarged right gonadal vein. Retrograde coil embolization resulted in complete resolution of bleeding (Figure c).
Discussion: Common sites of variceal bleeding include the esophagus and stomach. Though DVs are rare, it is essential to gain consensus on the optimal approach to treatment as the mortality rate is up to 40% due to origination of DVs in the deep serosal layer and high vascularity of the duodenum. In this case, clips were used to achieve hemostasis followed by embolization for definitive cessation of bleeding. Clips also served as a landmark for IR to target during the venogram and coil embolization. Clips on their own may not be sufficient to control duodenal bleeding as there is risk of inadequate occlusion of vessels or tissue perforation. This multimodal approach offers an effective path to managing bleeding DV.



[2560] **Figure 1.** (a) 5-millimeter bleeding duodenal varix, as indicated by arrow. (b) Duodenal varix after placement of hemostatic clips, as indicated by arrow. (c) Venogram with retrograde coil embolization of the duodenal varix.

S2561

Terminal Ileal Diverticular Bleed: A Case Report and Review on Current Approaches for Intervention

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Introduction: Colonic Diverticula are one of the most common findings in colonoscopies and are a common cause of lower GI bleed. They are most commonly seen in the large bowel - with 64% in the sigmoid colon, 8% in the descending colon or splenic flexure, 7% in the transverse colon, and 20% in the ascending colon or hepatic flexure. Small bowel diverticula are rare but they carry a risk of serious complications.

This case report describes a 66 years old Male who presented to the emergency department with an acute lower GI bleed and was found to have a bleeding terminal ileum diverticulum, which was stopped with endoscopic intervention.

Case Description/Methods: A 66 years old Male presented to the Hospital with an Acute Lower GI bleed with hemodynamic instability, for which a decision was made to obtain a CT Angiogram, that showed active bleeding into a diverticulum of the terminal ileum from a distal branch of the superior mesenteric artery. Colonoscopy was performed, and terminal ileum intubation showed a single small bleeding diverticulum. For Hemostasis, hemostatic clips were successfully placed, and there was no bleeding at the end of the procedure. The patient recovered uneventfully and had no further gastrointestinal bleeding.

Discussion: Diverticulosis refers to the presence of small outpouchings that develop in the wall of the gastrointestinal tract. It is thought to be caused by abnormal intermittent high pressure in the colon due to muscle spasms or straining with stool at weak spots in the colon wall in the large intestine. An acquired diverticulum in the small intestine is a rare condition and may be a serious cause of lower GI bleed due to the technical difficulty with endoscopic intervention given its unusual anatomic location. Historically, approaches like changing the patient's position, attaching a transparent hood at the distal end have been tried. Hemostasis is usually achieved by injection, hemoclip, coagulation, thrombin spray, or combination. In the diverticula that are unable to be accessed by endoscopic intervention, other options include therapeutic angiography and embolization of the bleeding vessel or surgical treatment consisting of resection of the intestinal segment containing the diverticula. Thus, clinicians must be vigilant that although colonoscopy can define the cause in most patients with lower gastrointestinal bleeding, no bleeding site is identified in 10%–20% of cases. In such cases, an important cause may be an incomplete workup that overlooked the ileocecal region.

[2561] **Figure 1.** Active Hemorrhage into a Diverticulum of the Terminal Ileum

S2562

Argon Plasma Coagulation and Endoscopic Banding in the Treatment of Refractory Gastric Antral Vascular Ectasia-Associated GI Bleed

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Introduction: Gastric antral vascular ectasia (GAVE) is often associated with chronic liver disease or autoimmune disorders and characterized by red, angiomatous lesions in the antrum found during endoscopic examination. This disease accounts for about 4% of non-variceal upper gastrointestinal bleeding (UGIB) and commonly leads to iron deficiency anemia. Current treatment consists of endoscopic argon plasma coagulation (APC) or radio frequency ablation (RFA). However, endoscopic band ligation (EBL) has emerged as an alternative therapy for refractory GAVE and has been shown to decrease risk of bleeding.

Case Description/Methods: A 65-year-old male with a past medical history of cardiac and kidney disease presented with melena and iron deficiency anemia. He was hemodynamically stable on admission. Presenting hemoglobin was 6.7 g/dL with a baseline of 8 g/dL. His initial upper endoscopy revealed severe GAVE with significant bleeding and mild nodularity within the gastric antrum requiring APC treatment. Biopsies at that time were negative for malignancy or H. pylori. The patient continued to have persistent anemia requiring outpatient blood transfusions. He underwent a follow-up upper endoscopy five months later, which revealed worsening nodular antral gastropathy formation. The decision was made to treat the patient with both APC and EBL. Two months later, a repeat upper endoscopy revealed improvement of GAVE with minimal bleeding. The patient's hemoglobin also remained stable over the course of the two months and did not require further blood transfusions.

Discussion: GAVE commonly presents with significant UGIB commonly requiring multiple blood transfusions. Patients are commonly treated with acid suppression medication or endoscopic treatment with APC or RFA. However, in this particular case, we highlight the use of dual treatment with APC and EBL in improvement of blood loss and stabilization of anemia. Though there is limited literature in regards to the duration of EBL use and long-term effects, this adjunct treatment option should be considered in GAVE patients that have refractory anemia or lack endoscopic improvement with treatment of solely APC or RFA.

S2563

Upper GI Bleed Caused by Ampullary AVM

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Introduction: GI bleed (GIB) is responsible for 1,000,000+ hospitalizations every year, and a mortality rate of 2-10%. Ampullary AVMs are an uncommon etiology of GIB and difficult from a diagnostic standpoint. We present a case of 77-year-old man presenting to emergency department (ED) with acute shortness of breath (SOB) and chest pain (CP), and dark stools for 4 days, found to have acute GIB caused by ampullary AVM.

Case Description/Methods: 77-year-old white male presented to ED with acute SOB and CP. Past medical history included aortic regurgitation s/p valve replacement, atrial fibrillation s/p ablation and watchman, chronic anemia with baseline Hgb of 9, HTN, HFpEF, and ulcerative colitis s/p curative total proctocolectomy and ileostomy with modified Kock pouch procedure. Physical exam was unremarkable aside from dark-appearing ileal pouch output. He was not on anticoagulation and denied Pepto-Bismol use. Abnormal labs included Hgb/Hct of 5.1/16.4, BUN:Cr 37:1.93, and hemoccult positive stool from ileal pouch. Presenting symptoms of anemia (CP, SOB) were consistent with lab findings, concerning for GIB in setting of hemoccult positive stool. He received IV Protonix, Rocephin, and 1u pRBCs for acute blood loss anemia secondary to suspected GIB and was admitted to hospitalist. GI was consulted to do EGD, which showed active bleeding around major papilla, suggesting hemobilia. Subsequent CT A/P with contrast showed no clear etiology of bleed, so nuclear medicine bleeding scan was performed. The scan was unremarkable, and he continued to have melena, requiring 2u of pRBCs. Finally, ERCP was pursued to evaluate for potential biliary source. A normal bile duct (BD) was identified via cholangiogram, measuring 10mm without filling defect. Sphincterotomy was performed, followed by BD sweeping using a stone extraction balloon. No blood clots were noted, making hemobilia less likely. However, slow bleeding from inferior aspect of ampulla was visualized. The site was lavaged and appeared to be ampullary AVM (see Figure). Before ablation of AVM, a PD stent was placed to reduce likelihood of post-ERCP pancreatitis. Following procedure, his Hgb normalized, and he stopped having melenic stools. He continued PPI treatment outpatient and is doing well.

Discussion: To our knowledge, no case of GIB caused by ampullary AVM is found in the literature. Thus, this case reports a rare finding of ampullary AVM and provides support for endoscopy as diagnostic approach in such patients.

[2563] **Figure 1.** Ampullary AVM.

S2564

Unusual Cause of Bleeding Mimicking Malignancy in a Young Patient

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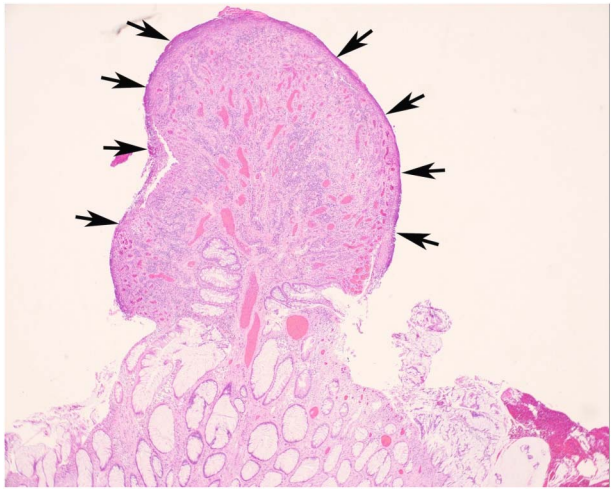
Introduction: Cap polyposis, also referred to as inflammatory granulation tissue, is a very rare entity involving multiple inflammatory polyps commonly found in the sigmoid colon and rectum. It is often diagnosed incidentally when investigating other causes of iron deficiency anemia such as malignancy. We report a previously healthy and young athletic male who was discovered to have this.
Case Description/Methods: A 28-year-old athletic male with no medical history presented for intermittent rectal bleeding ongoing for a few years. He was evaluated for fatigue during a marathon run and was found to have hemoglobin of 6.8 g/dL (normal: 13.5-17g/dL) and iron deficiency anemia. He received 1 unit of packed red blood cells and was referred for a gastroenterology evaluation. The esophagogastroduodenoscopy was normal, however the colonoscopy identified a villous, fungating, infiltrative, polypoid and ulcerated 4-cm rectal mass starting at the anal verge which was identified as the source of the bleeding. Biopsy was consistent with inflammatory granulation tissue with mixed acute and chronic inflammation and there was no evidence of malignancy. He was referred to colorectal surgery for removal of mass due to continued bleeding, which he underwent 2 weeks later. His postoperative course was complicated by suture line bleeding requiring 2 packed red blood cells. 1 month post resection, his hemoglobin trended up to 15.3 with no reoccurrence of bleeding. The pathology showed no features of chronic infections or lymphoma. He remains healthy to this date.
Discussion: Cap polyposis is a rare etiology of rectal bleeding which sometimes presents as a worrisome rectal mass concerning for malignancy. Etiologies are suspected to be chronic mucosal irritation and infection. Symptoms may consist of tenesmus, diarrhea or rectal bleeding. It is a non-neoplastic and benign condition diagnosed via endoscopy and treatment involves polypectomy if feasible, or as in this case surgical removal. It is important to consider cap polyposis in the differential diagnosis of malignant appearing recto-sigmoid masses. It is not related to adenomatous polyps or inflammatory bowel disease.



[2564] **Figure 1.** Low power view of one of the numerous polyps showing complete ulceration of the surface, inflammatory cap (arrows), presence of granulation tissue and mixed inflammation in the stroma of the polyp. The normal colonic mucosa can be appreciated at the bottom of the image.

S2565

A Rare Case of Simultaneous Bleeding From a Dieulafoy's Lesion and a Gastroesophageal Varix Type 1 in a Decompensated Cirrhotic Patient

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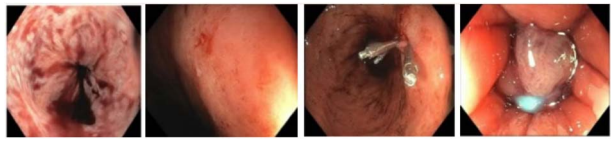
Introduction: Bleeding from Dieulafoy's lesion (DL) is an important cause of gastrointestinal bleed (GIB) with relatively high mortality. Their incidence is reported to be 1% to 2% of all GIBs[1]. DLs are most often linked to cardiopulmonary and renal disease[2]. Bleeding gastro-esophageal varices (GOV) type 1 also pose a high mortality rate (30%). We present a rare case of simultaneous bleeding from an antral DL and a GOV type 1 in a decompensated cirrhotic patient.

Case Description/Methods: A 57-year-old man with a history of decompensated liver cirrhosis complicated by esophageal varices presented with multiple episodes of hematemesis. He denied diarrhea or bloody stool. As per outside records, his most recent EGD 7 months prior was notable for bleeding esophageal varices requiring 3 band ligations. Patient was tachycardic on presentation. Initial labs showed WBC 17.3, Hb 10.7, Hct 34, platelet 166, INR 1.90, Na 132, Cr 0.9, AST 39, ALT 20, ALP 129, total bilirubin 2.9. The patient received blood transfusion and was started on octreotide and pantoprazole infusions. Subsequent EGD revealed a bleeding GOV type 1 treated with three band ligations and interestingly, also a bleeding antral DL which was treated with 3cc epinephrine injection followed by application of three hemoclips. The patient's clinical status improved with complete resolution of GIB. (Figure)
Discussion: DL is a rare cause of GIB in advanced liver disease (ALD), which is not directly related to portal hypertension[3]. It is an abnormally large and tortuous submucosal artery that can rupture and cause life-threatening GIB. With the shift from surgical treatment toward endoscopic interventions, the mortality and morbidity of DLs reportedly improve from 80% to 8.6%[1], although, a combined mortality rate from a bleeding DL and GOV remains very high. Endoscopic therapies include epinephrine injection, probe coagulation, band ligation and hemoclips. Mechanical modalities with banding and hemoclips are safest and most effective with lower re-bleeding rate. It was interesting to note that our case had two simultaneous sources of bleeding in the form of GOV type 1 and a DL which were promptly treated. We highlight the importance of thorough endoscopic evaluation when investigating GIBs in ALDs since uncommon causes such as DL can lead to devastating outcome if not being promptly diagnosed and treated.



[2565] **Figure 1.** a. Large amounts of blood noted in the fundus b. Antral Dieulafoy's lesion c. Dieulafoy's lesion status post banding and epinephrine injection d. Gastro-esophageal Varix type 1 status post banding.

S2566

Isolated Duodenal Vascular Ectasia Causing Fatal Gastrointestinal Bleeding

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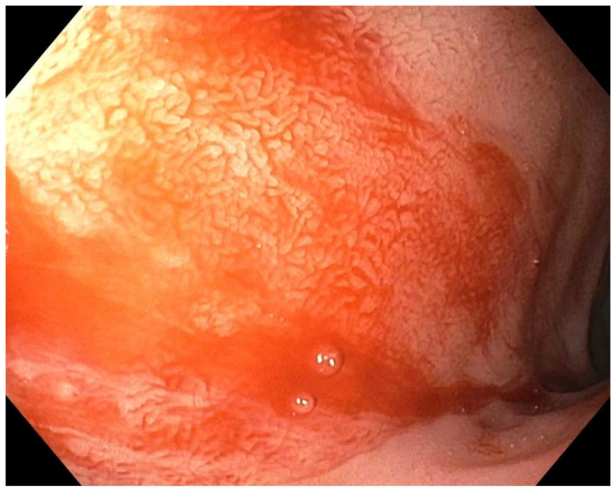
Introduction: Vascular ectasias are a common cause of acute upper gastrointestinal bleeding due to dilation and fragility of gastrointestinal capillaries. They are most commonly seen as gastric antral vascular ectasia (GAVE), and are associated with conditions like cirrhosis, ESRD, and autoimmune connective tissue disease. Duodenal vascular ectasias (DUVE) are rare and are usually present with concomitant GAVE. Here we present the case of an isolated DUVE that was difficult to manage and ultimately fatal.
Case Description/Methods: A 28-year-old man with cirrhosis due to alcohol presented to our facility after relapsing from alcohol use disorder and was found to have hematochezia and severe anemia, with Hgb 4.3, Plt 76, INR 3.45. Endoscopy showed two columns of small, non-bleeding esophageal varices, a large amount of fresh red blood in the stomach, and mild portal hypertension gastropathy without varices, ulceration, arteriovenous malformations, or GAVE. Advancement into the duodenum showed a patch at the 9 o'clock position with significant and active bleeding [Figure]. Given patients underlying coagulopathy, hemostatic powder was applied liberally with successful hemostasis. Repeat endoscopies two days and nine days later both showed no evidence of further bleeding from the duodenal vascular ectasia, and the patient was discharged. One week later, the patient developed acute hepatic encephalopathy and was admitted. During the admission he subsequently had massive hematochezia with hemodynamic instability. His family elected to transition him to comfort care thus a repeat endoscopy was not performed. Autopsy revealed two liters of fresh blood within the stomach and only a deflated esophageal varix, suggesting that his source of bleed is from the DUVE.
Discussion: Isolated DUVE without evidence of GAVE is exceedingly rare, with only one reported isolated case of DUVE. Here we present a case of isolated DUVE that seemingly caused multiple episodes of severe GI bleeding and ultimately death. Previous case reports demonstrated treatment of ectasias using argon plasma coagulation, but due to this patient's underlying coagulopathy, only hemostatic powder was applied, resulting in temporary hemostasis. This patient's presentation and outcome highlights a need for further research in the management of this rare but serious type of gastrointestinal bleeding.



[2566] **Figure 1.** Duodenal vascular ectasia bleeding.

S2567

Vaping-Induced Duodenal Ulcer

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Introduction: Vaping, or electronic cigarette use has tremendously increased. It is estimated a population of five million is involved in vaping each year. While lung injury associated with vaping has gained national attention, the systemic burden of vaping has not been established. To date, there is no current report on the prevalence of gastrointestinal symptoms alone in association with vaping, yet it has been reported that 90% of patients who present with lung injury also have gastrointestinal symptoms. This raises the concern that vaping may also result in gastrointestinal injury such as seen with tobacco smoking and use of nicotine products. To our knowledge, vaping has not been shown to be associated with gastrointestinal ulcers or peptic ulcer disease.
Case Description/Methods: We report a case of a 19-year-old male who was admitted to the intensive care unit for concern of hemorrhagic shock after presenting with hematemesis from a duodenal ulcer. The patient had no other medical history or known risk factors for peptic ulcer disease. However, he did report a seven-month history of vaping marijuana and THC products through a vaping pen for several hours per day prior to his onset of gastrointestinal symptoms and eventual hematemesis. Patient gastrin levels were normal. Gastric biopsies were negative for H Pylori. He denied using NSAIDS, including BC powders and goody powders.

Discussion: This case emphasizes the need for clinicians to obtain a medical history of vaping when assessing patients with gastrointestinal symptoms. Future research in vaping should evaluate if the various compounds in vaping products or if the different methods of vaping can cause adverse gastrointestinal side effects such as ulcers.

S2568

Bleeding Jejunal Varix: A Disease Without Standardized Treatment

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Introduction: Varices occurring within any of the abdominal viscera, excluding the esophagus and stomach, are referred to as ectopic varices. Less common sites of ectopic variceal bleeding are the ileum and jejunum. Although techniques exist to treat bleeding in these areas, there is limited data on the use of hemostatic clips via double balloon enteroscopy (DBE) in these scenarios.
Case Description/Methods: 52-year-old male with a history of hepatitis C/alcoholic cirrhosis complicated by esophageal varices status post banding ligation presented with three days of hematochezia and near syncope. He had a distended abdomen with moderate ascites, and trace peripheral edema. Lab studies revealed anemic to 5.1 g/dL, thrombocytopenic to 68/μL, and a Model for End-Stage Liver Disease (MELD) score of 10. Abdominal ultrasound revealed cirrhosis and moderate ascites. Esophagogastroduodenoscopy revealed small esophageal varices without active bleeding. Colonoscopy showed blood throughout the colon and terminal ileum without active bleeding. Video capsule endoscopy revealed a submucosal lesion with prolonged pill retention proximal to the distal jejunal lesion. The mucosa on the lesion was denuded concerning for ulceration and a possible source of bleeding (Figure, left). The patient underwent retrograde DBE which revealed bright red blood throughout the ileum. Anterograde DBE revealed a mid-distal jejunum varix with active bleeding from a focal mucosal break and fibrin formation (Figure, middle). Two hemostatic clips were placed on the proximal and distal sides of the bleeding site, and hemostasis was achieved (Figure, right). He was discharged and was scheduled for a balloon-occluded retrograde transvenous obliteration (BRTO) for definitive therapy. Despite not following up for BRTO, the patient has had no further episodes of bleeding at 6 months following intervention.
Discussion: In treating distal jejunal and ileal variceal bleeding, the primary concern is accessing those sites. Standard endoscopy is commonly insufficient, so DBE has utility in these cases. In our case, the patient's varix was treated by hemostatic clips placed to decompress the varix at its site of bleeding using mechanical force. This technique was done as a temporary measure with the intent of definitive therapy by means of BRTO. This case demonstrates not only the utility of DBE in diagnosing and accessing small bowel varices, it also provides an additional means of treatment by the use of hemostatic clips as a bridge to more definitive therapy.

[2568] **Figure 1.**

S2569

Bleeding From Peg Tube Insertion Site due to a Gastroepiploic Artery Pseudoaneurysm

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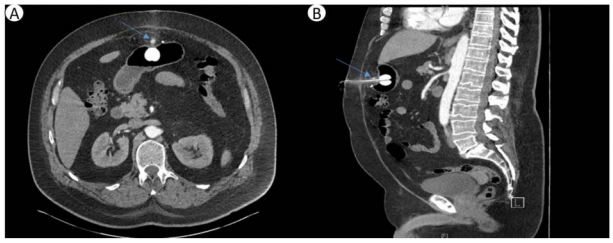
Introduction: Percutaneous endoscopic gastrostomy (PEG) is generally regarded as a safe procedure with rare complications. Gastroepiploic artery aneurysms (GEAAs) are extremely rare with only 22 cases reported in the literature and constituting 3-4% of all splanchnic artery aneurysms. GEAAs carry a mortality rate of 70% due to a 90% rate of rupture and can lead to complications like hemorrhagic shock. Therefore, early detection and management is necessary for survival.
Case Description/Methods: A 55-year-old male with PEG tube placed for ALS-associated dysphagia presented with bleeding around the PEG tube site 10 days after placement. He was admitted twice for the complaint. On his first admission, EGD was normal and it was suspected that he had bleeding subcutaneously around the PEG site that self-resolved. He was discharged but promptly returned the next day with profuse bleeding around PEG tube. Emergent repeat EGD was again negative. This time, the diagnosis was confirmed with CTA of the abdomen that demonstrated a branch of the gastroepiploic artery that had an 8mm pseudoaneurysm. Interventional radiology successfully performed US-guided thrombin injection with successful thrombosis of the pseudoaneurysm. The patient's PEG site bleeding stopped, and patient successfully discharged.
Discussion: Gastric bleeding following PEG tube placement is rare and usually occurs secondary to injury of the small gastric vessels. Due to the rotated configuration of stomach, caution should be exercised when penetrating during the PEG insertion. The gastroepiploic artery (GEA) runs along the greater curvature and may be injured during PEG tube placement although this is rare. The bleeding in our patient was due to a pseudoaneurysm of the GEA as evident from CT scan. GEA peudoaneurysms are a very rare complication that occur due to iatrogenic injury to the artery. GEA pseudoaneurysms can present as abdominal pain, bleeding, and even shock due to intraperitoneal hemorrhage. Due to the risk of fatal bleeding by GEA pseudoaneurysms, early detection and management is needed. Our patient was treated with percutaneous thrombin injection leading to resolution of bleeding. Other treatment options include trans arterial embolization and more invasive including surgical repair. Systemic embolization is the main complication of thrombin injection and can be prevented by placing the needle tip away from the neck of the pseudoaneurysm. (Figure).



[2569] **Figure 1.** A (axial) and B (sagittal): Arrows represent a small 8 mm pseudoaneurysm off of the gastroepiploic artery at the level of the gastrostomy tube insertion site.

S2570

Brunner's Gland Hamartoma: A Non-Malignant Unusual Cause of Upper Gastrointestinal Bleeding in a 77-Year-Old Man

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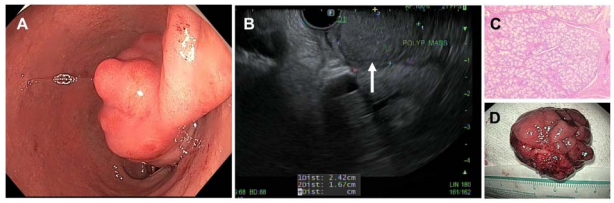
Introduction: Brunner's gland hamartoma is a rare benign duodenal tumor. It is usually found incidentally on the esophagogastroduodenoscopy (EGD), but some patients present with gastrointestinal bleeding.
Case Description/Methods: A 77-year-old man with past medical history of hypertension presented to the hospital with melena and pain in the left upper quadrant for four months. The pain was sharp and radiated to the back. He denied nausea, vomiting, weight loss, and diarrhea. Patient had not taken NSAIDs. Vital signs were normal. Abdominal examination was soft, nontender, and without a palpable mass. Laboratory included Hb 15.2 g/dL and Hct 46.8%. EGD showed a single 30 mm pedunculated polyp with no bleeding in the duodenal bulb. Endoscopic ultrasound (EUS) showed a 24.2x16.7 millimeters, hypoechoic, homogeneous mass originating from the muscularis mucosa layer at the duodenal bulb with low flow on Doppler. En bloc endoscopic mucosal resection (EMR) of the mass was performed with the

help of endoloop placement followed by electrocautery-assistant resection and endoclip placement to close the resected area. The patient tolerated the procedure well without any consequence. Histopathology of the mass showed hyperplasia of Brunner's glands. Follow up endoscopy at 6 month revealed healed scar at the resected site without any endoscopic evidence of recurrence.
Discussion: Brunner's gland hamartoma is an extremely rare duodenal tumor with an estimated incidence of 0.008%. The name arises from the Brunner's glands which are acinotubular glands that secrete alkaline fluid. The majority of patients are asymptomatic and have an incidental finding from the imaging or EGD. Patients commonly present with gastrointestinal bleeding and obstructive symptoms. EGD finding usually reveal a pedunculated mass 1-2cm in size located at duodenal bulb area consistent with Brunner's gland distribution. The diagnosis relies on endoscopic finding and imaging. The pathology of the tissue yields the definitive diagnosis. Often this polyp develops into thick wide stalk which may contains large blood vessel; EUS should be performed to assess the lesion as well and its vascularity. Endoloop placement prior to EMR should help prevent significant bleeding during the resection of the lesion as described in our case. Malignant potential has been reported to be extremely rare, but dysplastic changes and invasive carcinoma can be seen. (Figure).



[2570] **Figure 1.** (A) Endoscopic view of a large pedunculated polyp at the duodenal bulb (B) Endosonographic view (white arrow) of the lesion at the duodenal bulb (C) Histopathology (H&E stain) shows hyperplasia of the Brunner's glands (D) Gross specimen of the mass measuring 3cm in size.

S2571

Cancer, the Colon, and an Inconspicuous Cause of Hematochezia

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Introduction: Hematochezia has an annual incidence for hospitalizations of 36 per 100,000 population. The most common causes are diverticulosis, angiodysplasia, inflammatory bowel disease and malignancy, including primary colon and metastatic disease. Only about 1% of all colorectal tumors are from secondary metastases, usually of the breast, ovary, prostate, lung and stomach. Metastasis of endometrial cancer to the colon is extremely rare, and this is the first known case in the literature of previously evaluated stage IA endometrial cancer metastasizing to the colon.
Case Description/Methods: A 91-year old woman with a history of stage IA endometrial cancer treated with carboplatin and taxol and atrial fibrillation on warfarin presented to the ER with one week of hematochezia, lightheadedness and fatigue. Physical exam revealed bright red blood on rectal exam. Her hemoglobin resulted at 5.1 g/dL (from 10.6 g/dL). After empiric prothrombin complex concentrate and four units of packed red blood cells, hemoglobin improved to 8.8 g/dL and INR was 1.3. Colonoscopy found an ulcerating, infiltrative mass in the descending colon which was biopsied and clipped for hemostasis. Pathology showed malignant metastatic neoplasm with endometrial primary, confirmed via immunohistochemistry staining (Figure 1).
Discussion: This case represents a rare cause of metastatic colon cancer: primary endometrial metastasis. Prior to hospitalization, she was stage 1A, defined as invasion of more than halfway through the myometrium, without spread beyond the uterus' body nor lymph node or distant involvement, however her colon mass was positive for endometrial origin. Primary endometrial cancer metastasizing to the colon is extremely rare, with less than 10 published cases. Risk factors for colonic spread include grade 3 endometrial adenocarcinoma, myometrial invasion greater than 50%, age over 60, lymphovascular or lower uterine. Of the few known cases of endometrial metastasis to the colon, two were stage IB, and to our knowledge, this is the first case of stage IA endometrial cancer that metastasized to the colon. Despite low incidence, colonic metastases should be suspected in patients with stage IA endometrial cancer presenting with hematochezia.

[2571] **Figure 1.** Descending colon mass which was ulcerating and oozing bright red blood. Pathology found adenocarcinoma fragments with immunohistochemical staining compatible with gynecologic/Mullerian primary.

S2572

Bleeding Duodenal Varix Treated With Hemostatic Clips

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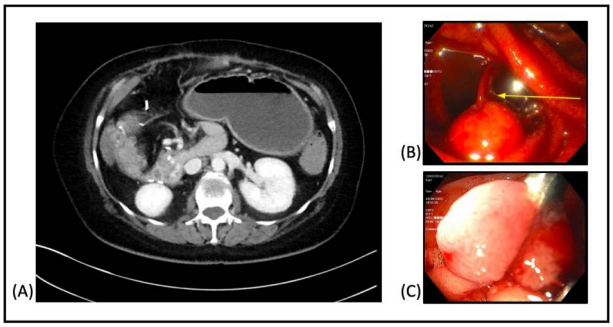
Introduction: Duodenal varices are a rare etiology of upper gastrointestinal bleeding with a prevalence of 0.4% in patients with portal hypertension undergoing esophagogastroduodenoscopy (EGD). Ectopic varices account for 1–5% of variceal bleeding, of which 17–40% are estimated to occur within the duodenum. Definitive guidelines on the management of duodenal varices, which have an estimated mortality rate of 40%, have not been established. We report the use of hemostatic clips to achieve hemostasis in a case of a bleeding duodenal varix due to portal hypertension in an orthotopic liver transplant patient with a dysfunctional mesocaval shunt.
Case Description/Methods: A 42-year-old female with advanced liver cirrhosis (MELD 17) secondary to alcohol use and primary biliary cholangitis status post orthotopic liver transplantation complicated by portal vein thrombosis and biliary stricture for which she underwent mesocaval shunting and biliary reconstruction with recurrent portal hypertension. She presented with one day of bright red blood per rectum. On admission, her vital signs were significant for hypotension (81/61 mmHg) and tachycardia (132 bpm). Her hemoglobin was 7.6 g/dL (baseline 12 g/dL). Computed tomography angiography was remarkable for prominent proximal duodenal mucosal varices, portosystemic shunting with prominent splenorenal and gastric/gastroesophageal varices, and portal vein thrombosis. EGD was significant for a large (>5 mm) actively bleeding varix in the second portion of the duodenum, for which two hemostatic clips were successfully placed with resolution of bleeding. The patient remained hemodynamically stable post-procedure and was transferred to her transplant center for further management with no further bleeding episodes.
Discussion: Alcoholic-associated liver disease (ALD) is one of the most common causes of cirrhosis. As the incidence and prevalence of ALD continues to rise, it is important that management of duodenal variceal bleeding becomes more standardized. Only a few cases have reported the use of hemostatic clips in these patients. Treatment options include band ligation, coiling, cyanoacrylate injection, balloon-occluded retrograde transvenous obliteration, and transjugular intrahepatic portosystemic shunt. Standardized treatment modalities for duodenal variceal bleeds have not been well-established and further studies are required to investigate appropriate management strategies. Our case demonstrates that hemostatic clips can be effectively used to achieve hemostasis (Figure 1).



[2572] **Figure 1.** (A) Computed tomography angiography (CTA) revealing prominent proximal duodenal mucosal varices, likely from the superior mesenteric vein. (B) Esophagogastroduodenoscopy (EGD) demonstrating a large (>5 mm) actively bleeding varix in the second portion of the duodenum. (C) EGD demonstrating hemostatic clips placed on the duodenal varix with resolution of bleeding.

S2573

Brunner's Gland Hyperplastic Polyp Resulting in Gastrointestinal Bleeding: A Zebra Does Not Change Its Stripes!

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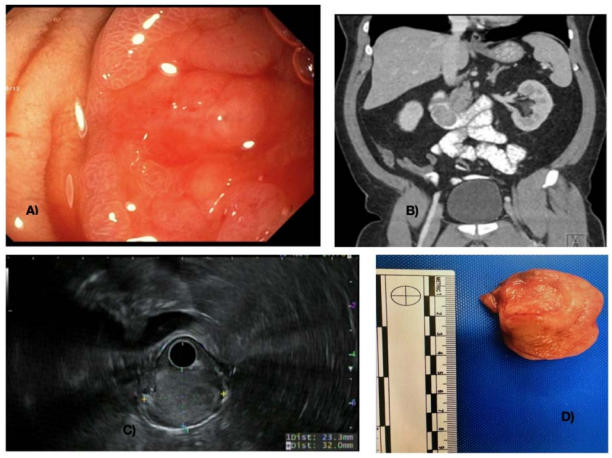
Introduction: Brunner glands are exocrine glands found in duodenal mucosa and submucosa that secrete alkaline mucinous fluid, protecting the duodenal mucosa from the acidic stomach content. Brunner's gland hyperplasia (BGH) is a rare benign tumor of the small intestine. It is often asymptomatic and usually incidentally detected during an EGD or imaging. In symptomatic patients, the most common presentations are gastrointestinal bleeding and gastric outlet obstruction. The majority of bleeding cases present with iron deficiency anemia.
Case Description/Methods: A 52-year-old male who presented with palpitations and exertional dyspnea was found to have significant anemia with a hemoglobin level of 5.9 g/dl and MCV of 62 fl. The patient endorsed melenic stools for three weeks and denied using NSAIDs, alcohol, or tobacco. He was admitted to the hospital and was transfused two units of packed RBC. EGD showed a large pedunculated duodenal bulb polyp with central ulceration and stigmata of bleeding (Image A) but was separate from the ampullary complex. Mucosal biopsies showed duodenal mucosa with gastric foveolar metaplasia and no evidence of dysplasia or neoplasia. Gastric biopsies were negative for *H. pylori*. CT abdomen showed a 2.5 × 3.4 × 3.9 cm hypoattenuating mass in the duodenal bulb but extending to the second portion of the duodenum (Image B). Endoscopic ultrasound showed a heterogenous hypoechoic mass measuring 32 × 23 mm, originating from the mucosal and submucosal layers (Image C). A fine needle biopsy using a 22-gauge needle showed fragments of the duodenal wall with no malignant cells or stromal elements. Because of the bleeding nature of the mass, the patient underwent laparoscopic polypectomy and pyloroplasty (Image D). Histological examination of the resected specimen showed benign small bowel mucosa with gastric foveolar metaplasia and nodular proliferation of Brunner glands, consistent with Brunner's gland hyperplasia, with no evidence of dysplasia or malignancy. The patient recovered well and was discharged home.
Discussion: Brunner's gland hyperplasia (BGH) is a rare benign tumor of the duodenum. Though often asymptomatic and incidentally found, BGH can present with gastrointestinal bleeding or anemia. Diagnosis is sometimes challenging because simple endoscopic biopsies are often negative, requiring either histologic examination after endoscopic or laparoscopic polypectomy, depending on the tumor size and clinical stability.



[2573] **Figure 1.** (A) EGD image shows an ulcerated polypoid mass occupying the duodenal bulb with evidence of active bleeding. (B) A coronal CT scan image shows the duodenal mass in the second portion of the duodenum (endoscopy proved the mass to be pedunculated in nature & originating from the bulb. (C) EUS image shows a heterogenous hypoechoic mass arising from the muscularis mucosa and submucosa with intact muscularis propria. (D) Duodenal polyp specimen post laparoscopic resection.

S2574

Back to Basics: A Case of Refractory Obscure Gastrointestinal Bleeding Due to Jejunal Leiomyoma

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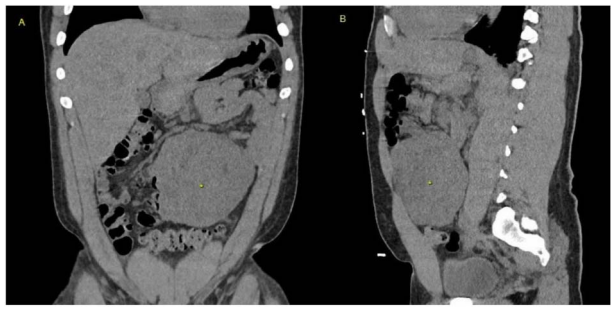
Introduction: In the context of an acute gastrointestinal (GI) bleed, endoscopy is often first line as it allows for both diagnostic and therapeutic interventions. In comparison to non-invasive imaging techniques, such as red blood cell (RBC) scintigraphy or computed tomography angiography (CTA), colonoscopy and esophagogastroduodenoscopy (EGD) allow for direct visualization and treatment. However, in the case of obscure GI bleeding, imaging is a valuable tool in a gastroenterologist's arsenal and may guide therapeutic intervention. We present a case of refractory, obscure GI bleeding due to a large jejunal leiomyoma.
Case Description/Methods: A previously healthy 32-year-old man was admitted from the emergency department due to rectal bleeding and anemia. CBC revealed a microcytic anemia with a hemoglobin level of 7.7 g/dL. The patient was physically active with a history of heavy alcohol use. He underwent thorough endoscopic evaluation including EGD, colonoscopy, and push enteroscopy without an identifiable cause of bleeding. A capsule endoscopy identified active bleeding within the mid-distal small intestine. A subsequent single balloon endoscopy was unremarkable. The patient's hemoglobin stabilized, and he was sent home with follow-up. Two months later, he presented with persistent GI bleeding and a hemoglobin of 5.0 g/dL. At this time, a CTA of the abdomen and pelvis revealed a 15 cm × 13.5 cm × 8 cm left-sided

abdominal mass adjacent to the jejunum (Image). Ultrasound guided biopsy confirmed the diagnosis of a leiomyoma. Due to recurrent bleeding and the extent of the mass, he underwent surgical resection and recovered without incident.
Discussion: This case highlights the importance of including non-invasive imaging techniques in the diagnostic tool kit in the evaluation of refractory, obscure bleeding. Non-invasive modalities, such as a RBC scintigraphy and CTA of the abdomen and pelvis, while significantly limited by sensitivity, are essential in cases of refractory obscure GI bleeding when endoscopic evaluation is unrevealing. Here we describe a patient who had a persistent, obscure GI bleed due to a leiomyoma invading the jejunal wall, which was discovered through CTA, despite undergoing scope imaging.



[2574] **Figure 1.** Computed tomography scan images of abdomen showing the 15 cm × 13.5 cm × 8 cm leiomyoma in a coronal view (A) and sagittal view (B).

S2575

Banding the Heart: Endoscopic Variceal Ligation-Induced Bradycardia

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Introduction: Endoscopic variceal ligation is one of the preferred methods for treating esophageal variceal bleeds. Thus far in the literature, bradycardia is not a well-documented complication of endoscopic band ligation. Here-in we present a unique case of endoscopic band ligation induced marked bradycardia.
Case Description/Methods: A 42-year-old male with a history of alcohol cirrhosis presented to our facility after having three episodes of frank hematochezia. At presentation, blood pressure was 84/49 mmHg and heart rate was 94 beats per minute. Hemoglobin was 5.2 g per deciliter and rectal exam was notable for melanotic stool. Two units of packed RBCs were transfused, hemodynamic resuscitation was achieved, and an octreotide drip was started. Overnight, the patient's heart rate remained in a range of 80's to 90's beats per minute. Upon endoscopic examination, the patient was found to have four columns of grade III varices in the mid and distal esophagus, at the gastroesophageal junction, and the gastric cardia. Three bands were placed and the patient was transfused with two additional units of packed RBCs intraoperatively. The patient was returned to ICU with no immediate complications. During the procedure, the patient's heart rate remained stable in a range of 80 to 100 beats per minute. Post-operatively in the ICU, the patient's heart rate slowed to a range of 32 to 40 beats per minute. ECG confirmed sinus bradycardia overnight and the octreotide was subsequently decreased to 25 micrograms per hour, eventually being discontinued due to persistent bradycardia. Within 24 hours the patient's heart rate began to rise and within 72 hours, the patient's heart rate equilibrated to a range of 60 to 80 beats per minute. The patient was successfully discharged in normal sinus rhythm and followed up in the outpatient setting.
Discussion: Deglutition syncope is a type of syncope which is proposed to be induced by vagal nerve activation during the process of swallowing and has also been described following variceal band ligation. Due to the entry of the vagus nerve into the abdomen via the esophageal hiatus, vagus nerve stimulation via band ligation may be a mechanism by which bradycardia is induced in patients undergoing endoscopic variceal ligation. In this case report we suggest that the location of variceal band ligation, specifically near the GE junction, may cause vagally induced bradycardia.

S2576

Application of Hemospray for Metastatic Bleeding Gastric Adenocarcinoma: A Case Report

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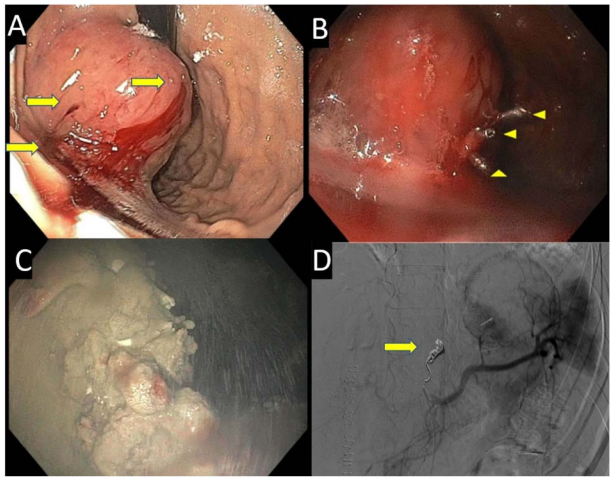
Introduction: TC-325 hemostatic powder (Hemospray) is a mineral-based topical agent that acts as a mechanical barrier over a bleeding site. It is a non-invasive, safe, and effective modality in controlling active GI bleeding, with immediate response. Here, we present a case of bleeding metastatic gastric adenocarcinoma managed with Hemospray after the failure of standard endoscopic therapy.
Case Description/Methods: A 64-year-old male presented to the emergency room (ER) for symptomatic anemia. His hemoglobin was 4.6 g/dL. CT imaging showed gastric cardia lesion with multiple hepatic metastases. After blood transfusion, EGD (Figure 1a) showed a cardia lesion with oozing blood from multiple sites. Endoscopic ultrasound with fine-needle aspiration, showing atypical cells. The patient continued to have melena requiring transfusions. CT angiogram was negative. Partial gastrectomy was not performed due to peritoneal carcinomatosis. Endoscopic hemostasis with epinephrine and clips failed (Figure 1b). Hemospray was deployed (Figure 1c) with an immediate response. Later patient underwent left gastric artery embolization (Figure 1d), liver biopsy and peritoneal node sampling that suggested metastatic adenocarcinoma with primary gastric malignancy. The patient and his family opted for palliative care and was discharged.
Discussion: Gastric cancer accounts for 2-8% of overall UGIB and 58% bleeding risk compared to other GI malignancies. There are no specific guidelines and only limited evidence was available on managing malignancy-related UGIB. Nonresponsive, inoperable metastatic gastric cancer bleeding is challenging and extremely difficult to manage using conventional hemostasis techniques. Based on our case, we recommend utilizing Hemospray as a first-line, monotherapy or in combination to control bleeding until a definitive treatment, reducing morbidity and mortality.



[2576] **Figure 1.** (A) Submucosal gastric fundal mass distal to gastroesophageal junction with blood oozing from multiple sites (arrows), (B) Image showing endoscopic hemostatic clips placement (arrowheads), (C) Application of Hemospray over the Gastric Mass after unsuccessful attempts using standard-of-care hemostatic methods, (D) Showing embolization of the left gastroepiploic artery.

S2577

Are We Overlooking Small Bowel Diverticular Bleeds? Emergency Partial Jejunectomy After Massive Jejunal Diverticular Bleed

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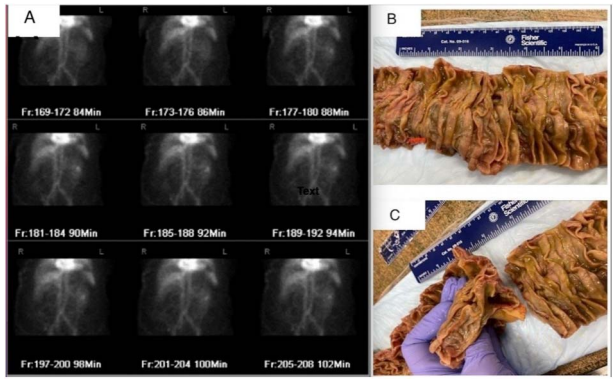
Introduction: The incidence of small bowel diverticula based on autopsy and radiographic results is reported to range from 1-3%. Small bowel diverticula are most commonly located in the jejunum. As with colonic diverticula, it is a disease of the elderly. Severe life-threatening complications of small bowel diverticula including perforation, volvulus, hemorrhage, diverticulitis, and intestinal obstruction have been reported in 10-30% of cases. We present a difficult case of jejunal diverticular bleed requiring emergency surgery.
Case Description/Methods: An 80-year-old male presented to the emergency room three times over the period of 14 days complaining of bright red blood per rectum. He underwent CT scan of his abdomen and pelvis with contrast and colonoscopy during his first two presentations. Imaging was unremarkable with colonoscopy revealing blood throughout the colon, with no evidence of active bleed and a non-bloody terminal ileum. Six days after his second hospital discharge, the patient presented to the ED complaining of dizziness and melena. He was hypotensive and anemic (Hb 6.7 mg/dl). Nuclear tagged RBC scan was significant for focal labeled RBC accumulation in the left upper to the middle quadrant of the abdomen, with activity increasing in intensity over time and dissipating as the study progressed, indicating an active bleeding site, likely in the proximal jejunum. Emergency laparotomy was performed, multiple wide mouth bleeding diverticula within 60 cm of proximal jejunum were found. The affected segment of the jejunum was resected and a primary anastomosis was created. The patient recovered well post op and was eventually discharged to subacute rehabilitation (Figure 1).
Discussion: Although small bowel diverticular bleeds are rarely encountered, it should remain under the differential, especially if a source of bleed is not identified on upper endoscopy (EGD) or colonoscopy. As in our case, repeat procedures may be performed resulting in a delay in diagnosis. Radiologic bleeding scans such as CT angiogram and/or RBC scintigraphy could help diagnose small bowel diverticular bleeding, preventing unnecessary workup. Patients presenting with repeat or persistent brisk rectal bleeding despite negative EGD/Colonoscopy should be considered for imaging to rule out small bowel diverticular bleed.



[2577] **Figure 1.** (A) Beginning at approximately 88 minutes after injection of a radiotracer, there is focal labeled red blood cell accumulation in the left upper quadrant of the abdomen. This activity increases in intensity over time and dissipates as the study progresses. These findings are compatible with an active bleeding site, likely in the proximal jejunum. (B and C) 60 cm of resected proximal jejunum with multiple wide mouth diverticula.

S2578

Case Report on a Rare Malignancy: Anorectal Melanoma

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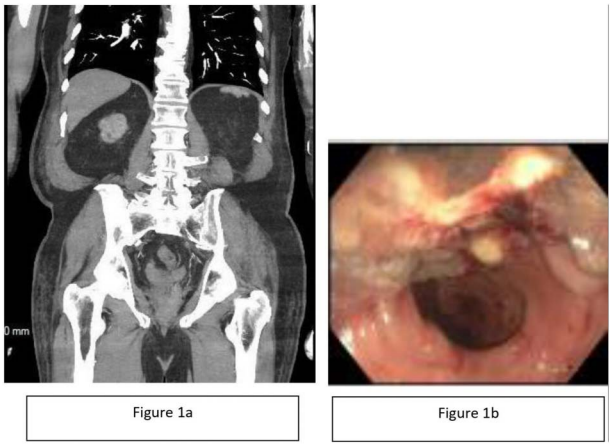
Introduction: Melanoma of the rectum is an extremely rare disease. The median survival rate is 2-5 years. Current treatment for this aggressive cancer is resection if possible and consider adjuvant or neoadjuvant radiotherapy; immunotherapy in nonresectable cases. Given the rapid spread of disease due to its submucosal growth and metastasis pattern, there is low success rates with treatments.
Case Description/Methods: An 84-year-old male presented to the emergency department with an acute COVID-19 infection. The patient was also found to have gram-negative septicemia on blood cultures, so a CT abdomen/pelvis was performed (Figure 1a). The CT showed rectal wall thickening. A flexible sigmoidoscopy was planned for a future outpatient visit after recovering from his acute infection. The patient, however, developed an acute onset of dyspnea and had a high probability V/Q scan while in the hospital. He was started on anticoagulation, and shortly after starting therapy the patient developed bright red rectal bleeding. Due to the new onset of rectal bleeding it was decided to expedite the sigmoidoscopy. The sigmoidoscopy was performed in the hospital showing an ulcerated partially black pigmented non-

obstructing medium-sized mass that was partially circumferential involving one-third of the lumen (Figure 1b). A biopsy of the lesion was taken using cold-forceps. The pathology stained positive for S100 consistent with melanoma. The diagnosis of anorectal melanoma was made, and colorectal surgery was consulted. The patient was deemed not to be a surgical candidate secondary to age and active COVID-19 infection. Oncology was consulted, and it was decided to start the patient on radiation and immunotherapy with a PD-1 inhibitor.
Discussion: The symptoms of anorectal melanoma can be subtle and in this case report completely asymptomatic. Symptoms to be aware of are rectal bleeding and tenesmus. Diagnosing melanoma on sigmoidoscopy can be challenging as most tumors are not pigmented. Biopsies should be taken and sent for immunohistochemical staining for S100, if positive the patient should have a PET scan. Treatment choices for the tumor are based on staging. In a resectable tumor sphincter-saving local excision with radiotherapy to the site of the tumor and the pericolic and inguinal lymphatics is recommended. For unresectable tumors or tumors with distant metastasis, immunotherapy with PD-1 inhibitors (nivolumab and ipilimumab) is an emerging treatment choice.



[2578] **Figure 1.** CT scan and sigmoidoscopy of Rectal Melanoma.

S2579

Colonic Varices: What Are the Therapeutic Options?

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Introduction: Colonic varices are a rare case of lower gastrointestinal bleeding (LGIB) with an incidence of 0.07%. The most common sites of colonic varices are the rectum and cecum. Colonic varices are diagnosed on colonoscopy, mesenteric angiography, or computed tomography (CT) scans. Currently, there are no standardized treatments for treatment of colonic varices due to the heterogeneity in localization and vascular anatomy. We present a case of LGIB due to an ascending colon varix.
Case Description/Methods: A 38 year-old-man with a history of decompensated alcoholic cirrhosis complicated by esophageal and gastric variceal bleed requiring balloon-occluded retrograde transvenous obliteration one month ago was transferred from an outside hospital (OSH) for liver transplant evaluation and hematochezia. He underwent a colonoscopy at the OSH which showed an ascending colon varix with white nipple sign. His vital signs were normal. His physical exam was benign except for scleral icterus with spider angiomas on his chest. His labs were pertinent for a hemoglobin of 8.0, hematocrit 24, platelet 50,000, alanine aminotransferase 50, total bilirubin 3.0, and international normalized ratio 2.0. The patient was treated with octreotide infusion and antibiotics for spontaneous bacterial peritonitis prophylaxis. A CT three phase abdominal imaging was revealed significant perisplenic and ascending colon varices with smaller varices supplying the descending colon. The case was reviewed with interventional radiology and hepatology and the patient underwent transjugular intrahepatic portosystemic shunt (TIPS) placement with coil and plug embolization of the splenic varix and gonadal varix feeding into the ascending colon varix. The patient did not have any further episodes of hematochezia and his hemoglobin stabilized. A few days later, the patient underwent an orthotic liver transplant. His post-operative clinical course was uncomplicated.
Discussion: This is a rare case of a colonic varix resulting in a clinically significant LGIB. There is no standardization of therapy for ectopic varices due to the heterogeneity in vascular anatomy. Therapeutic options include endoscopic variceal band ligation, cyanoacrylate injections, surgery, TIPS and coil embolization. This case highlights the importance of a multi-disciplinary approach with gastroenterologists, hepatologist, interventional radiologists, and surgeons for the treatment of colonic varices.

S2580

CMV Ileitis: An Unusual but Important Cause of Acute GI Bleeding in COVID-19 Patients on ECMO

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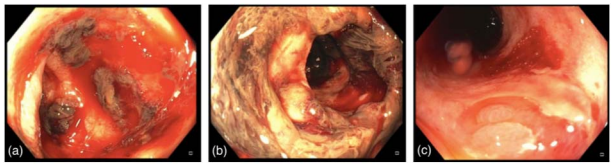
Introduction: Cytomegalovirus (CMV) can affect many organ systems including the gastrointestinal tract. There are few cases that report ileal involvement due to CMV in patients with COVID-19 on ECMO. To our knowledge, these are two of the first documented cases of hemorrhagic CMV ileitis in patients with COVID- 19 who received extracorporeal membrane oxygenation (ECMO).
Case Description/Methods: Case 1: A 55-year-old male with hypertension, asthma, gastro-esophageal reflux disease and gout was hospitalized for worsening acute hypoxemic respiratory failure secondary to COVID-19 requiring ECMO. Progressive lactic acidosis raised concerns for bowel ischemia. Flexible sigmoidoscopy revealed large amounts of blood and clots, suggestive of colonic ischemia in the rectosigmoid region. The patient developed further gastrointestinal hemorrhage warranting colonoscopy and ileoscopy which revealed areas of extensive ulceration and active bleeding within the terminal ileum (Figure 1a and b). Biopsies were positive for CMV and ganciclovir was initiated. Despite medical intervention, the patient succumbed to multiorgan failure and expired. **Case 2:** A 62-year-old male with hypertension and obesity was transferred to our facility for ECMO in the setting of worsening acute hypoxemic respiratory failure secondary to COVID-19. An episode of melena prompted endoscopic evaluation. EGD revealed ulcerations in the body of the stomach without active bleeding or visible vessels. The patient developed rectal bleeding and colonoscopy revealed moderate amounts of fresh and clotted blood throughout the colon with areas of severe ulcerations in the ileum (Figure 1c). Ganciclovir was started empirically and biopsies subsequently confirmed diagnosis of CMV. The patient developed multisystem organ failure and expired.
Discussion: CMV classically involves the esophagus and colon in those who are immunocompromised. These two cases demonstrate atypical presentations of CMV. Both patients had ileal involvement and neither had a known history of immunocompromise, including negative HIV testing. Earlier in their hospitalizations, both patients received high dose steroids and remdesivir as part of treatment for COVID-19. This raises concern that transient immunosuppression may have led to primary CMV infection or reactivation of previously dormant CMV. Because mortality is high in this population, ileal disease secondary to CMV should be considered as a cause of gastrointestinal hemorrhage in order for therapy to be initiated early.



[2580] **Figure 1.** (a-c) Colonoscopic imaging of mucosal abnormalities of the terminal ileum in patients with CMV. The following figures demonstrate the macroscopic changes to the gastrointestinal tract in those with severe CMV infection. (a and b) Severe mucosal ulceration with active bleeding and old blood within the termite ileum. (c) Focal ulcerations with visible vessels and fresh blood within the terminal ileum.

S2581

Colonic Dieulafoy's Lesions: An Elusive Source of Gastrointestinal Bleeding

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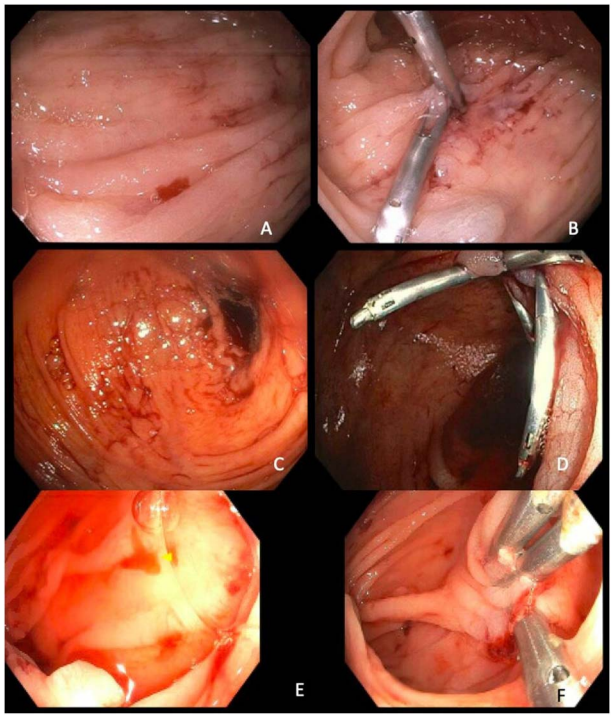
Introduction: Dieulafoy's lesions (DL) are abnormally dilated submucosal vessels, protruding out of minute erosions in the gastrointestinal (GI) mucosa. They are responsible for less than 2% of acute GI bleeding and are relatively rare to find in the colon. While recent advances in endoscopy allow for better detection of DL, subtle intermittently bleeding lesions may easily be overlooked. Thus, DL can be challenging to diagnose, and its true incidence remains unknown. In this series, we present three cases of GI bleeding due to colonic DL.
Case Description/Methods: Case 1: A 42-year-old woman with renal disease on hemodialysis presented with one month of generalized weakness, melena, and a three-point hemoglobin drop from baseline. During esophagogastroduodenoscopy, she developed acute onset hematochezia and hemorrhagic shock. A small focus of active extravasation at the hepatic flexure was identified on CT angiography but subsequent angiography performed by interventional radiology was negative for active extravasation. On colonoscopy, an actively bleeding DL in the hepatic flexure was identified. Two hemostatic clips (HC) were successfully placed with no further bleeding. **Case 2:** A 66-year-old man with congestive heart failure, admitted with cardiogenic shock developed intermittent episodes of hematochezia requiring packed red blood cells (pRBC). On colonoscopy, he was found to have an actively bleeding DL at the cecum. Despite four HC and hemostatic spray, his bleeding persisted, and he underwent successful embolization, guided by clip location. **Case 3:** A 90-year-old man with coronary artery disease presented with two weeks of melena and a four-point hemoglobin drop from baseline. He was transfused three units of pRBC and on colonoscopy, an actively bleeding DL was found at the hepatic flexure. Three HC were placed with cessation of bleeding.
Discussion: Colonic DL, although rare, can cause life-threatening GI hemorrhage. Patients may be asymptomatic or present with melena, hematochezia, or bright red blood per rectum. At present, endoscopy is the preferred diagnostic modality for DL followed by angiography. The endoscopic management of colonic DL primarily involves epinephrine injection, clipping, and/or laser coagulation to achieve hemostasis. Interventional radiology or surgical intervention may be required in severe or refractory cases. It is imperative to maintain a high index of suspicion for colonic DL to arrive at an accurate diagnosis and initiate prompt treatment (Figure 1).



[2581] **Figure 1.** (A) Case 1 Colonic DL in the hepatic flexure (B) Case 1 post-clipping (C) Case 2: Colonic DL in the caecum (D) Case 2 post clipping (E) Case 3 Colonic DL in the hepatic flexure (F) Case 3 post clipping.

S2582

Colonic Adenocarcinoma-Induced Gastroenteropathic Varices Causing Massive GI Bleed: Rare but a Serious Manifestation to Consider

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Introduction: Varices located in other regions than the esophagogastric areas are called Ectopic Varices. Gastroenteropathic varices are a rare manifestation of severe portal hypertension (HTN) caused by cirrhosis. Malignancy can contribute to the pathophysiology of portal HTN which is less commonly seen. We present a case of a patient with profuse rectal bleeding requiring massive transfusions due to ectopic varices predominantly caused by Colonic Adenocarcinoma induced Portal HTN.

Case Description/Methods: The patient is a 61-year-old male with a past medical history of significant colonic adenocarcinoma with widespread metastasis s/p chemotherapy and radiation who was admitted to the hospital for another round of chemotherapy but the course was complicated by profuse anemia secondary to gastrointestinal bleed (GI). Esophagogastroduodenoscopy (EGD) showed small varices with portal hypertensive gastropathy. Colonoscopy showed rectosigmoid arteriovenous malformation status post argon plasma coagulation, diverticulosis, and rectal clot with no active bleeding. The patient required massive transfusion of 11 units of packed red cells due to continued bleeding. Nuclear Medicine (NM) scan was positive for a small bowel bleed. It was presumed that portal HTN caused continued bleeding of possible small bowel telangiectasias. Computed tomography angiography revealed extensive umbilical varices with small jejunal varices pointing towards portal hypertensive gastroenteropathy as the cause of Gl bleed. The transjugular intrahepatic portosystemic shunt (TIPS) procedure was unsuccessful complicated by superior mesenteric artery embolization. The patient was managed with octreotide drip, proton pump inhibitor, and transfused as needed. Gl bleed was successfully contained and the patient was discharged home with close follow-up with gastroenterology and surgery.
Discussion: Gastroenteropathic Varices is a distinct and rare manifestation of severe portal HTN. Cirrhosis is considered to be a common causative factor but colon malignancy can play a major role in it's pathophysiology which is unique to this case. Ectopic Varices cause massive GI bleed with mortality reaching up to 40%. Due to infrequent presentation with limited literature, guidelines on management are deficient and requires further investigation.

S2583

Dedifferentiated Retroperitoneal Liposarcoma Presenting as Upper Gastrointestinal Bleeding

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Introduction: Dedifferentiated retroperitoneal liposarcoma (RPLS) is a rare, biologically heterogeneous tumor that presents with a morphological spectrum and is histologically challenging to diagnose. The tumors typically consist of a single tumor characterized as both poor and well dedifferentiated liposarcoma and non-lipomatous sarcoma. Presentation is typically symptomatic with abdominal pain, ascites, palpable mass, or the rare lower gastrointestinal bleed. Treatment consists of neoadjuvant radiation, surgery, and chemotherapy based on different staging systems used to identify the subtype and histology grade. The success of therapy depends on staging and grading of the tumor. We report a case of dedifferentiated RPLS presenting as upper gastrointestinal bleeding.
Case Description/Methods: A 68-year-old male presented to the emergency department with three days of melena and shortness of breath. On exam, the patient was alert and oriented × 3. Afebrile. Blood pressure was 109/67 and heart rate 95 BPM. Oxygenation saturation of 93% on 3 L of oxygen by nasal cannula. The abdomen was soft, nontender, with a firm mass-like structure palpated in the right upper quadrant. Labs revealed hemoglobin of 7.9. CT imaging showed a large mass abutting the duodenum, right kidney, measuring 18 × 13 × 15 cm. Margin with duodenum very difficult to discern suggesting may be invading or rising from duodenum. Due to anemia with melena and CT findings, an EGD and upper EUS with FNA were completed. EGD revealed a large fundating mass in the third portion of the duodenum with fresh blood and appeared to be causing narrowing of the lumen. EUS revealed a large circumferential periduodenal hypoechoic mass not involving the pancreas. Origin of mass not identified, but appeared soft and vascular. Pathology of the small bowel periduodenum consistent with dedifferentiated liposarcoma, MDM2 FISH- amplified (Figure 1).
Discussion: The patient was evaluated by medical, radiation, and surgical oncology given the pathology confirming dedifferentiated RPLS, grade two. Therapy includes neoadjuvant radiation prior to surgical intervention. Due to the anemia, hemoglobin levels are monitored often. This case indicates that the rarely diagnosed dedifferentiated RPLS can in fact present as an upper gastrointestinal bleed and not as mass effect.

[2583] **Figure 1.** Duodenal Mass with Associated Blood.

REFERENCE

1. Matthyssens LE et al. Retroperitoneal liposarcoma: current insights in diagnosis and treatment, 2015.

S2584

Diffuse Intestinal Amyloidosis Complicated by Pancreatic NET, Splenic Vein Thrombosis With Gastrosplenic Shunt Formation and Bleeding Angioectasias Requiring Total Colectomy

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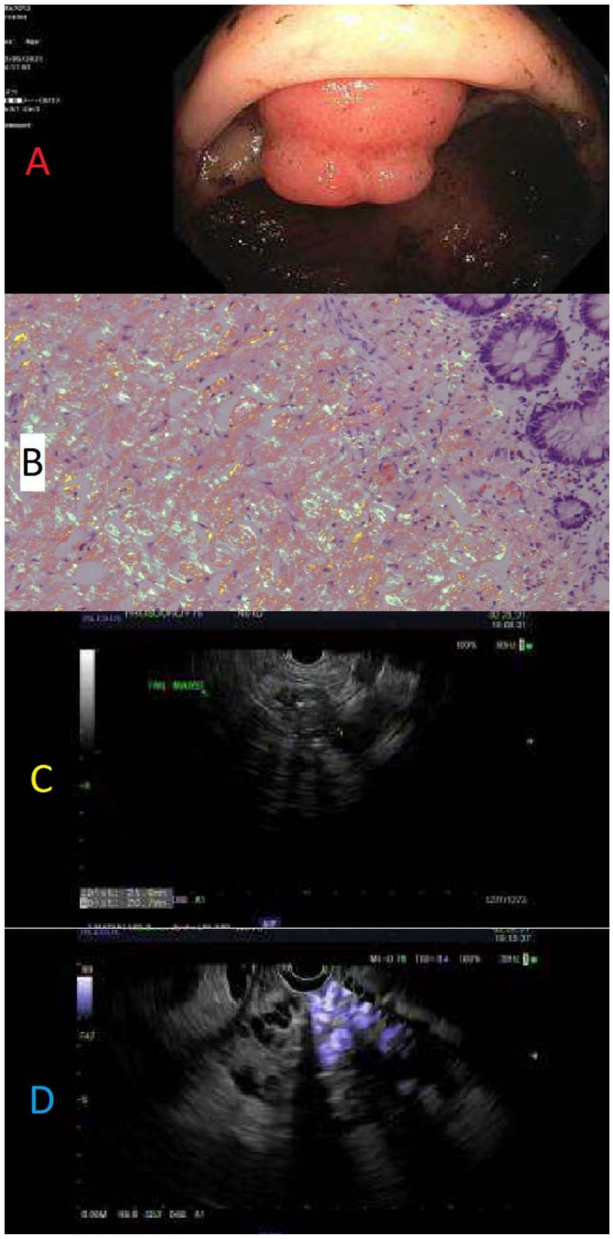
Introduction: Pancreatic Neuroendocrine tumors (pNETs) are endocrine tumors arising from the pancreas and are one of the most common NETs. Splenic vein thrombosis with resulting sinistral hypertension is a rare complication of pNETs causing isolated gastric varices and less commonly portal hypertensive colopathy if portal vein becomes involved. In this case, we present a 78-year-old male with intestinal amyloidosis complicated by pancreatic neuroendocrine tumor (NET), splenic vein occlusion with gastrosplenic shunt formation and gastrointestinal hemorrhage secondary to diffuse colonic angioectasias.
Case Description/Methods: A 78-year-old male with history of ADPKD, CAD, and HTN was initially found to have colonic mass on screening colonoscopy. Biopsies at that time illustrated congo red staining positivity for light chain (AL) amyloidosis. He was maintained on daratumumab in the outpatient setting and remained complication free for nearly two decades. Following a cardiac catheterization with stent placement, patient was started on dual antiplatelet therapy and had resulting hematochezia requiring admission. Colonoscopy showed friable mucosa with ulceration from rectum to cecum as well as ulcerated polypoid lesions. The following year patient was found to have pancreatic tail mass on CT and subsequently underwent EUS with FNA revealing pNET. Clinical course was further complicated by splenic vein thrombosis, large gastrosplenic shunt formation and type II isolated bleeding varices. He ultimately underwent coil embolization with IR and was started on lanreotide injections for pNET. The patient now presented with melenic stools of two days duration. EGD redemonstrated nonbleeding type I isolated gastric varices and colonoscopy revealed numerous actively bleeding colonic angioectasias treated with ablation. Due to persistent hematochezia, CT venogram was performed which demonstrated pneumoperitoneum concerning for perforated viscus. He was seen by colorectal surgery, underwent total colectomy with ileostomy and was eventually discharged to rehab in stable condition (Figure 1).
Discussion: Splenic vein thrombosis is a rare complication of pNETs which can cause isolated gastric varices and is recognized as an important cause of upper GI bleeding. This case highlights a rare complication of pNET whereby a splenic vein occlusion and large gastrospenic shunt eventually involved the portal vein causing true right sided portal hypertension with development of portal hypertensive colopathy characterized by bleeding angioectasias.



[2584] **Figure 1.** (A) Large amyloidoma extruding from terminal ileum (B) Cecum histopathology: Positive congo red stain with apple-green birefringence under polarized light (C) EUS showing 25 mm × 21 mm hypoechoic lesion in pancreatic tail with few calcifications (D) Hypoechoic pancreatic tail lesion with intervening fundal varices preventing biopsy.

S2585

Does Size Matter? A Case Series on Management of Duodenal Varices

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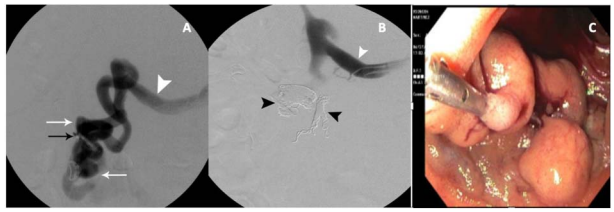
Introduction: Duodenal varices (DVs) are a rare cause of life-threatening bleeding in cirrhotic patients. No standardized guidelines for their management exist. We present two cases of DV hemorrhage who were successfully managed by endoscopic variceal band ligation (EVL) and coil embolization respectively.
Case Description/Methods: Case 1: A 63-year-old male with cirrhosis was admitted for upper GI bleeding and Hemoglobin (hgb) of 7.1. Endoscopy showed small to medium-sized DVs with stigmata of recent bleeding with a platelet plug in the second portion of duodenum. EVL was done with adequate decompression and no immediate bleeding. One week later, he developed recurrent hematochezia. Full GI work up including upper endoscopy, small bowel capsule and colonoscopy showed previously noted non-bleeding ulcers in the duodenum with no new active bleeding sites. **Case 2:** A 68-year-old male with cryptogenic cirrhosis complicated by large hepatocellular carcinoma causing portal vein obstruction was admitted for GI bleeding and hgb of 4.3. Endoscopy showed multiple large DVs with active bleeding. Successful hemostasis was achieved using three hemostatic clips but without adequate decompression. However, given the size of the varix, the patient then underwent successful percutaneous transsplenic porto-venous variceal coil embolization by interventional radiology (IR).
Discussion: Variceal bleeding occurs in 25-30% of cirrhotic patients with ectopic varices accounting for 1-5% of these bleeds. DVs are uncommon but can cause massive hemorrhage with a high mortality up to 40%, due to challenges with treatment. Management options include EVL, sclerotherapy, clipping or IR guided Trans Jugular Intrahepatic Portosystemic Shunt (TIPS), Balloon-Occluded or Coil Assisted Retrograde Transvenous obliteration. One concern with EVL is the size of the DV and risk of re-bleeding. Among case reports using EVL, re-bleeding was seen only in 3/19 cases with hemostasis achieved with repeat banding in 2 out of the three cases. However, for successful band ligation, accessibility, and size of the varices to fit into the banding cap are important factors to consider. Small – medium duodenal varices (case 1) were adequately managed by EVL, however endoscopic decompression could not be completely achieved in large varices (case 2) and eventually required IR guided coil embolization. Therefore, the size and location of the duodenal varices are important factors to be considered in choosing the appropriate management modality for DVs (Figure 1).



[2585] **Figure 1.** A, Percutaneous transsplenic splenic venogram demonstrating large duodenal varix(white arrows) with linear endoscopically placed clip corresponding with site of hemorrhage in the vertical segment of the duodenum (black arrow). The splenic vein (white arrowhead) drains via the large varix as the main portal vein is occluded secondary to hepatic tumor; B, Percutaneous transsplenic splenic venogram demonstrating successful coil embolization of the varix (black arrowheads); C, Endoscopic view of large varices in second portion of duodenum, post hemostatic clip placement.

S2586

Don't Get 2 Comfortable: A Rare Case of Meckel's Diverticulum Causing Hemorrhagic Shock in an Adult

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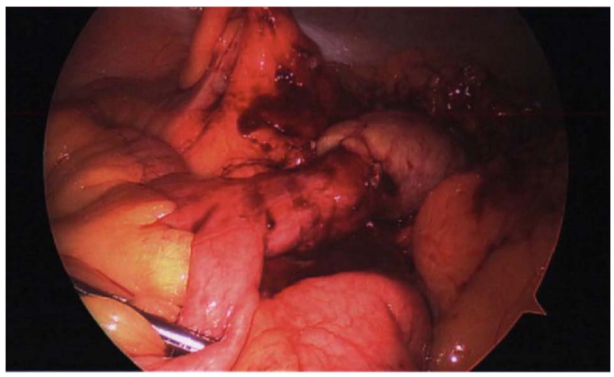
Introduction: Meckel's diverticulum (MD) is a true diverticulum that results from incomplete obliteration from the vitelline duct during embryonic development. It is a one of the most common congenital disorders of the gastrointestinal (GI) tract. Often characterized using "The Rule of 2's": MD occurs in approximately 2% of the population, is 2 inches long, is within 2 feet from the ileocecal valve, is twice as common in males than females, can contain 2 types of tissue (gastric or pancreatic), 2% become symptomatic, and most present before the age of 2. The majority of symptomatic MD occur as painless hematochezia in children and therefore is often lower on the differential of an adult with a GI bleed. Even when MD is suspected as an etiology for GI bleeding in an adult, the evaluation can be challenging.
Case Description/Methods: A 25-year-old male with no significant past medical history was admitted to the hospital for GI bleeding and then developed hemorrhagic shock requiring resuscitation with transfusion of large volumes of blood products. The etiology of his GI bleed remained elusive for several days despite evaluation with upper endoscopy, three colonoscopies, three CT angiograms of the abdomen and pelvis, and a video capsule endoscopy. Subsequently, he underwent two separate fluoroscopic angiograms with interventional radiology. While the first angiogram was unrevealing, the second angiogram demonstrated a tortuous ileal artery branch with active extravasation that was treated with embolization. Given IR findings, a Meckel's scan was performed which was negative. A multi-disciplinary review of the case prompted further review of the patient's abdominal CT angiogram and a potential finding of MD was seen at the distal ileum. Ultimately, the surgery team decided to take the patient to the operating room where they found and resected a segment of small bowel with tissue examination revealing the MD (Figure 1).
Discussion: A Meckel's scan is often considered the modality of choice for diagnosing MD in children, however, its diagnostic accuracy is considered to be much lower in adults. The typical approach to GI bleeding via upper endoscopy, colonoscopy, capsule endoscopy, CT and procedural angiography may be negative, as seen in our case. Balloon assisted enteroscopy, where available, may also be a potentially useful tool for diagnosing MD. This case highlights the importance of maintaining a broad differential diagnosis for GI bleeding and the challenges with current diagnostic modalities.



[2586] **Figure 1.** Meckel's diverticulum at the level of distal small bowel, approximately 60 cm from the ileocecal valve.

S2587

Do Not Forget About the NET: A Case of Gastric Neuroendocrine Tumors Observed in the Setting of Autoimmune Atrophic Gastritis

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Introduction: Neuroendocrine tumors (NET) can arise from various locations in the body. The GI tract and the lungs make up the majority of sites. NET cells produce secretory granules with markers such as chromogranin A and synaptophysin. Individuals with NETs experience the classic carcinoid syndrome with diarrhea, flushing, hypotension, and bronchospasm due to increased serotonin secretion. NETs account for 0.5% of all newly diagnosed malignancies per year. Pre-existing conditions such as pernicious anemia can lead to increased risk for developing such tumors. The relative risk of developing gastric malignancy in patients with pernicious anemia such as the one described in the case is 6.8. Treatment options include endoscopic resection of the polyp(s) with surveillance evaluation every 6 to 12 months.
Case Description/Methods: A 73-year-old female with a history of carcinoid tumor and pernicious anemia secondary to autoimmune gastritis presented complaining of heartburn. The patient underwent endoscopy in 2015 after she was deficient in vitamin B12. Three nodules were found in the stomach body and fundus. Pathology confirmed gastric neuroendocrine tumor. She was referred to gastroenterology. Colonoscopy revealed 3 tubular adenomatous polyps. Endoscopic evaluation yielded chronic atrophic gastritis with loss of parietal cells in the antrum and body. However, in the fundus, fragments of well differentiated neuroendocrine tumor, low grade (carcinoid tumor) were visualized. The cells were chromogranin-A and synaptophysin positive with the Ki-67 index $< 1\%$. PET scan which showed increased uptake in the fundus. Repeat EGD 6 months later revealed multiple erythematous polyps in the fundus which were resected and sent for pathology. Results yielded cells positive again for chromogranin-A and synapticophysin with a Ki-67 index $< 3\%$. Lab work yielded elevated serum gastrin and parietal cell autoantibodies. She was to undergo surveillance EGD in 1 year.
Discussion: NETs arise in various portions of the body. Patients remain asymptomatic or mildly symptomatic, as only a small percentage experience the carcinoid syndrome phenomena. Those with certain risk factors need to be held to closer observation. According to the American Society of Gastroenterology and Endoscopy, every patient with pernicious anemia is recommended to undergo repeat EGD after their diagnosis. Awareness and adherence to these guidelines is important to prevent poor outcomes in those with gastric malignancies.

[2587] **Figure 1.** Neuroendocrine tumor visualized in the fundus of the stomach.

S2588

Duodenal Hemorrhage From Eroding Pancreatic Metastases of Renal Cell Carcinoma

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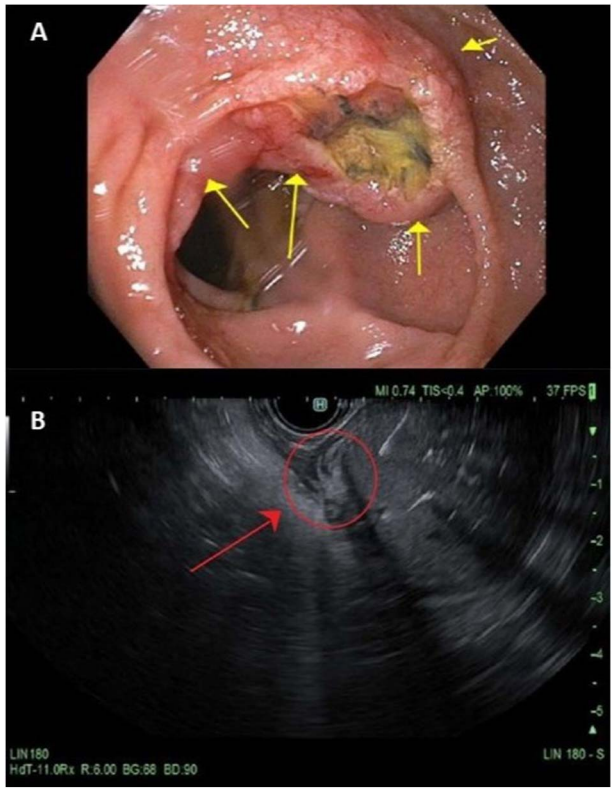
Introduction: Clear cell renal cell carcinoma (RCC) comprises 3% of all adult malignancies and is often diagnosed incidentally. Metachronous metastatic disease can occur even several years after nephrectomy with curative intent. Pancreatic and duodenal metastases from RCC are exceedingly rare. We describe an unusual case of upper GI bleeding from pancreatic RCC metastases eroding into the duodenum, diagnosed over 2 decades following nephrectomy.
Case Description/Methods: A 62-year-old male with a history of clear cell RCC and distant nephrectomy (1999) believed to be in remission, presented to an outside hospital with melena, hemorrhagic shock, and hemoglobin of 5.9 g/dL. EGD revealed a protuberant ulcerated lesion in the post-bulbar region of the second portion of the duodenum with stigmata of recent bleeding, treated with hemostatic clip placement. Due to bleeding recurrence, repeat EGD with epinephrine injection and APC was done but failed to achieve hemostasis, as did subsequent embolization of the GDA by interventional radiology. He was transferred to our institution where he underwent successful embolization of the celiac and superior mesenteric artery branches. CT showed a 4.8 cm pancreatic head mass. Follow-up EGD with EUS demonstrated a hypervascular mass in the pancreatic head eroding into the adjacent duodenum. Fine needle biopsies were consistent with metastatic clear cell RCC. Further staging work-up showed no other lesions, and the patient underwent successful Whipple resection (Figure 1).
Discussion: Metastatic RCC outcomes are poor with 1-year survival less than 50%. Usual sites of RCC metastasis are lung, soft tissue, bone, and rarely, the small intestine or pancreas. Interestingly, pancreatic RCC metastases are frequently found as the only site of metastasis and thus can potentially be managed with surgical resection to improve prognosis. Therefore, prompt recognition and identification of disease extent with EUS and cross-sectional imaging aids in determining feasibility of surgical resection. Unfortunately, early identification is hindered by the asymptomatic nature of pancreatic metastases. In this case, erosion of the pancreatic metastases into the duodenum resulted in life-threatening hemorrhage that led to the appropriate diagnostic work-up, and ultimately, surgical management. This case highlights a rare presentation of metastatic RCC and emphasizes the importance of maintaining a high index of suspicion for metastatic RCC even years after nephrectomy.



[2588] **Figure 1.** Eroding ulcerated mass in the duodenum seen on EGD (A). Pancreatic mass seen on EUS (B).

S2589

Endoscopic Approaches to the Management of Blue Rubber Bleb Nevus Syndrome

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Introduction: Blue rubber bleb nevus syndrome (BRBNS) is a rare but potentially life-threatening disorder characterized by cutaneous and gastrointestinal tract vascular malformations and chronic iron deficiency anemia. Patients present on a spectrum from mild anemia to severe hemorrhage or even intestinal obstruction/intussusception. No standard of care exists for therapy in these patients, and the optimal endoscopic technique for management of arteriovenous malformation (AVM) related bleeding has not been elucidated. Here we present a case illustrating successes of different endoscopic therapies for BRBNS.
Case Description/Methods: A 23 year old lady , diagnosed in her teens with BRBNS, with resultant anemia and bowel obstructions due to AVMs, s/p resections, painful palmar and gluteal lesions s/p resection and digital amputations, presented to discuss therapies for her GI AVMs. Was started on sirolimus by hematology, but unable to take it regularly due to social/financial constraints. EGD 12/17/2020 with gastric and duodenal submucosal blebs/hemangiomas; banded ×2. Diagnosis was confirmed with EUS, Hemoglobin (Hb) was 8.8. The next day, she developed hematemesis/ melena with Hb drop to 5.7. Repeat EGD: post banding ulcers with pigmented material in the gastric body, s/p Argon plasma coagulation. Hb stabilized and patient was discharged. Subsequently, did not have signs of overt GI Bleeding. Upon follow up EGD 02/'21, performed hemostatic injection (with sodium tetradecyl sulphate) of persistent duodenal lesions. In conjunction with this, she was taking her sirolimus more regularly. Subsequently her Hb has uptrended with no further overt bleeding in over a year (Figure 1).
Discussion: Management strategies for BRBNS include antiangiogenic therapies, endoscopic treatments, and even surgical resection. Reports from 1990 to date have described benefit with sirolimus therapy + pre-emptive endoscopic treatment with bipolar cautery, APC, band ligation and sclerosing/hemostatic injection. Surgery is usually reserved as a last resort as lesions can reappear elsewhere along the GI tract. In our patient, due to cost of antiangiogenic treatment, finding an endoscopic approach that worked for her was prudent. Although band ligation was attempted, the resultant bleeding from post-banding ulcers seemed to be even worse than her baseline slow rate of bleeding. Hemostatic injection appeared to be an effective measure for her in tandem with sirolimus therapy.

A. Duodenal Bulb AVM

B. Gastric AVM

[2589] **Figure 1.** Numerous large AVMs dispersed throughout the Upper GI tract.

S2590

Endoscopic Sengstaken-Blakemore Tube Placement for Variceal Hemorrhage: A Case Series

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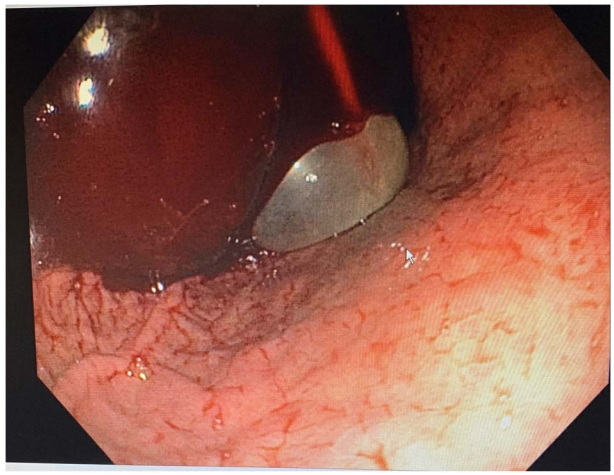
Introduction: Management of brisk variceal bleeding is challenging and nerve-racking for both gastroenterologists and intensivists. When visibility is hampered, a Sengstaken-Blakemore (SB) tube is used to tamponade as a temporary bridge to Transjugular intrahepatic portosystemic shunt (TIPS). Traditionally, the SB tube is placed blindly, or with the help of radiography to confirm gastric balloon location. Catastrophic complications are reported with blind approach including distension of the esophagus or trachea leading to rupture. Endoscopic SB placement has been described in literature as a successful technique. We report 3 cases with successful placement of SB tubes in massive variceal hemorrhage as a bridge to TIPS.
Case Description/Methods: Case 1: A 36-year-old gentleman with alcoholic cirrhosis presented with hematemesis 2 days after undergoing variceal banding. Bleeding post-banding ulcers were confirmed with endoscopy and treated with hemoclips and epinephrine. Despite the intervention, the patient had recurrence of bleeding the following day with hematemesis. Repeat endoscopic intervention was limited due to poor visibility from brisk bleeding. An SB tube was placed endoscopically, and he underwent emergent TIPS that same day. The SB tube was removed 24 hours later with no recurrence of bleeding, and he was discharged to home. **Case 2:** A 68-year-old gentleman with alcoholic cirrhosis and history of variceal bleeding presented with hematemesis. Emergency endoscopy found massive bleeding, however the source of bleeding could not be located. An SB tube was endoscopically placed and an emergent TIPS was performed on the same day. The SB tube was removed 24 hours later with no recurrence of bleeding. After a 10-day hospital stay, he was ultimately discharged to hospice. **Case 3:** A middle-aged woman presented to the hospital with active variceal bleeding. She underwent successful endoscopic SB tube placement as a bridge to TIPS. Although she also had successful placement and no rebleeding, she ultimately succumbed to her disease.
Discussion: Endoscopic SB tube placement is an effective bridge to emergent TIPS due to the improved hemostasis and decreased likelihood of rebleeding. This technique also limits the complications of blind placement, such as inadvertently distending the gastric balloon in the wrong location. Therefore, gastroenterologists should consider endoscopic placement of a SB tube when other endoscopic interventions fail to achieve hemostasis in variceal hemorrhage (Figure 1).



[2590] **Figure 1.** Endoscopic placement of a SB tube, confirming correct placement for hemostasis.

S2591

Fatal Gastrointestinal Hemorrhage Caused by a Two cm Deep Mallory Weiss Tear

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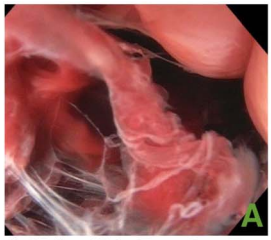
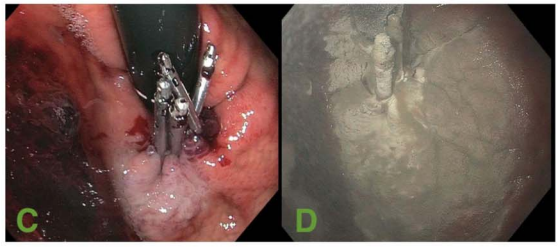
Introduction: Mallory-Weiss syndrome (MWS) is one of the common causes of acute upper gastrointestinal bleeding (UGIB). These tears occur primarily at the gastroesophageal junction. We present a case of a 45-year-old man presenting with acute bright red bloody vomiting and diagnosed with a rapid UGIB from a Deep Mallory Weiss Tear.
Case Description/Methods: A 45-year-old male with unknown past medical history presented to the Emergency Department with bright red blood in the vomitus, going on for the past two days prior to admission. His hemoglobin on presentation was 9.9, INR was 1.2, and platelets were 46. The patient was alert and oriented × 2 on examination. The patient was started on Protonix intravenous drip and an Octreotide intravenous drip. The decision was made to perform an urgent upper endoscopy (EGD) for the patient. There were no previous baseline labs available for this patient. On EGD, a 2 cm bleeding Deep Mallory Weiss Tear was found with active bleeding at the Gastro-Esophageal junction visible in the retroflexion view on the cardia side of the stomach. The spurting area with a visible vessel was successfully injected with epinephrine, and four hemostatic clips were deployed. For further hemostasis, a single hemostatic spray was deployed. Bright red blood was seen in the cardia and fundus, and about 800 cc of blood was aspirated. Post-procedure, the patient was transferred to critical care unit for further care (Figure 1).
Discussion: MWS accounts for 1% to 15% of the causes of upper GI bleeding in adults. The suggested theory is that when the intra-abdominal pressure suddenly and severely increases, the gastric contents rush proximally under pressure into the esophagus. This excess pressure from the gastric contents results in longitudinal mucosal tears, which may reach deep into the submucosal arteries and veins, resulting in upper GI bleeding. Treatment and management consist of performing EGD for the diagnosis and using endoscopic therapies like epinephrine injection, deploying clips, and hemostatic spray to control massive bleeding, as seen in our patient.



A) Mallory Weiss Tear – Deep Tear seen

B) Mallory Weiss Tear s/p Epinephrine injection and Clip



C) Mallory Weiss Tear s/p Epinephrine injection and Clips
D) After application of Hemostatic Spray

[2591] **Figure 1.** Therapeutics done for Deep Mallory Weiss Tear.

S2592

Ethical Decision Making in Endoscopic Treatment of a Jehovah's Witness With Severe Upper Gastrointestinal Bleeding

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Introduction: For endoscopic procedures, informed consent elevates patient autonomy and circumvents medical paternalism. However, when procedures carry significant risk of harm, clinicians may unintentionally overlook patient preferences when making decisions. We present the case of a Jehovah's Witness with upper gastrointestinal bleeding who was offered endoscopic intervention despite a high risk of peri-procedural mortality, with emphasis placed on the shared-decision making process.
Case Description/Methods: A 77-year-old female Jehovah's Witness presented with hematemesis and hemoglobin of 4.9 grams/deciliter (g/dL). Endoscopy demonstrated a duodenal ulcer with a visible vessel. Due to the inability to transfuse blood and risk of provoking further bleeding, the decision was made to forego clipping or cauterization and treat only with hemostatic powder (Figure 1). On hospital day 3 she experienced new melena with decrease in hemoglobin to 2.8 g/dL. Although providers were hesitant to offer repeat endoscopy given her lack of hemodynamic reserve, a nuanced discussion with the patient elucidated her wish to undergo all possible interventions even at high risk of death (Figure 2). Endoscopy was performed despite low hemoglobin, which redemonstrated the duodenal ulcer with a large pulsatile visible vessel. The ulcer was injected with epinephrine and an over-the scope clip was successfully placed (Figure 3). She initially stabilized, however on hospital day 5 she developed recurrent melena with hemodynamic instability. After discussion with her family, she was transitioned to comfort care measures and expired that evening.
Discussion: When faced with the possibility of patient harm, gastroenterologists may intentionally withhold interventions due to a desire to act in what is perceived to be in the best interest of the patient. Ethically, however, acting by omission devalues both patient autonomy and the right to self-determination in care. This effect may be amplified by pre-existing stigma such as with the Jehovah's Witness wherein refusal of blood products may be erroneously interpreted to imply a broader refusal of other life-saving treatments. In this case, through juxtaposition of two procedures, we demonstrate that this phenomenon can be circumvented via thoughtful discussion of all potential options with patients, regardless of physician preference. We hope to highlight the importance of this ethical concept when approaching patients for informed consent.

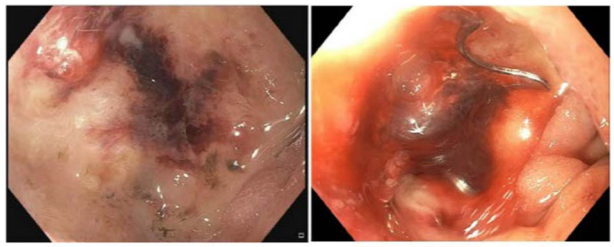
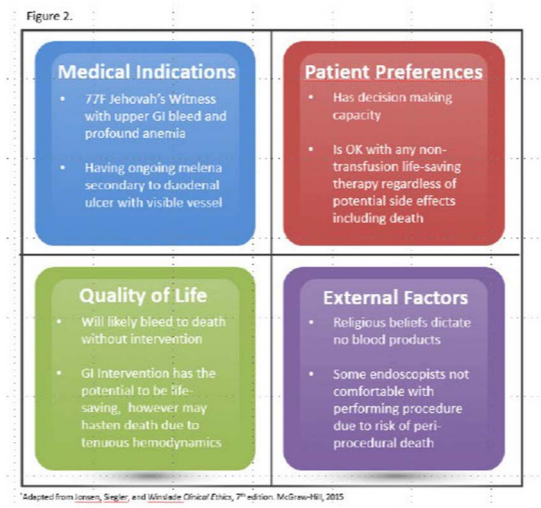


Figure 1 Figure 3



[2592] **Figure 1.** Ulcer with visible vessel on initial endoscopy, treated only with hemostatic powder. (2) Four-box model approach to ethical decision making in this case. (3) Same ulcer on repeat endoscopy, now with a pulsatile visible vessel, treated with an over-the-scope clip.

S2593

Hemorrhagic Shock From a Duodenal Ulcer Eroding Into an Ectopic Varix

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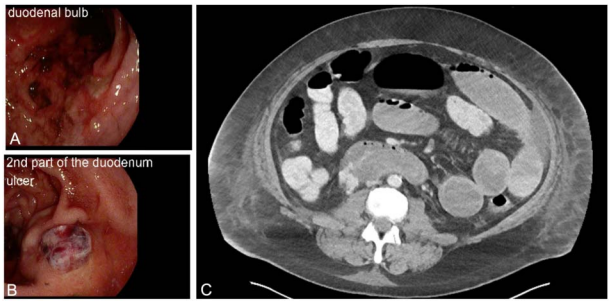
Introduction: Ectopic varices are a rare complication of cirrhosis representing only 1-3% of all varices. Duodenal varices are especially challenging to diagnose and control bleeding with a mortality rate of up to 40%. In patients with cirrhosis, upper GI bleeding that is non-variceal in origin is most commonly due to peptic ulcer disease. Given its anatomic location, the gastroduodenal artery is typically associated with duodenal ulcer bleeding. Here, we report an unusual case of a duodenal ulcer that eroded into an ectopic varix resulting in hemorrhagic shock.
Case Description/Methods: A 47-year-old male with a history of alcohol-related cirrhosis was transferred to our medical intensive care unit for management of hemorrhagic shock secondary to an upper GI bleed. An urgent EGD showed no esophagogastric varices, mild portal hypertensive gastropathy, 3 non-bleeding, clean-based ulcers in the duodenal bulb and 1 ulcer with an adherent clot that was actively bleeding into the 2nd portion of the duodenum. A submucosal epinephrine injection was performed around the bleeding site to achieve hemostasis. The patient underwent celiac and superior mesenteric angiography, which showed no active extravasation, and an empiric coil embolization of the gastroduodenal artery was performed. After two days, the patient developed worsening hypotension with new hematemesis. CT angiography revealed a large duodenal varix with active hemorrhage into the 2nd portion of the duodenum. There was no clear route to access the duodenal varix endovascularly and an emergent TIPS was not recommended due to hemodynamic instability. The decision was made to transition the patient to comfort care and he shortly succumbed to his illness (Figure 1).
Discussion: In patients with cirrhosis, it can be difficult to determine the etiology of an upper GI bleed due to the presence of large portosystemic venous collaterals in the setting of portal hypertension. Ectopic varices located in the duodenum are rare but when bleeding occurs, it is often life-threatening. Although currently there is no definitive treatment, the most effective therapeutic modalities reported in the literature include endoscopic sclerotherapy and band ligation, BRTO and TIPS. Our case highlights the importance of differentiating between variceal and non-variceal bleeding in determining the optimal therapeutic approach to achieve hemostasis. Physicians should remain vigilant for ectopic varices in patients with cirrhosis and peptic ulcer disease due to the risk of variceal bleeding.



[2593] **Figure 1.** A, Endoscopy showing 3 non-bleeding, clean-based ulcers in the duodenal bulb. B, Endoscopy demonstrating a single ulcer with an adherent clot and active bleeding. C, CT angiography showing a large duodenal varix with active hemorrhage into the second portion of the duodenum (red arrow).

S2594

Hematochezia and a Messy Malignant Melanoma

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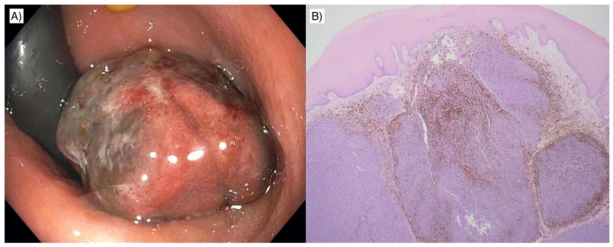
Introduction: Lower gastrointestinal bleeding is a common complaint amongst patients seen in the outpatient setting and carries a wide differential diagnosis. This ranges from benign conditions such as hemorrhoids, angioectasia, diverticulosis, anal fissures, etc., to serious, life-threatening conditions including malignancy. We present a unique case of rectal bleeding caused by anorectal melanoma.
Case Description/Methods: A 50-year-old Hispanic female with history of hypertension presented to her primary care physician for rectal bleeding. She endorsed two months of constipation, decreased caliber of stools, and intermittent hematochezia. Her physical exam revealed a rectal prolapsing mass, and laboratory results revealed a hemoglobin of 12.3 g/dL, unchanged from prior. Due to these findings, she was referred to gastroenterology for evaluation. The patient underwent a colonoscopy which demonstrated a large, non-circumferential, three centimeter, partially obstructing mass in the rectum. The mass appeared to originate from the dentate line. No bleeding was present, however the mass appeared vascular in nature with dark purple areas, suggestive of a large thrombosed hemorrhoid. She was referred to the advanced endoscopists for an endoscopic ultrasound, which showed a hyperechoic mass with internal hypoechoic regions suggestive of necrosis. The endosonographic borders were well defined and the mass appeared confined to the mucosa. Biopsies were obtained and histopathology demonstrated atypical cells with prominent nucleoli and melanin pigment. The cells were positive for MART-1 and SOX10, confirming the diagnosis of malignant melanoma. A CT of the chest, abdomen, and pelvis was negative for lymphadenopathy or metastatic disease. She was referred to colorectal surgery and underwent local excision (Figure 1).
Discussion: Melanoma can arise from the mucosal epithelium of the respiratory, gastrointestinal, or genitourinary tracts in addition to the skin. Mucosal melanoma accounts for approximately 1.3% of all melanoma and usually carries a worse prognosis. Anorectal melanoma accounts for 1% of all anal canal malignancies. Symptoms can include rectal bleeding, anal pain, and change in bowel habits. The diagnosis is often missed as the signs and symptoms can be mistaken for hemorrhoids or polyps. Anorectal melanoma can even appear amelanotic, making the diagnosis more difficult. It is important for endoscopists to consider anorectal melanoma as a diagnosis as early detection and treatment is associated with improved prognosis.



[2594] **Figure 1.** (A) Large rectal mass visualized during colonoscopy (B) Tumor with melanin pigment undermining squamous mucosa (H&E, 20×).

S2595

Gastrointestinal Hemorrhage With Gastritis and Pancolitis as Sole Presentation for Granulomatosis With Polyangiitis Flare

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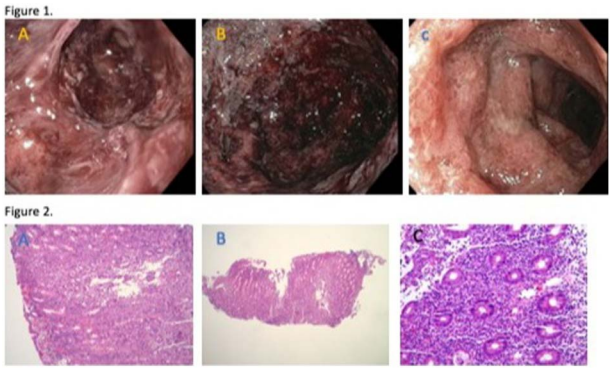
[1]*Cleveland Clinic, Cleveland, OH;* [2]*Cleveland Clinic Foundation, Cleveland, OH;* [3]*Royal Jordanian Medical Services, Amman, Al Karak, Jordan.*

Introduction: Granulomatosis with polyangiitis (GPA) is a rare small to medium vessel vasculitis. Estimated prevalence within the United Stated for GPA is 3/100,000 patients. The disease classically affects the upper respiratory tract, lungs and kidneys. Rarely, the gastrointestinal system is affected. In such cases, it is important to distinguish GPA from mimics, and diagnosis is guided by clinical judgement taken together with histologic analysis.
Case Description/Methods: A 27- year old male with history of GPA who presented with 2 weeks of bloody and black bowel movements associated with abdominal pain and bloody vomiting. Past history was notable for GPA diagnosed in childhood with presence of nasal inflammation, pulmonary nodules and rapidly progressive crescentic glomerulonephritis. Initial laboratory analysis demonstrated leukocytosis to 13.6 k/uL, elevated CRP to 2.5 mg/and elevated Cr to 1.47 mg/dL (baseline 1.07 mg/dL). Abdominal CT scan revealed mesenteric lymphadenopathy, thickening and edema of the gastric antrum, suggestive of gastritis. Stool testing was positive for fecal calprotectin and lactoferrin, and negative for common bacterial pathogens. Serum C3 and C4 were normal, while testing for ANCA antibodies was negative, both on acute presentation and during routine testing previously. Endoscopy revealed striking hemorrhagic inflammation of the stomach, and colonoscopy showed pancolitis throughout examined colon. Gastric and colonic biopsies showed acute mucosal inflammation and non-necrotizing vasculitis, without granulomas. He was started on intravenous methylprednisolone, with rapid resolution of his symptoms thereafter. He was discharged on a prednisone taper and later transitioned to azathioprine therapy.
Discussion: Gastrointestinal manifestations of GPA are rare, with estimated prevalence of 6-7% of GPA patients. Gastrointestinal vasculitis causes inflammation with resulting end organ ischemia, leasing to a wide spectrum of clinical presentation. Predominantly intestinal manifestations are described, including mesenteric ischemia and bleeding. Thus, GI manifestations are associated with higher vasculitis severity on scoring indices, higher need for surgery and increased mortality. Interestingly, absence of granulomas on biopsy of the GI tract does not appear to be atypical. An important differential for gastrointestinal GPA is Crohn's disease. Due to the paucity of data, current guidelines do not provide recommendations on management of GI manifestations on ANCA-associated vasculitis (Figure 1).



[2595] **Figure 1.** (1) Endoscopic findings on endoscopy and colonoscopy. A and B, Hemorrhagic gastritis found on endoscopy. Diffuse severe hemorrhage with adherent blood and clots was found on the entire examined stomach. C, Colitis found on colonoscopy. The entire examined colon was characterized by diffuse severe inflammation with adherent blood, edema, erosions, erythema and granularity.

[2595] **Figure 2.** A, B, Gastric mucosa. C, Colonic mucosa. The gastric oxyntic-type and colonic mucosa revealed an unusual pattern of chronic active gastritis and colitis with neutrophilic mediated epithelial injury in the form of glandular micro abscesses, cryptitis, crypt abscesses and vasculitis. No granulomas are identified. A *Helicobacter pylori* immunostaining was performed on the gastric biopsy, and it was negative.

S2596

Gastro-Splenic Fistula: A Rare Cause of Upper Gastrointestinal Bleeding

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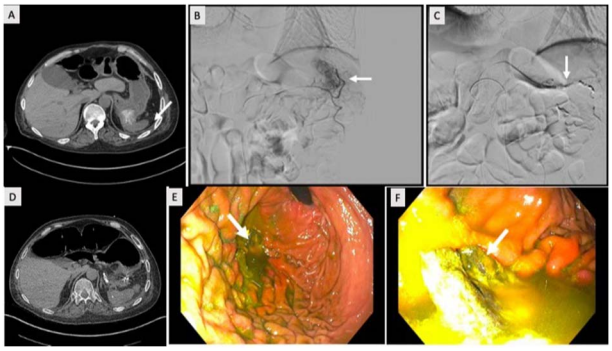
[1]University of Missouri, Columbia, MO; [2]MedStar Union Memorial Hospital, Baltimore, MD; [3]MetroHealth System, Case Western Reserve University, Cleveland, OH; [4]Jacobi Medical Center, Albert Einstein College of Medicine, Bronx, NY.

Introduction: Gastrosplenic fistula (GSF) is a rare entity. Reported etiologies of GSF are splenic or gastric malignancies, splenic abscess, Crohn's disease, gastric ulcers, and abdominal trauma. Here, we present a case of GSF from gastric ulcer resulting in life threatening bleeding.
Case Description/Methods: A 41-year-old man with history of oculodentodigital dysplasia, spastic paraplegia, sacral decubitus ulcers with diverting sigmoid colostomy presented with malaise and melenic stools through colostomy. On arrival at ER, he was tachycardiac (113/min), with BP 126/82 mmHg. His Hgb was 4.9 g/dL. CT angiography of the abdomen/pelvis was negative for active contrast extravasation, however, revealed direct contiguity between the gastric fundus and spleen indicating GSF. Patient was resuscitated with IV fluid and required multiple blood transfusions. Splenic artery (SA) angiogram showed hyperemia along the posterior wall of the stomach corresponding to CT scan findings. Embolization of the main SA, right gastroepiploic, and left omental artery was performed. EGD showed benign inflammatory mass in the gastric fundus with invasion of splenic tissue into the gastric mucosa. Gastric biopsy was negative for H. pylori and malignancy, however, revealed mild chronic inflammation and reactive gastropathy. Partial gastrectomy and splenectomy were performed. Operative findings were consistent with a large type V gastric ulcer at the fundus with direct extension into the spleen. He was discharged to rehab after a prolonged hospital course (Figure 1).
Discussion: We present a case of GSF in the setting of type V gastric ulcer which is a rare entity. Gastric biopsies were negative for malignancy, PUD, splenic abscess, or Crohn's disease indicating the idiopathic nature of GSF. Early embolization of splenic vessels is required in hemodynamically unstable patients followed by radical surgical resection such as splenectomy and gastrectomy. A high index of clinical suspicion is required for early identification and management of GSF as massive hemorrhage results in high rate of mortality.



[2596] **Figure 1.** CT angiogram (A) shows wedge shaped defect between gastric fundus and spleen indicating gastrosplenic fistula (arrow). Angiography of the splenic artery (B) shows extravasation of blood along the posterior wall of the stomach corresponding to the site of ulceration on the CT scan. Splenic artery angiogram after Gelfoam slurry, coil, and Amplatzer embolization (C). CT abdomen/pelvis after embolization of the main SA, right gastroepiploic, and left omental artery (D). EGD shows a large benign gastric tumor in the gastric fundus, consistent with splenic tissue invading the gastric mucosa (E and F).

S2597

Gastrointestinal Hemorrhage From Hepaticojejunal Varices: A Rare Complication of Pancreaticoduodenectomy

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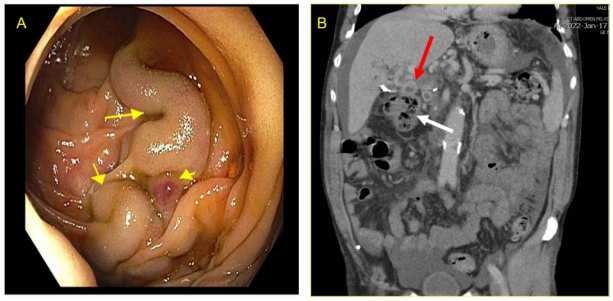
[1]Sidney Kimmel Medical College at Thomas Jefferson University, Philadelphia, PA; [2]Yale New Haven Hospital, New Haven, CT.

Introduction: Ectopic varices are portosystemic collaterals that form outside the esophageal-gastric region and frequently pose a diagnostic and therapeutic challenge. Rarely, bleeding from ectopic varices can occur as a complication of pancreatic surgery. We describe a case of gastrointestinal bleeding from ectopic hepaticojejunal varices after pancreaticoduodenectomy.

Case Description/Methods: A 66-year-old man with a history of intraductal papillary mucinous neoplasm (PMN) with high-grade dysplasia status post Whipple procedure two years previously, presented to the hospital with melena. His Whipple procedure had been complicated by splenic vein thrombosis and disease recurrence, necessitating further debridement three months prior to presentation. On examination, his vital signs were stable and there were no stigmata of liver disease. His laboratory tests were notable for a hemoglobin 8.0 g/dL (from baseline of 11 g/dL), platelets 174 × 109/L, BUN 29 mg/dL, INR 1.0. He initially underwent EGD and colonoscopy, which were unremarkable. A second look endoscopy was performed and deep intubation of the afferent limb revealed ectopic varices with stigmata of recent bleeding at the hepaticojejunostomy (Panel A). Cross-sectional imaging demonstrated a patent splenic vein but chronic occlusion of the portal and proximal superior mesenteric veins with cavernous transformation, extensive upper abdominal varices and splenomegaly (Panel B). There was no clinical or radiologic evidence of cirrhosis. After multidisciplinary discussion, an endovascular approach was deemed technically infeasible given extensive chronic mesenteric thrombus and a surgical approach was deemed prohibitively high-risk. The patient ultimately underwent endoscopic injection of 2-octyl cyanoacrylate into the ectopic varices and has remained without recurrent bleeding in over 5 months of follow-up.

Discussion: Hemorrhage from ectopic jejunal varices following pancreatic surgery has previously been described in only a few case reports. Given the potential for vascular injury and local inflammation, these procedures can result in mesenteric venous thrombosis with subsequent ectopic variceal formation. If present, defining the vascular supply of varices with early multi-disciplinary involvement is paramount to their management. Multiple treatments have been reported, including portal venous stenting, embolization, and local sclerotherapy or cyanoacrylate injection as in this case.



[2597] **Figure 1.** (A) Ectopic varices (yellow arrows) are noted in the afferent limb at the hepaticojejunostomy. (B) Coronal view of computed tomography scan of abdomen demonstrating large upper abdominal collaterals (red arrow) that drain close to the afferent limb (white arrow).

S2598

Gastric Kaposi Sarcoma Presenting as Acute Upper Gastrointestinal Hemorrhage in a Heart Transplant Patient

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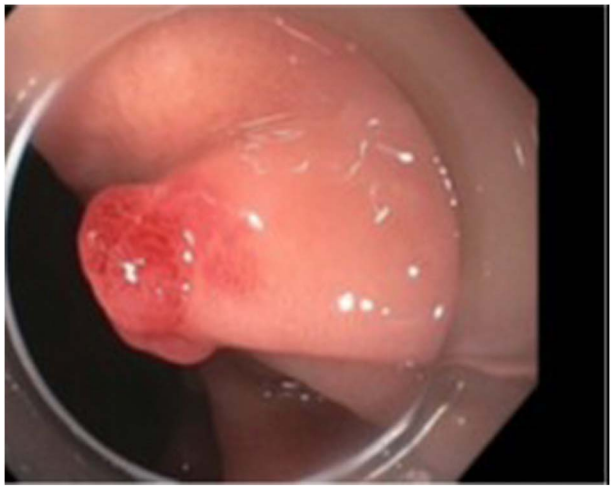
Introduction: Kaposi sarcoma (KS), a multifocal neoplasm of lymphatic cells, occurs more often in organ transplant patients, and its pathogenesis is related to use of immunosuppressive (IS) medications. Acute gastrointestinal hemorrhage due to KS is exceedingly rare and has never been reported in a heart transplant patient. We report a case of KS presenting as gastrointestinal hemorrhage in a heart transplant patient whose bleeding resolved with supportive care and treatment of his underlying KS.

Case Description/Methods: A 63-year-old man originally from Sudan with a history of non-ischemic cardiomyopathy requiring heart transplant on IS presented with melena and acute anemia. Medical history included cutaneous KS of the right leg diagnosed 1 year following transplant previously treated with paclitaxel and in clinical remission. He was treated with intravenous proton-pump inhibitor and blood transfusions. EGD showed a patch of nodular mucosa on the lesser curvature of the stomach. Pathology of the nodule showed dilated capillaries with spindle cells in the lamina propria, and staining for human herpesvirus-8 (HHV-8) was positive in the spindled cells, supporting a diagnosis of recurrent KS. He had no further bleeding, hemoglobin stabilized, and he was discharged. He was resumed on paclitaxel for recurrent KS after discharge and had no further bleeding (Figure 1).

Discussion: We report a case of KS presenting with GI bleeding in a patient on chronic IS following heart transplant. While GI bleeding from KS has been reported in renal transplant recipients, this is the first such report we are aware of in a heart transplant patient. The GI tract is a common site of visceral involvement in KS, and presentation can include vomiting, diarrhea, and occult blood loss. Overt GI bleeding in KS is rare. Endoscopic appearance varies from flat lesions to polypoid or nodular growths, and histopathology shows spindle cells positive for HHV-8. Management of GI bleeding in KS depends on severity, and in less severe cases, the role of endoscopy is to confirm the visceral spread of KS with biopsy. Thereafter, management includes IS reduction and chemotherapy for refractory disease. Though KS is a rare cause of overt GI bleeding, it should be considered in patients with immunodeficiency or on chronic IS, and biopsy for suspicious lesions should be performed to confirm diagnosis.



[2598] **Figure 1.** Lesser curvature gastric nodule.

S2599

Gastroduodenal Artery Aneurysm: When Endoscopy Is Not the Answer

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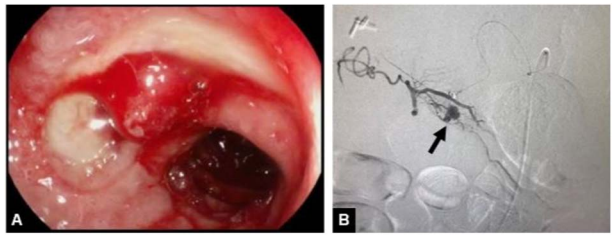
Introduction: Gastroduodenal artery aneurysms (GDAAs) are rare with high mortality rate. We present a patient with massive gastrointestinal (GI) bleeding found to have gastroduodenal artery pseudoaneurysm.
Case Description/Methods: A 75-year-old woman with hypertension, diabetes, sleep apnea, and prior stroke presented with fatigue, nausea, and decreased appetite. Vital signs and physical exam were normal. Hemoglobin (Hgb) was 13.2 grams per deciliter (g/dl). Nine days later, she developed abdominal pain and melena. Vital signs and physical exam were normal, Hgb was 11.8 g/dl, and computed tomography angiography (CTA) was normal. Esophagogastroduodenoscopy (EGD) showed duodenal ulcer with visible vessel, treated with epinephrine injection (epi) and hemoclips. Melena recurred eleven days later. Repeat EGD showed duodenal bleeding with poor visibility, prompting transfer to our hospital. EGD at our facility showed hemi-circumferential deep ulcer and arterial spurting in the distal duodenal bulb, treated with epi and hemoclips resulting in initial hemostasis but then continued bleeding (Figure 1A). She developed pulseless electrical activity arrest but was resuscitated. Mesenteric angiogram showed a 0.8 × 0.8 centimeter distal gastroduodenal artery pseudoaneurysm with extravasation requiring embolization with 2-4 millimeter interlock coils (Figure 1B). There was no further bleeding and she was discharged.
Discussion: GDAAs account for 1.5% of visceral arterial aneurysms, which include true aneurysms and pseudoaneurysms (PAs). True aneurysms arise from vessel wall abnormalities such as degenerative or atherosclerotic processes, fibromuscular dysplasia, or collagen vascular diseases. PAs arise from vascular insults such as trauma, iatrogenic injury, or inflammation. The risk of GDAA PA rupture is as high as 75%. GDAAs may be asymptomatic or present as GI bleeding, abdominal pain, gastric outlet obstruction, or a pulsatile abdominal mass. CTA is the initial imaging of choice given high sensitivity, availability, and promptness. Mesenteric angiography is the diagnostic gold standard and allows for therapeutic intervention with endovascular embolization, which has superior outcomes compared to open surgical ligation. Follow-up imaging is necessary to look for aneurysm reperfusion, seen in 9-15% of cases. GDAA rupture is a difficult yet crucial diagnosis to make given mortality rate up to 21%.



[2599] **Figure 1.** A, Duodenal ulcer with actively spurting visible vessel. B, Mesenteric angiogram shows gastroduodenal artery pseudoaneurysm with extravasation of contrast (black arrow).

S2600

Gastric Mucormycosis: A Case of a Rare Infectious Cause of Upper GI Bleeding

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Introduction: Gastric mucormycosis is a rare clinical entity that mandates upper endoscopic evaluation and specific histopathologic findings for a diagnosis. Due to its non-specific clinical presentation, it poses a diagnostic challenge for providers. We present a case of gastric mucormycosis in a critically ill and immunosuppressed patient that was discovered in the setting of evaluation of upper gastrointestinal bleeding.
Case Description/Methods: A 66-year-old man with a history of a kidney transplant two years prior, with a recent diagnosis of post-transplant lymphoproliferative disorder (PTLD) and who had recently undergone an initial round of R-CHOP chemotherapy four weeks prior was admitted to the hospital with altered mentation and neutropenia. His hospital course was prolonged with multiple cardiac arrests in the setting of septic shock from his profound neutropenia. He was noted to have dark blood from his nasogastric tube and a concomitant drop in his hemoglobin, for which the Gastroenterology service was consulted. He underwent urgent upper endoscopic evaluation and was found to have both significant clot in his stomach and an ulcerated fungating lesion along the greater curvature of the stomach which was biopsied. Pathology results showed fungal organisms with special GMS stain showing morphologic features consistent with mucormycosis. The Infectious Diseases service was urgently consulted and he was started on triple anti-fungal therapy with amphotericin, micafungin and posaconazole. Otolaryngology evaluated the patient due to these endoscopic findings, with laryngoscopy negative for head and neck involvement of this infection. Surgery was consulted for evaluation of subtotal gastrectomy, but he was deemed an unsuitable surgical candidate. The patient eventually succumbed to this and passed away during his hospitalization.
Discussion: Gastric mucormycosis is a rare infection that often manifests in the setting of immunosuppression as seen in solid organ transplant recipients or in patients with diabetes. The most often clinical manifestation is upper gastrointestinal bleeding, and thus endoscopic evaluation is part of the work-up to exclude other diseases that could mimic its presentation. This diagnosis often results in fatal outcomes, so early recognition is critical for both medical management with anti-fungal therapy, along with surgical management given the high failure rate of medical management alone for this diagnosis.

S2601

Gastroepiploic Pseudoaneurysm: A Shocking Complication of PEG Tube Placement

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Introduction: Percutaneous gastrostomy (PEG) tubes are commonly used for enteric feeds and medication administration. While considered safe and routine, PEG tube placement is not without its complications. Here we present a rare case of hemorrhagic shock secondary to traumatic pseudoaneurysm formation after PEG tube placement.
Case Description/Methods: A 52-year-old male with atrial fibrillation on apixaban and a recent stroke with PEG tube placement 1 month prior to arrival presented to the hospital with multiple episodes of hematemesis. CT angiography of the abdomen was unremarkable and negative for signs of active bleeding. Antiplatelets were held and anticoagulation was reversed with prothrombin complex concentrate. Esophagogastroduodenoscopy showed signs of erosive esophagitis with proper PEG tube placement but without signs of active bleeding. Hematemesis re-occurred less than 24 hours after anticoagulation was resumed, with subsequent development of hemorrhagic shock. Visceral arteriogram revealed a right gastroepiploic artery pseudoaneurysm, which likely developed from trauma during recent PEG placement. The patient stabilized after coil embolization and blood transfusion. He was then safely resumed on anticoagulation without further bleeding.
Discussion: GI bleeding associated with PEG placement occurs in 0.6-1.2% of cases, and usually occurs at the gastrostomy tract or from gastric ulceration. Bleeding related to pseudoaneurysm formation is exceedingly rare with only a handful of case reports documenting such occurrence. While contrast enhanced imaging may aid in the diagnosis, small pseudoaneurysms may not be detected with noninvasive angiographic studies (as was the case here). Given this potentially life-threatening complication, clinicians must consider pseudoaneurysm formation as part of their differential for GI bleed after recent PEG placement especially if endoscopic evaluation is unrevealing.

S2602

Gastric Leiomyosarcoma: A Rare Case of Upper GI Bleeding

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Introduction: Leiomyosarcoma (LMS) is a tumor arising from parts of the body containing smooth muscle cells such as the uterus, stomach and walls of blood vessels. Primary gastric leiomyosarcomas are extremely rare, accounting for 0.1%-3% of gastrointestinal malignancies. They can be differentiated from Gastrointestinal Stromal Tumors (GIST) based on immunohistochemical staining that is positive for desmin and SMA and negative for staining of KIT (CD 117), CD 34, and DOG1.1. LMS is usually asymptomatic but can present with anorexia, weight loss, nausea, vomiting, or bleeding. Here we present a rare case of an aggressive LMS manifesting as hematemesis and melena.
Case Description/Methods: A 76-year-old male with a past medical history of Hypertension, Bladder Cancer and Prostate Cancer presented with a chief complaint of three days of hematemesis and melena. Upper Esophagogastroduodenoscopy (EGD) done five months prior was notable for an esophageal ulcer and gastritis. Labs on admission were notable for Hg of 10.3. EGD was performed which showed a large polypoid mass at the gastroesophageal (GE) junction. Biopsies were notable for smooth muscle cells that tested positive for SMA and caldesmon but negative for desmin, CD34, CD117 and DOG-1 most consistent with leiomyosarcoma. Ultimately, the patient underwent surgical resection of a 8.5 × 7.2 × 3.3 cm tumor with negative surgical margins and no evidence of lymphovascular invasion. The patient did well post-operatively and has been following with oncology for further management (Figure 1).

Discussion: Prior to 1998, gastrointestinal stromal tumors (GIST) were misdiagnosed as LMS due to lack of molecular markers. Since then there are only 10 reported cases of gastric leiomyosarcoma in the post-GIST era. On CT imaging LMS tends to show up as irregular central zones of low attenuation suggestive of extensive necrosis or hemorrhage. Endoscopically, LMS tends to appear mainly in the muscularis propria with increased vascularity and a heterogeneous appearance. For tumors greater than 2 cm surgical resection is the preferred method of treatment. For metastatic disease, however, there has been no clear benefit of adjuvant chemotherapy as there is a high risk of recurrence. Routine follow up for completely resected tumors consists of abdominal and pelvic imaging which should occur every three to six months for two to three years, and then annually. In conclusion, we highlight a rare case of an aggressive type of Leiomyosarcoma at the GE junction presenting as an upper GI bleed.

Figure 1

Figure 2

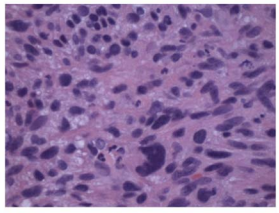

Figure 3

[2602] **Figure 1.** (1) Upper Endoscopy showing mass lesion at the gastroesophageal (GE) junction. (2) Axial computed tomography (CT) image showing mass lesion in the gastric cardia (3) Spindle cells with marked atypia, necrosis, rare mitosis and moderate pleomorphism (H and E, x20)

S2603

Gastrointestinal Bleeding as the Primary Manifestation of Extranodal Large B-Cell Lymphoma

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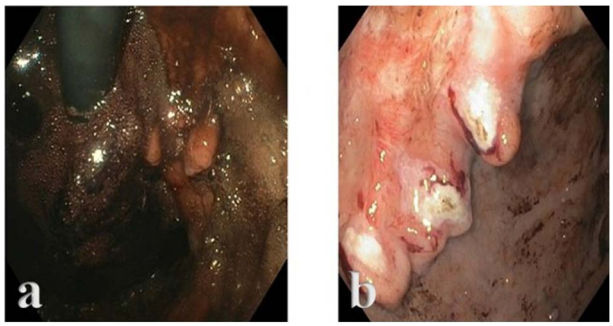
Introduction: Diffuse large B-cell lymphoma (DLBCL) is the most common form of aggressive non-Hodgkin lymphomas (NHLs) in the United States. NHL accounts for 4% of US cancer diagnoses, and incidence has increased by 168% since 1975. We report a rare case of massive GI bleeding caused by gastric large B cell lymphoma.
Case Description/Methods: A 76-year-old lady, with a past medical history significant for breast cancer status post right mastectomy and chemoradiation, presented to the emergency department with 2 episodes of hematemesis and 1 episode of melena with associated dizziness. She was found to be hypotensive with a hemoglobin of 6.2 g/dl. She was admitted to the intensive care unit where she was stabilized and intubated. The patient underwent an esophagogastroduodenoscopy which showed multiple bleeding gastric nodular masses, controlled with hemostatic spray. The biopsy indicated a large B cell lymphoma with IRF4 rearrangement with no MYC/IGH fusion and no rearrangement of MYC, BCL2, or BCL6. A fluorodeoxyglucose (FDG) PET/CT confirmed an intensely FDG avid mural thickening and nodularity of the partial intrathoracic stomach consistent with gastric DLBCL. On bone marrow biopsy, no morphologic features of involvement by lymphoma were noted. The patient was referred to Oncology, with plans to start chemotherapy with the RCHOP regimen (rituximab, cyclophosphamide, doxorubicin, vincristine, and prednisone).
Discussion: DLBCL is the most common lymphoma, accounting for about 25% to 30% of all the NHLs. It typically presents as a rapidly growing mass or enlarging lymph nodes in a nodal or extra-nodal site. Patients with gastrointestinal (GI) involvement usually report epigastric pain, dyspepsia, and/or weight loss for a duration ranging between a few weeks to several years. Bleeding and perforation are rare initial presentations or accompanying symptoms of NHLs. Nonetheless, massive GI bleeding can increase the morbidity and mortality risk of DLBCLs (Figure 1). Lymphoma-related GI bleeding is difficult to control with conventional endoscopic hemostatic techniques, such as argon plasma coagulation, electrocautery, and mechanical hemostasis. Hemospray can be used for initial hemostasis in high-risk cases as a temporary measure allowing sufficient time toward more definitive therapy.



[2603] **Figure 1.** (a) Multiple bleeding gastric nodular masses concerning for a malignancy (b) Bleeding controlled with a hemostatic spray.

S2604

Hark the Herald Bleed

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Introduction: An Aortoenteric fistula (AEF) is a rare, life-threatening condition with a reported incidence of 0.007 per million (with 250 cases reported in the literature). These fistulae present with what has been coined a "Herald Bleed," indicating that a benign presentation of Gastrointestinal hemorrhage will likely be followed by catastrophic bleeding. Secondary AEF, more common than primary or denovo fistulae, is the development of a fistula after abdominal aortic aneurysm (AAA) repair. As expected, most fistulae are found in the duodenum due to the anatomical proximity of prior AAA procedures. On occasion, endoscopic confirmation of an AEF is requested, presenting an added risk to a condition with a mortality rate above 45% in the first month.
Case Description/Methods: A 70-year-old female with a pertinent past medical history of antiphospholipid syndrome, seven prior strokes, and known iron deficiency anemia with hematochezia presented to the emergency department with altered mental status. The patient required several units of blood, thus GI was consulted for further evaluation and planned for endoscopy and colonoscopy. Unfortunately, the

patient was unable to tolerate bowel preparation and, in the meantime, developed severe sepsis secondary to an infected aortoiliac bypass graft with a likely fistulous communication between the right limb of the bypass graft and inflamed loop of the small bowel as seen on Computed tomography. Vascular surgery was consulted and requested endoscopic confirmation of the AEF prior to surgical intervention. The aortic graft was seen, via endoscopy, with stigmata of bleeding between the second and third part of the duodenum. The patient then had multiple discussions with her multidisciplinary team and family but ultimately decided not to pursue surgical repair due to mortality risk. She elected for comfort care, was discharged home, and passed within weeks (Figure 1).

Discussion: AEF is an incredibly rare condition with a significant mortality rate. Our patient was able to undergo endoscopy and receive diagnostic confirmation. This provided her with the necessary information to decide on further treatment. Diagnosis of AEF remains difficult due to its rarity and we hope that greater awareness of this devastating disease will result in further guidelines concerning diagnosis, management, and improved outcomes.

[2604] **Figure 1.** Endoscopic image demonstrating the source of Gastrointestinal bleed and Aortic graft visualized in the Duodenum.

S2605

GI Amyloidosis: A Case of Congo Red Staining and Anemia

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Introduction: Gastrointestinal amyloidosis (GIA), is a protein deposition disorder. It represents a complex common pathway that encompasses multiple etiologies and presentations. Within the GI tract, amyloid deposition occurs in the muscularis mucosae, within close proximity to vasculature, nerves, and nerve plexuses. This deposition increases the frailty of blood vessels, hinders intrinsic peristalsis and decreases the compliance of the gut wall. We are presenting an interesting case where GI amyloidosis was discovered while evaluating for chronic anemia.

Case Description/Methods: Patient is a 71 year old female with a clinical history remarkable for hypertension, hyperlipidemia, pre-DM, who was referred to GI in order to evaluate a suspected GI source for her chronic anemia and now presents to the endoscopy unit for an upper endoscopy. The EGD showed a normal appearing esophagus and GEJ, mild non-specific gastritis, scattered erythema in the stomach or antrum, small area of hyperplastic fold appearance in the gastric body, s/p cold biopsy for histopath evaluation, and a normal appearing duodenum. Patient subsequently underwent a colonoscopy in which a suspicious lesion, flat and pale, 7 mm in size was identified at 55 cm from the anal verge. Cold biopsy was taken to evaluate for histopath correlation of a suspected polyp. In addition a moderate sized rectal flat polyp with a depressed center, measuring 18 mm (Paris IIc), concerning for a dysplastic lesion vs neoplastic lesion was found and another cold biopsy was taken for further evaluation. The two specimens underwent congo red staining and demonstrated amyloid deposition in the mucosa/submucosa. Patient was recommended for further evaluation for systemic amyloidosis via diagnostic tests including serum and urine protein electrophoresis, serum/urine free kappa and lambda light chain analysis, etc.

Discussion: Gastrointestinal amyloidosis (GIA) results from the deposition of insoluble extracellular protein fragments that have been rendered resistant to digestion. GIA can be acquired or genetic, and most commonly results from chronic inflammatory disorders. The deposition of abnormal proteins interferes with gastrointestinal tract (GI) organ structure and function, most notably in the liver and small bowel. Presentation from GI involvement includes cirrhotic sequelae, abdominal pain, malabsorption, and GI bleeding. In our patient's case, it could explain her diagnosis of chronic anemia.

S2606

Hematochezia as a Rare Presentation of Primary Colonic Diffuse Large B-Cell Lymphoma

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Introduction: Diffuse large B cell lymphoma is the most common subtype of non-Hodgkin's lymphoma with localization seen only in approximately 20% of patients. Gastrointestinal localization of extranodal disease is extremely rare. We present a case of an 82-year-old female who presented with occult lower gastrointestinal bleeding as the primary presentation leading to the diagnosis of diffuse large B cell lymphoma (DLBCL).

Case Description/Methods: An 82-year-old female with a past medical history of partial colectomy with colostomy reversal secondary to diverticulitis presented to the hospital for bright red blood per rectum with the passage of blood clots. She had a negative screening colonoscopy 5 years prior to admission. Upon evaluation, the patient was found to be in hemorrhagic shock resulting from acute blood loss. Colonoscopy and EGD showed mild gastritis, colitis, and a deformed cecum due to previous postoperative changes. Despite packed red blood cell transfusions, the patient remained anemic and developed pancytopenia on hospital day 4. Abdominal CT imaging demonstrated thickened loop of bowel with small to borderline-enlarged mesenteric lymph nodes adjacent to the area of bowel wall thickening. Given her history, lymphadenopathy was considered to be reactive vs. metastatic in nature while biopsies from the colonoscopy were pending. Once hemodynamically stable, the patient was discharged with appropriate f. Final biopsy results of the ascending colon confirmed a diagnosis of diffuse large B cell lymphoma (DLBCL), negative for the t(8;14) translocation or MYC/IGH fusion per FISH analysis. Chemotherapy with cyclophosphamide, vincristine, and prednisolone (CVP) was initiated.

Discussion: Although hematochezia in an elderly patient is a cause for malignant workup, it is a rare presentation of hematologic malignancies. Most commonly, extranodal DLBCL is seen to involve the gastric mucosa in the event that the gastrointestinal system is involved at all. Common sites of manifestation include the spleen, thymus, and lymphoid aggregate tissue in the neck. Studies have demonstrated that extranodal disease is correlated with older patient populations as well as a poorer performance score when compared to nodal disease. This case illustrates the need of considering a broad differential inclusive of hematologic malignancy when assessing a patient with lower gastrointestinal bleeding, particularly in elderly patients with associated transfusion-resistant anemia.

S2607

Hemorrhagic Shock as a Complication of Meckel's Diverticular Bleed

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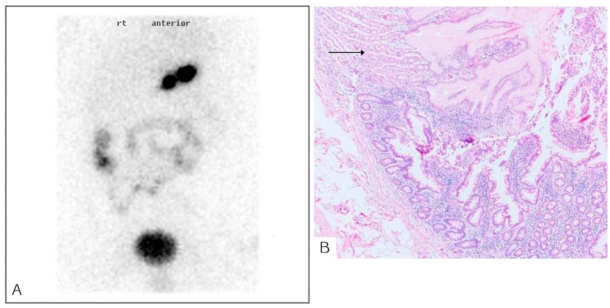
Introduction: Meckel's diverticulum (MD) is the most common congenital abnormality of the gastrointestinal tract resulting from a failure of vitelline duct obliteration. While often presenting with painless hematochezia in children, MD can less frequently occur in adults but with severe and rare complications, including obstruction, perforation, or hemorrhage. We present a case of an 18-year-old male who presents with hemorrhagic shock from a MD bleed.
Case Description/Methods: A previously healthy 18-year-old male initially presented to an outside children's hospital with abdominal pain and large volume hematochezia. Physical evaluation revealed orthostatic instability, tachycardia, hypotension, with a documented 900 mL blood loss from the rectum. Hemoglobin level reached as low as 7.1 g/dL prior to receiving 6 units of packed red blood cells, fluids, and initiation of vasopressor support. After medical stabilization, the patient was transferred to our adult facility for higher acuity management. It is noteworthy that the patient presented to the same children's hospital with similar, albeit milder, symptomatology five days prior and colonoscopy and esophagogastroduodenoscopy at the time were nonrevealing. Our CT angiogram did not identify any foci of bleeding. A Meckel's scan (Figure 1A) was obtained to further elucidate etiology, which was positive and revealed a solitary focus of increased uptake located within the right lower abdomen. The patient was transferred back to the children's hospital for laparoscopic diverticulectomy. The surgically resected specimen revealed focal ulceration and pathology confirming gastric heterotropia (Figure 1B). The patient's clinical recovery was subsequently uneventful.
Discussion: Meckel's diverticulum typically presents with painless hematochezia in children, but its presentation can be more severe in the adult population. In fact, complications include obstruction (36.5%), intussusception (13.7%), and hemorrhage (11.8%). As in our case, we suspected the diagnosis given hemorrhage in a healthy young male preceded by an otherwise negative workup as neither upper gastrointestinal endoscopy, colonoscopy, or CT angiography were able to localize the source of bleeding. The diverticulum causes acidic secretions from embedded gastric tissue resulting in ulceration and hemorrhage of adjacent small bowel. Our case was diagnosed radiologically by the 99-mTc-pertechnetate Meckel's scan because of the tracer's affinity to the gastric mucosa, and has a sensitivity of 60% in adults.



[2607] **Figure 1.** A, 99-mTc-pertechnetate scintigraphy image revealing a focal "hot spot" of increased uptake in the patient's right lower abdomen B, Histopathology shows gastric tissue (arrow) embedded within adjacent normal small bowel tissue in the bottom half of the image (H&E stain; ×40).

S2608

Hemospray, a Novel Theraputic Use to Control Rectal Bleeding in a Case of Refractory Hemorrhagic Radiation Proctitis

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Introduction: One long term complication of pelvic radiation therapy is hemorrhagic radiation proctitis. Argon Plasma Coagulation (APC) is the most frequently used thermal coagulation method to control hemorrhage from the rectum's telangiectasias. APC's downsides include difficulty in controlling the position of the coagulation and the depth of the burn may be variable. Other current therapies to control bleeding are Formalin application, cryoablation, and radiofrequency ablation. Hemospray is a novel agent to control large area gastric bleeds or bleeding from malignancies, showing promising results in a small case series in Europe.
Case Description/Methods: Our patient is a 72-year female with refractory hemorrhagic radiation proctitis from high dose radiation treatment for cervical carcinoma. On admission, her vitals were stable and colonoscopy showed diffuse rectal radiation proctitis (Figure 1). APC was performed and hemostasis was initially achieved. However, significant hemorrhage recurred, causing the hemoglobin to fall from 10.5-to 8.8. Halo barrx, another thermal coagulation method, was tried but was unsuccessful in achieving complete hemostasis despite 68 applications of the channel rfa endoscopic catheter. Hemospray, which is traditionally used to treat UGIB was used and was successful in stopping the hemorrhage (Figure 1). The patient was monitored for 3 more days before being discharged from the hospital.
Discussion: Hemospray is generally used for UGI (gastric) and not Lower Gastrointestinal bleeding. It is a novel hemostatic agent, using an inorganic, inert powder, and is very successful in controlling Upper Gastrointestinal Bleed (UGIB). When sprayed at the bleeding area, it forms an adhesive layer in contact with the fluid causing mechanical compression and promoting hemostasis by increasing the concentration of platelets and clotting factors at the bleeding site. It can be used in a wide area of the gastrointestinal mucosa and thus is very effective in controlling bleeding from widespread vascular ectasias. There is no systemic absorption and toxicity associated with its use. It also does not damage the underlying mucosa with cautery. Studies have been done to evaluate its use in UGIB but not so in LGIB. A small case series done in Europe showed that using Hemospray is also feasible in LGIB. Considering the success in our case, we recommend further exploring the use of Hemospray for the treatment of persistent radiation proctitis and possibly other causes of LGIB.

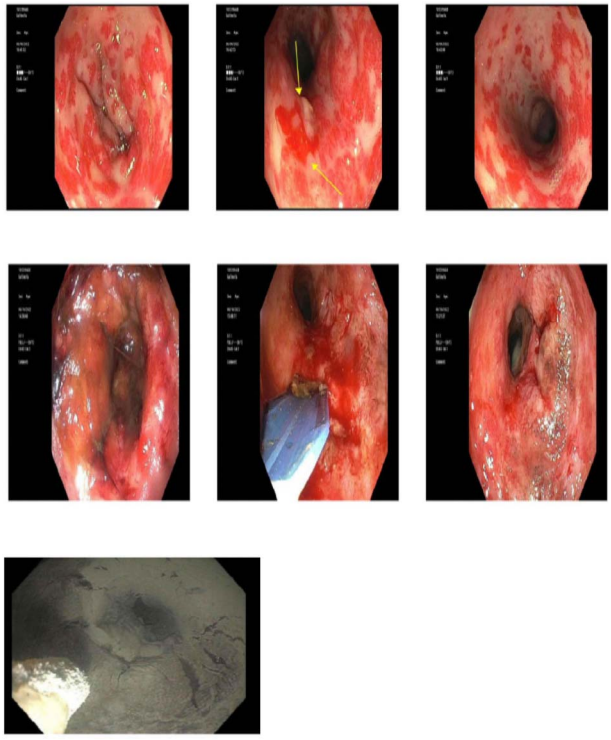

Figure 1.

[2608] **Figure 1.** Top row demonstrates Images in the rectum from the first colonoscopy identifying the bleeding AVM from the radiation proctitis. Second row shows images from the follow up flexible sigmoidoscopy with continued. Bottom row final image shows the results of the hemospray controlling the cessation of bleeding.

S2609

HSP Triggered by Wasp String Presents as Acute GI Bleeding

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Introduction: Henoch-Schonlein Purpura (HSP) is a systemic vasculitis mediated by IgA immunoglobulins. The disease classically affects children with immune-complex deposition around the skin, mucous membranes, and other internal organs. Antibody formation usually follows an inciting factor such as upper respiratory infection, environmental exposures, or medications. The classic tetrad of symptoms in children are palpable purpura in the lower extremities, polyarthralgia, renal compromise, and abdominal pain with bloody diarrhea. Cases with adults, though rare (2 per 100,000), have been reported. We present a case of HSP possibly triggered by a wasp sting.
Case Description/Methods: A 65-year-old female presented to the ED with a rash on her left leg with associated edema. Two days prior, she was stung by a wasp in her left lower extremity. She was discharged with topical steroids and then developed a pruritic rash in her bilateral lower extremities ascending to the back of her trunk and diffuse abdominal pain with diarrhea. She returned to the ED with an elevated CRP (40) and WBC (14.4). CTA abdomen showed diffuse enteritis without ischemia. GI pathogen profile was negative and sigmoidoscopy revealed congested, erythematous eroded mucosa at the splenic flexure but with no signs of bleeding. Endoscopy showed multiple linear and circumferential non-bleeding duodenal ulcers with no stigmata of bleeding. A rare diagnosis of HSP in an adult was considered given the palpable purpura in her lower extremities, polyarthralgia, and abdominal pain with bloody diarrhea. This was supported by a skin biopsy of her rash that was positive for perivascular IgA deposits. She was started on IV steroids with rapid improvement and was discharged with a two-week steroid taper.
Discussion: The etiology of HSP in adults is linked to a variety of triggers including: URI, medications, HIV, hepatitis B and autoimmune and environmental factors. Our patient denied recent infections, new medications or autoimmune disorders but had suffered a wasp sting the day before her rash developed. Bee stings are a known trigger in children, but there are no reported cases of wasp stings resulting in HSP in adults. HSP is a common IgA-mediated vasculitis in children, but a rare disease in the adult population. Cohorts studied are limited to children and risk factors for adults need further study. Our patient demonstrated that wasp stings can be a potential trigger for HSP and further monitoring for similar cases in the adult population is warranted.

S2610

Huge Pain in the Behind: Radiation-Induced Perforation and Bleeding Treated with Hemostatic Spray

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Introduction: Prostate brachytherapy with radiation is an effective treatment for localized prostate cancer. While generally well tolerated, radiation-associated proctopathy with resultant lower gastrointestinal (GI) bleeding is a common complication of this treatment. Rarely, prostate brachytherapy can result in rectoprostatic fistulae. There is no standard endoscopic treatment for lower GI bleeding from this complication. Increasingly, hemostatic powders are used as a "bail-out" or temporizing measure to control bleeding when the source is not amenable to other endoscopic interventions. Herein we report a case of successful control of lower GI bleeding from a rectoprostatic fistula using hemostatic spray.
Case Description/Methods: A 78-year-old man with stage IV rectal adenocarcinoma and history of prostate cancer treated with radiation and brachytherapy 20 years ago presented with 4 weeks of intermittent anorectal pain. A contrast-enhanced CT of the pelvis showed air-fluid collections around the prostate contiguous with the rectum. Flexible sigmoidoscopy showed a large solitary rectal ulcer covered in stool and mucous, not requiring any intervention. One month later, he presented with profuse hematochezia. Although he was hemodynamically stable, his hemoglobin decreased to 10.1 g/dL from 13 g/dL. Repeat flexible sigmoidoscopy showed a large, cratered rectal ulcer with adherent clots and active oozing. The prostate, with visible brachytherapy beads, was seen eroding into the rectal wall. Hemostatic spray was successfully deployed to control the bleeding. He ultimately underwent a diverting loop colostomy.
Discussion: The incidence of rectoprostatic fistula after brachytherapy is 0.26-1%. Fistula formation tends to occur within 37 months. Our case is rare in that rectoprostatic fistula after brachytherapy has only once been reported after 37 months, with that case being at 12 years and ours at 20 years. To our knowledge, hemostatic spray has not been used to treat lower GI bleeding from rectoprostatic fistulae. Our experience demonstrates that this could be a viable temporizing measure in this situation. Definitive therapy may involve hyperbaric oxygen, where one patient with rectal perforation from radiotherapy was cured after 5 weeks of 24 sessions. Other considerations may be a diverting colostomy, which occurred in this patient, or proctectomy for more severe cases.

S2611

It Is so Complicated: Pancreatico-Spleno-Colonic Fistula Presenting as Gastrointestinal Bleeding

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Introduction: Gastrointestinal bleeding is common in clinical practice with variable etiology, we present a rare case of pancreatic pseudocyst complicated by spleno-colonic fistula manifesting with brisk hematochezia.

Case Description/Methods: A 50-year-old male with no significant past medical history presented with fever and acute encephalopathy. He subsequently had a prolonged and complicated hospital course with a new diagnosis of Human immunodeficiency virus/Acquired immunodeficiency syndrome, disseminated tuberculosis, and chronic pancreatitis with a pancreatic pseudocyst. During hospitalization, the patient suddenly developed passage of bright red blood per rectum over 48 hours with down-trending hemoglobin. Hemoglobin initially dropped from 9.6 g/dL to 5.0 g/dl (Normal: 12-16 g/dL) and he required multiple units of packed red cell, platelets, and fresh frozen plasma transfusion. The patient underwent a tagged Red blood cell scan with radiolabelled 28.4 mCi of Tc-99 m. Red blood cell tagged Tc 99 m gastrointestinal bleeding scan showed large brisk pooling of the radiotracer in the splenic flexure consistent with significant active hemorrhage in the region of the splenic flexure. There was a retrograde flow of the tracer into the transverse colon and antegrade flow into the descending colon. Retrospective evaluation of the prior CT tomography scans of the abdomen demonstrated possible communication between the pancreatic tail cyst, the spleen as well as the splenic flexure which was the likely source of the GI bleed. The patient had a total of 35 units of packed red blood cells transfused, 8 units of platelets, and 7 units of fresh frozen plasma during his hospital course. The patient failed multiple attempts at Interventional radiology arterial embolization and due to multiple co-morbidities, he was not a candidate for surgical intervention. He later died after 6 months of hospitalization (Figure 1).

Discussion: There have been reported cases of pancreatico-colonic fistula and spleno-colonic fistula, arising from pancreatic pseudocysts and pseudoaneurysms associated with trauma, pancreatitis, and Crohn's disease. Pancreatico-spleno-colonic fistula is a rare and complex entity usually presenting with massive gastrointestinal bleeding. The findings of acute or chronic pancreatitis and pseudocyst with gastrointestinal bleeding should raise the suspicion of possible pancreatico-colonic fistula. Prompt imaging is key to accurate diagnosis and management.

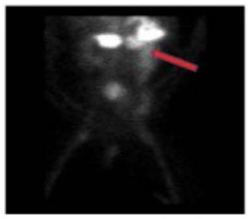
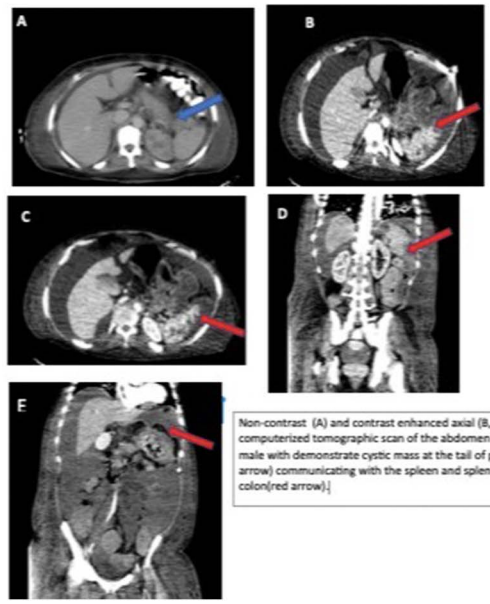


Fig 1 : Tc-99m RBC tagged showing radiotracer in the splenic flexure, transverse colon and the descending colon.



Non-contrast (A) and contrast enhanced axial (B, C) and coronal (D, E) computerized tomographic scan of the abdomen of a 50 year old male with demonstrate cystic mass at the tail of pancreas (blue arrow) communicating with the spleen and splenic flexure of the colon(red arrow).]

[2611] **Figure 1.** Tc-99 m RBC tagged showing radiotracer in the splenic flexure, transverse colon and the descending colon. Non-contrast (A) and contrast enhanced axial (B, C) and coronal (D, E) computerized tomographic scan of the abdomen showing cystic mass at the tail of pancreas (blue arrow) communicating with the spleen and splenic flexure of the colon(red arrow).

S2612

Isolated Renal Cell Carcinoma Metastasis Presenting as a Crated Gastric Ulcer

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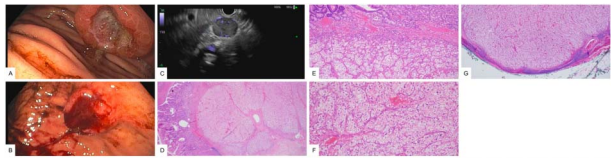
Introduction: Metastatic lesions in the stomach are rare, with autopsy studies showing < 1% rate of involvement. We report a case of recurrent renal cell carcinoma (RCC) in a patient, in remission for 8 years, presenting as an oozing gastric ulcer and celiac lymphadenopathy.
Case Description/Methods: A 66-year-old male with past medical history of RCC post laparoscopic left nephrectomy 8 years ago and hypertension presented to the outpatient clinic with iron deficiency anemia (IDA). Patient's last colonoscopy, 7 months ago, was normal aside from adenomatous polyps. A computed tomography (CT) scan for RCC surveillance from 6 months ago showed a 20 × 18 mm lymph node around the celiac axis. Interventional radiology (IR) guided biopsy of it was inconclusive. A PET-CT showed a 24 × 22 mm lymph node adjacent to the celiac axis with hypermetabolic activity, concerning for nodal metastasis. An EGD with endoscopic ultrasound guided (EUS) lymph node biopsy was performed showing a 20 × 20 mm cratered ulcerated, friable mass in the mid-gastric body along the greater curvature with oozing post biopsy requiring Hemospray (Cook Medical, Bloomington, IN) for hemostasis (Figures 1A and B). EUS showed an 19 × 17 mm ill-defined, hypoechoic, heterogenous gastric body mass involving all layers to the muscularis propria. There was a 25 × 20 mm well defined hypoechoic lymph node in the celiac region with vascularity within it (Figure 1C). Fine needle biopsy (FNB) was performed but inconclusive. However, ulcer biopsy revealed metastatic RCC. Patient underwent partial gastrectomy with retroperitoneal lymph node excision. Pathology from the excised gastric mass showed a clear cell neoplasm interfacing with gastric mucosa and high power images revealed a nested neoplasm with clear cytoplasm, a delicate capillary network and atypical nuclei consistent with metastatic RCC (Figures 1D–F). The same neoplasm was also identified in the excised celiac lymph node (Figure 1G). Patient is currently undergoing outpatient chemotherapy and doing well without evidence of residual disease.
Discussion: Gastric metastasis from RCC is very rare and seen in 0.2% of cases. The median time from RCC diagnosis to gastric metastasis in the literature is 7.6 years and can present with GI bleeding/IDA. It is associated with metastasis to other organs with poor prognosis but fortunately our patient did not have other organs involved. Surgical resection of symptomatic solitary metastasis is recommended.



[2612] **Figure 1.** A, Esophagogastroduodenoscopy (EGD) showing a well-defined crated ulcerated mass along the greater curvature. B, Ulcer oozing after biopsies. C, Endoscopic ultrasound (EUS) demonstrating a 25 × 20 mm well-defined, hypoechoic lymph node in the celiac region (D and E) Pathology of the stomach showing clear cell neoplasm with gastric mucosa (F) High power showing neoplasm with clear cytoplasm, a delicate capillary network, and atypical nuclei (G) Pathology consistent with clear cell renal cell carcinoma.

S2613

Iododerma Associated Hemorrhagic Shock

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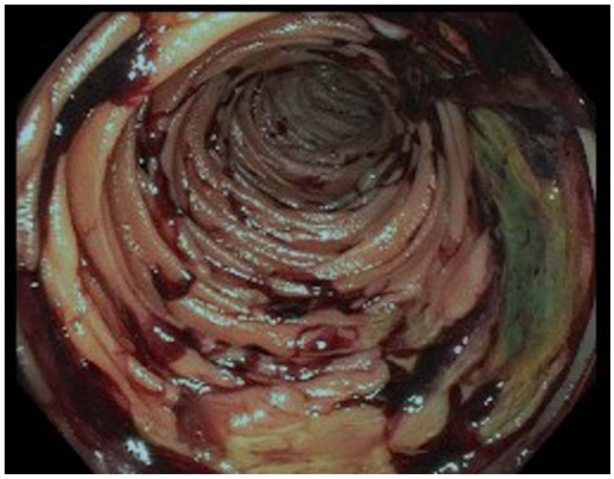
Introduction: Iodinated contrast media (ICM) is used in the evaluation of patients for an array of medical maladies and administered more than 75 million times per year worldwide. Reactions are relatively uncommon, most involve cutaneous manifestations when present (1). Iododerma is a rare neutrophilic dermatosis secondary to ICM(1-3). Extracutaneous manifestations include conjunctivitis, salivary gland swelling and respiratory compromise (1). We present a case of Iododerma associated hemorrhagic shock.
Case Description/Methods: 71-year-old female presented for GI bleeding. EGD with pharyngeal edema, tongue swelling, 6 mm ulcer in oropharynx, normal appearing mucosa throughout with no active bleed or stigmata. Colonoscopy notable for a few polyps, diverticulosis, no active bleed identified. Push enteroscopy without bleeding to proximal jejunum and repeat colonoscopy revealed blood in the colon with clots at the ileocecum. Angiogram followed with embolization of a branch of the SMA supplying terminal ileum. Despite intervention bleeding continued. Repeat angiogram without active bleed. After angiograms, patient developed severe tongue swelling and was intubated for airway protection (Figure 1). Patient noted to have multiple nodular skin lesions, bullous facial and extremity lesions, and oral ulcers. ANA + (1: 1280) serology noted. Started on steroids and Rhematology, Dermatology consulted. Skin biopsy resulted focal papillary dermal edema, superficial to mid dermal neutrophilic and histiocytic infiltrate surrounding vacuolated/ haloed structures containing variably sized acellular structures consistent with iododerma. GI blood loss and hemorrhagic shock persisted. EGD on day 10 and 15 showed progressive ulceration throughout the GI tract involving the posterior oropharynx, duodenum and proximal jejunum refractory to bipolar cautery. Small intestine biopsies showed active enteritis associated with ulceration. Findings nonspecific but concerning for sequela related to iododerma. Evaluated by general surgery, given diffuse sources of GI bleeding, not a surgical candidate. Required 36 units of PRBC's, 23 units of platelets and 8 units of FFP. Palliative care consulted and a transition to comfort care was agreed upon.
Discussion: Adverse reactions to iodinated contrast media are infrequent, iododerma is a potentially serious complication. Understanding of its GI manifestations is unclear. Management of GI bleeding in iododerma is challenging given limits in use of IR procedures that are critical in these situations.



[2613] **Figure 1.** Duodenum with multiple progressive ulcerations.

S2614

Ischemic Gastropathy in a Patient With Severe COVID-19

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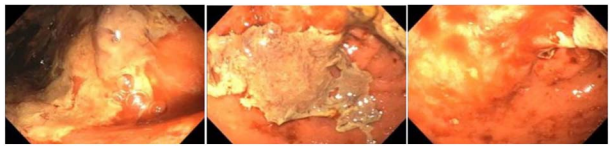
Introduction: The stomach is supplied by an extensive vascular network derived from the celiac axis and its branches, which include the splenic, common hepatic and left gastric arteries. As a result, gastric ischemia occurs infrequently. It can manifest as gastrointestinal (GI) bleeding and has been associated with significant mortality. We present herein a case of ischemic gastropathy in the setting of severe COVID-19.
Case Description/Methods: A 36-year-old obese male with newly diagnosed diabetes mellitus type 2 was hospitalized for severe COVID-19 pneumonia. He was initiated on veno-venous extracorporeal membrane oxygenation and anticoagulated on heparin, complicated by coffee-ground emesis. Esophagogastroduodenoscopy (EGD) showed a small Mallory-Weiss tear at the gastroesophageal junction and mild gastritis. Hospital course was complicated by sepsis, shock, acute respiratory distress syndrome and persistent respiratory failure requiring tracheostomy and percutaneous gastrostomy (G-tube), cardiac tamponade requiring pericardiocentesis, renal failure managed with continuous renal replacement therapy, and non-heparin-induced thrombocytopenia refractory to platelet transfusions. One month after G-tube placement, patient developed recurrent GI bleeding with melena, with lab studies showing hemoglobin 8.7 g/dL, platelet 31 K/μL, INR 2.8, BUN 31 mg/dL, and Cr 1.4 mg/dL. EGD demonstrated diffuse gastric mucosal oozing and sloughing without focal ulceration (Figure 1). Due to refractory shock despite maximal pressors, patient was ultimately transitioned to comfort care and expired. Autopsy revealed hemorrhagic gastritis with petechial ulcers.
Discussion: Gastric ischemia and upper GI mucosal injuries including ulcers, erosive gastro-duodenopathy and hemorrhagic gastropathy are some GI complications of COVID-19 that may be mediated by direct viral cytopathic effects and vascular insufficiency. The stomach has a redundant arterial blood supply that is usually protective against ischemic injury. However, states of systemic hypoperfusion, shock, splanchnic hypoperfusion, or thrombosis can precipitate ischemic gastropathy. EGD can be diagnostic and helps assess the extent of ischemia. Medical management should address the underlying cause and is supportive, involving bowel rest, acid suppression and antibiotic therapy. Angiography with revascularization may be considered in cases of vessel occlusion. Potential complications of gastric ischemia include tissue necrosis and gastric perforation. Overall prognosis is poor.



[2614] **Figure 1.** Diffuse gastric mucosal sloughing and oozing seen on EGD.

S2615

Imatinib to the Rescue: Bleeding GIST Refractory to Standard Endoscopic Hemostatic Therapies

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Introduction: Gastrointestinal stromal tumors (GISTs) are neoplasms which arise from the muscular wall of the gastrointestinal tract and can rarely be the cause of gastrointestinal bleeding. Bleeding is more common in larger tumors with higher mitotic rates, which portends a poor prognosis. Imatinib is a tyrosine kinase inhibitor well-established in the treatment of GISTs that may have a hemostatic benefit in bleeding GISTs. Hemostatic spray is a relatively new hemostatic modality that may be effective when other endoscopic options for hemostasis are ineffective. This case highlights the potential benefit of imatinib and hemostatic spray in the treatment of bleeding GISTs.
Case Description/Methods: A 50-year-old female presented with hematemesis. Her hemoglobin dropped as low as low as 6.5 g/dL and a CT scan showed a 3 cm mass on the lesser curve of the stomach. She was treated with IV pantoprazole and packed red blood cell transfusions before upper endoscopy showed an actively oozing ulcerated subepithelial mass close to the gastroesophageal junction. The oozing was temporized with hemostatic powder. The patient underwent endoscopic ultrasound-guided-fine-needle aspiration (EUS/FNA) of the mass with cytology showing spindle cells and positive immunohistochemical staining for c-KIT and DOG-1, consistent with a GIST. The mitotic rate was 1 per 20 high power fields. During hospitalization, melena and an ongoing transfusion requirement prompted a repeat upper endoscopy, which showed continued oozing from the lesion. Hemostasis with endoscopic clipping was unsuccessful, but was achieved by coating the lesion with hemostatic powder. The patient was started on imatinib 600 mg per day with no recurrence of gastrointestinal bleeding.
Discussion: Achieving hemostasis with standard endoscopic therapies is difficult for bleeding GISTs, which are very vascular tumors. Hemostatic spray offers a new option to temporize the bleeding from GISTs and we encourage endoscopists to become familiar with this treatment modality. The role of imatinib is well established in the adjuvant treatment of high-risk GISTs and the neoadjuvant treatment of GISTs when resection carries significant morbidity. Imatinib therapy of hemorrhage related to GISTs, while previously described, is less well established. This case demonstrates the potential role for imatinib in bleeding GIST, providing an alternative to more high-risk options, such as embolization or emergent surgery.

S2616

Melena: An Uncommon Presentation of Scurvy

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Introduction: Scurvy is the clinical manifestation of vitamin C deficiency and presents with hemorrhage (petechiae, ecchymoses, bleeding mucosa), follicular hyperkeratosis, hemolytic anemia, hypochondriasis, hysteria, depression, and fatigue. Scurvy is a rare diagnosis in industrialized countries; however, it can be seen in alcoholic, elderly, and institutionalized patients or those following fad diets or suffering from malabsorptive disorders. The association of scurvy and GI pathology is rare, but it exists. There have been reported cases of scurvy presenting as GI bleed and even as the initial manifestation of Whipple's disease.
Case Description/Methods: A 71-year-old female with past medical history of systemic lupus erythematosus, carcinoid tumor of the small bowel and abnormal bruising presents to the hospital with worsening purpura and intermittent polyarthralgia affecting her feet, ankles, knees, hips, shoulders, and elbows. Labs were significant for anemia of 8.25 and mildly elevated CRP and ESR of 5.9 and 30 respectively. During hospitalization, the patient had multiple black bowel movements and her hemoglobin dropped to 6.8. Iron studies were significant for iron deficiency. She was transfused and underwent EGD and colonoscopy. EGD showed characteristic findings of gastric antral vascular ectasia (Figure 1) which was treated with APC and colonoscopy revealed erythematous mucosa throughout the entire colon (Figure 1). Biopsy of the colon mucosa was unremarkable. The patient was discharged with dermatology follow up for biopsy of purpuric skin lesions. After discharge, patient's labs resulted and showed an undetectable level of Vitamin C. She was seen at follow up by her PCP and treatment was started.
Discussion: The water-soluble vitamin C plays a crucial component in collagen synthesis by activating hydrolases that form stabilizing components of the collagen triple-helix structure. When deficient, small vessels in the skin and mucosa become fragile resulting in submucosal hemorrhage in the stomach, duodenum and colon that presents as hematochezia or melena. Treatment consists of dietary modification and intravenous vitamin C replacement with resolution of lesions in only a few days. Vitamin C is replaced daily and generally normalizes in 3-4 weeks. This case demonstrates an unusual presentation of scurvy in the form of GI bleed. It is important for gastroenterologists to consider scurvy in the differential diagnosis of patients presenting with GI bleed, purpura and polyarthralgia.

Figure 1

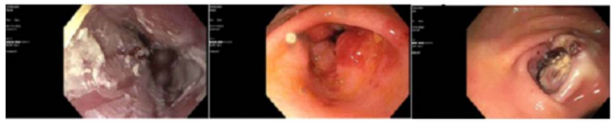

Figure 2

[2616] **Figure 1.** (A) EGD images of mucosal hemorrhage seen in scurvy (B) Colonoscopy images of mucosal hemorrhage seen in scurvy.

S2617

Massive Gastrointestinal Bleed Secondary to Newly Diagnosed Gastric Kaposi Sarcoma

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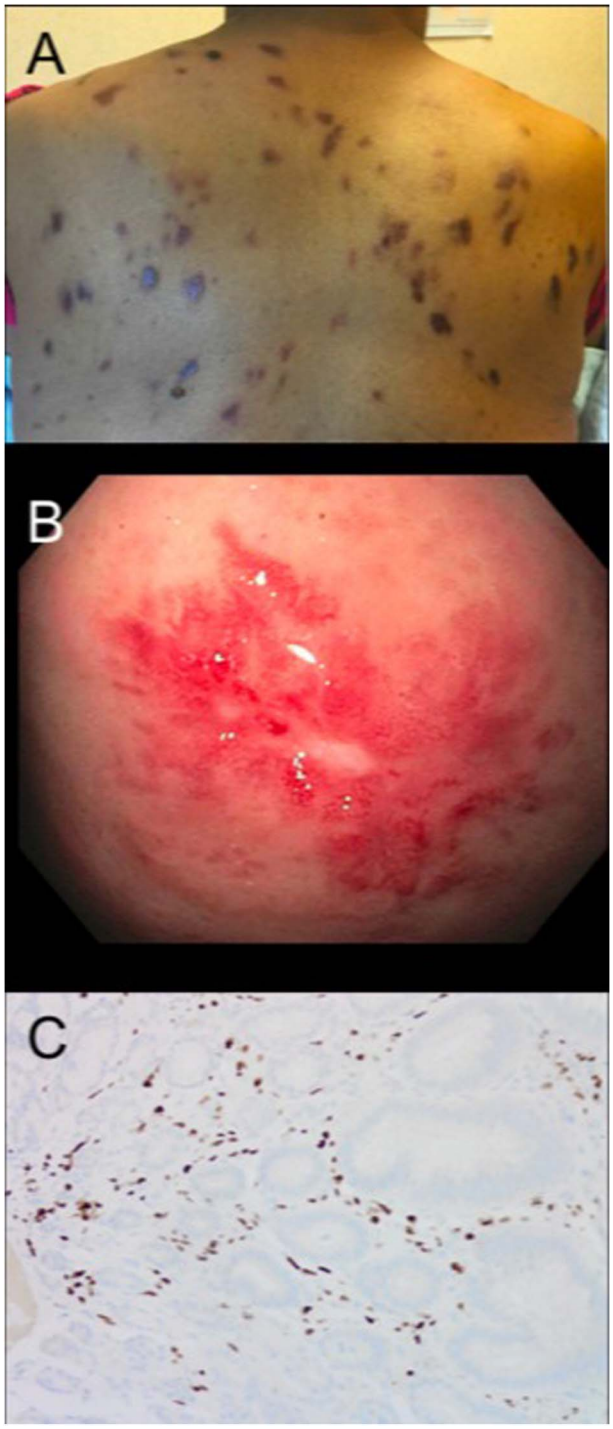
Introduction: Kaposi sarcoma (KS) is a vascular tumor associated with human herpesvirus 8. It commonly presents with cutaneous lesions but can also have visceral involvement. While presentations of gastrointestinal KS (GI-KS) are highly variable and range from asymptomatic (79%) to nonspecific gastrointestinal symptoms (21%), massive GI hemorrhage is exceedingly rare. Here, we present a case of a massive GI bleed secondary to GI-KS.

Case Description/Methods: A 39-year-old male with iron deficiency anemia (IDA), HIV/AIDS (CD4 180 cells/mm^3), and cutaneous KS compliant with highly-active antiretroviral therapy (HAART) presented to the hospital with two days of melena and hematochezia. On arrival to the emergency room, the patient was hypotensive and with hemoglobin of 4.9 g/dL. Emergent upper endoscopy showed multiple indurated and erythematous lesions in the stomach with central ulceration. Immunohistochemical testing of the biopsy revealed human herpesvirus 8 consistent with Kaposi sarcoma. Lesions were not amenable to endoscopic intervention. The patient was started on liposomal doxorubicin by hematology outpatient.

Discussion: While AIDS-related KS usually presents with cutaneous lesions, it can have visceral involvement in 15% of patients, particularly the gastrointestinal tract, lungs, and lymph nodes. Typically, upper endoscopy is pursued in those who develop GI symptoms (21% of patients) and have a positive occult blood test. The remaining 79% of patients with GI-KS are asymptomatic and are not routinely diagnosed until they develop GI symptoms. We propose that before patients become symptomatic, those who have a CD4 cell count of $<$ 100 cell/μL, HIV RNA $>$10,000 copies/mL, men who have sex with men, not on HAART therapy, or have cutaneous KS should be screened with an upper endoscopy as these factors have been shown to be predictive of GI-KS as well as endoscopic severity (Figure 1). If GI-KS is diagnosed early based on the above screening criteria, patients may have conservative treatment options available. These range from antiretroviral therapy to resection, cryotherapy, radiation, and chemotherapy. Our patient had multiple ulcerated and erythematous lesions on endoscopy, indicative of severe disease not amenable to resection and required chemotherapy. If this patient had been screened when his IDA was discovered, especially given the presence of cutaneous lesions and homosexuality, GI-KS may have been diagnosed and treated with conservative measures prior to its progression and life-threatening presentation.



[2617] **Figure 1.** (A) KS cutaneous manifestation seen on patient's back. (B) Multiple indurated, erythematous lesions seen in the gastric body on upper endoscopy. (C) Positive staining for HHV-8 latency-associated nuclear antigen (LNA)-1 confirming the diagnosis of GI-KS.

S2618

Life Threatening Upper GI Bleed from Gastrosplenic Fistula: A Rare Complication of Splenic Diffuse Large B-Cell Lymphoma

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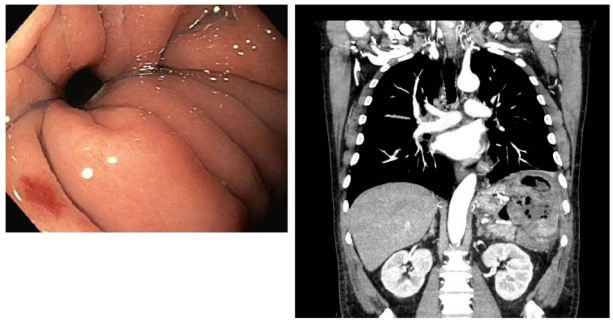
University of Missouri, Columbia, MO.

Introduction: Gastrosplenic fistula (GSF) is a rare complication of splenic Diffuse Large B Cell Lymphoma (DLBCL) which, within itself, is a rare condition. The paucity of data makes early recognition, and management of complications such as life-threatening GI bleed, a challenge. Herein, we discuss a case of GSF presenting with acute, life-threatening GI bleed that was difficult to control, highlighting the challenges of management and diagnosis.
Case Description/Methods: A 56-year-old male was brought to a local hospital in critical condition due to a massive upper GI bleed after undergoing 2 cycles of R-CHOP chemotherapy for recently diagnosed DLBCL. Urgent upper endoscopy demonstrated a necrotic base ulcer in the fundus with active bleeding, and endoscopic interventions were inadequate in achieving hemostasis. Subsequent CT angiogram

showed GSF with active bleeding from a branch of gastrosplenic artery. Splenic artery embolization was performed and patient was transferred to our institution for further care. Patient continued to required blood transfusions without overt bleeding and repeat CT revealed a large splenic air and fluid collection, contiguous with stomach along with a focal deficit in the posterior gastric wall. Second look endoscopy was performed, which showed a large fistula in the fundus. Surgical oncology was consulted and by this time his GI bleeding had resolved. It was decided to proceed with conservative management, with follow-up imaging and he was subsequently discharged home in a stable condition (Figure 1).

Discussion: DLBCL is an aggressive and invasive type of lymphoma. The spread to local organs such as the stomach can cause fistula formation both spontaneously or due to rapid tumor cell death and necrosis from chemotherapy which is the probable underlying mechanism in our case. GI bleeding from GSF is very rare, and the life-threatening nature and difficulty in achieving endoscopic hemostasis makes them a challenge for gastroenterologists. Timely diagnosis is critical for management and the best modality appears to be CT, which is superior to EGD. The visualization of the fistula tract itself can be the best diagnostic clue, but this can often be difficult, so having high suspicion in the right clinical context is very important. Preoperative splenic artery embolization has also been employed to stabilize patients with massive bleeding. Definitive treatment revolves around surgery, which includes open splenectomy with partial gastrectomy. Selected cases can be managed without surgery.



[2618] **Figure 1.** EGD showing fistula in gastric fundus Fistulous tract and splenic fluid/air collection seen on abdominal CT.

S2619

Meckel's-Associated Polypoid Vascular Mass of the Small Bowel: A Case Report of Obscure-Overt GI Bleeding

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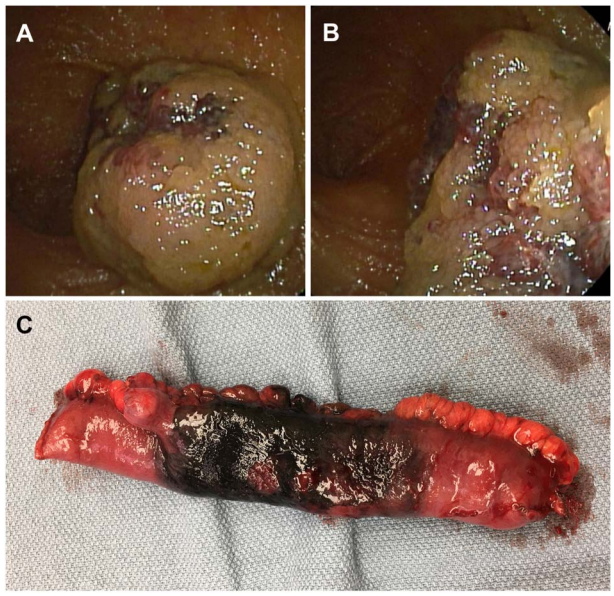
Introduction: Obscure-overt GI bleeding has traditionally been defined as recurrent visible bleeding that is not identified on standard endoscopy and colonoscopy, even radiographically. Small bowel angioectasias and NSAID ulcers are common in older adults, whereas younger patients frequently present with inflammatory bowel disease and polyp syndromes. We present a unique case of truly "obscure-overt" GI bleeding that was finally identified with retrograde double balloon enteroscopy (DBE).

Case Description/Methods: 24-year-old male presents with intermittent maroon blood per rectum. His medical history includes two vascular malformations requiring surgical resection at an early age (large lesion on neck, small distal digit lesion). He reports prior episodes of GI bleeding requiring admission for endotherapy since the age of 15. Extensive evaluation at outside facilities included: multiple EGDs and colonoscopies, video capsule endoscopy (VCE), deep small bowel enteroscopy (anterograde and retrograde), a negative Meckel's scan, and CT–angiograms without acute findings. On admission, he was found to have Hgb 5.6 and ferritin 2.0. VCE was repeated and revealed hematin with adjacent mucosal surface ulceration approximately one hour upstream of the ileocecal valve. Subsequent retrograde DBE identified a polypoid, vascular mass with stigmata of bleeding in the mid ileum (Figure 1a, b). The lesion was tattooed and hemoclips were placed to guide resection. Laparotomy for 13.5 cm small bowel resection revealed a nodular 2cm vascular malformation involving submucosal tissue and muscularis propria, with an associated Meckel's diverticulum at the base of the mass (Figure 1c). The patient recovered from surgery uneventfully.

Discussion: Meckel's diverticulum (MD) has been associated with malignancy, bleeding, and intussusception, as we present the only reported case of an associated polypoid vascular malformation resulting in recurrent bleeding. This case is unique due to young age, predisposition to vascular malformations, and the extensive investigation prior. While Meckel's scan (MS) remains the gold standard for diagnosis, previous studies have shown DBE is more sensitive than MS, CT-angiogram, and VCE at identifying bleeding MDs. This case illustrates that DBE should be considered when atypical small bowel pathology is suspected despite a negative prior workup.



[2619] **Figure 1.** A, Retrograde double balloon enteroscopy image of the polypoid, nodular, vascular mass in the mid-ileum. B, Enteroscopy image of the vascular mass with stigmata of bleeding. C, Gross pathologic specimen of the 13.5 cm small bowel resection with associated Meckel's diverticulum directly adjacent to the tattooed tissue (left).

REFERENCE
1. Fukushima M, et al. A case series of Meckel's diverticulum: usefulness of double-balloon enteroscopy for diagnosis. BMC gastroenterol. 2014;14:155.

S2620

Marginal Artery of Drummond Pseudoaneurysm Masquerading as Fistulous Tract Resulting in Recurrent Lower Gastrointestinal Bleeding

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Introduction: The mortality rate of patients hospitalized with a lower gastrointestinal bleed has been reported at 1.1% in the United States from 2005 to 2014. Pseudoaneurysms, typically associated with pancreatitis, have been described in case reports as a rare condition with a small subset presenting as gastrointestinal bleeding. Our study describes a rare case of recurrent lower gastrointestinal bleeding diagnosed as a pseudoaneurysm by endoscopy and angiography.
Case Description/Methods: A 38-year-old male presented to our facility from a long-term care facility with hematochezia and blood clots per gastrostomy-jejunostomy. He had recently been hospitalized for severe coronavirus disease 2019 with a complicated hospital course in the intensive care unit including necrotizing pancreatitis with an abdominal drain, multiple secondary infections, tracheostomy, and percutaneous endoscopic gastrostomy-jejunostomy. On previous hospitalization, he was found to have a small pseudoaneurysm of the gastroduodenal artery and received embolization of the gastroduodenal and gastroepiploic arteries at that time. During transport to our hospital, he was noted to have tachycardia, hypotension requiring norepinephrine, and was transfused one unit of red blood cells. Hemoglobin at this time was 7.5 g/dl after transfusion. Esophagogastroduodenoscopy was completed and showed a gastrojejunostomy tube in the expected location but was noted to be tight to the mucosa, which was pale in appearance. Flexible sigmoidoscopy revealed localized areas of edematous and erythematous mucosa with some associated oozing throughout the sigmoid colon. Repeat evaluation was completed one week later due to recurrent hematochezia. Colonoscopy was performed with identification of an apparent fistulous tract in the sigmoid colon located at 35 cm. Computed tomography angiography localized a pseudoaneurysm arising from the marginal artery of Drummond just proximal to its anastomosis with the ascending branch of the left colic artery and was successfully embolized.
Discussion: Pseudoaneurysms, such as the one described in this case, have been shown to be associated with pancreatitis and can result if a pseudocyst involves adjacent vasculature. Gastrointestinal bleeding is a rare presentation of this condition. However, this case highlights the importance of repeat colonoscopy and angiography in the setting of a lower gastrointestinal bleed of unknown etiology.

S2621

Life Threatening Lower Gastrointestinal Bleeding After a Transrectal Prostate Biopsy; Ibrutinib Side Effect or Vitamin K Deficiency?

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Introduction: Ibrutinib is an oral selective inhibitor of Bruton's tyrosine kinase used for the treatment of multiple B-cell mediated lymphoproliferative disorders. Bleeding events have been reported with use of ibrutinib. Authors report a case of life threatening bleeding after a transrectal prostate biopsy in a patient on ibrutinib for Waldenstrom's macroglobulinemia.
Case Description/Methods: A 71-year-old male with history of Waldenström's Macroglobulinemia and upper GI bleeding status post Billroth I procedure 40 years ago presents with hematochezia. He had associated fatigue, lightheadedness, and a syncopal episode. A transrectal prostate biopsy took place one week prior to the onset of his symptoms. Following the biopsy, he experienced progressive rectal bleeding and hematuria prompting him to contact EMS. Upon EMS arrival, he was found lying in a large amount of blood and hypotensive. He was transfused one unit of PRBCs en route to the hospital. Initial work up was significant for hemoglobin of 7.1 g/dL, hematocrit 21.3%, and INR 4.8. He was transfused two more units of PRBCs, two units of FFP, along with 10 mg of vitamin K intravenously. Despite volume resuscitation, he remained hypotensive, requiring Norepinephrine for pressure support. Gastroenterology was consulted and a colonoscopy revealed a puncture over a hemorrhoidal plexus consistent with recent prostate biopsy, where hemostasis was achieved with an endoclip. Patient's vitals and hemoglobin stabilized and he was discharged home safely (Figure 1).
Discussion: Ibrutinib is a Bruton's tyrosine kinase inhibitor (BTK -inhibitor) used to treat multiple B-cell mediated lymphoproliferative disorders including Waldenström's Macroglobulinemia. Ibrutinib has been shown to increase the rate of clinically significant bleeding when compared to standard chemotherapy. Clinical trials show a 48% increased risk of bruising and petechiae, and a 5% increased risk of grade III or more bleeding events. Ibrutinib causes platelet dysfunction downstream of the GPV1 receptors; GPIb, and integrin αIIbβ3, that results in formation of unstable thrombi. Data regarding vitamin K deficiency status post gastrectomy is scarce. The causes of vitamin K deficiency include fat malabsorption, bacterial overgrowth, marked reduction of carriers of vitamin K, and modifications of gut microbiota. Given patient's history of Billroth I, vitamin K deficiency is suspected to be a contributing factor to his presentation due to increased acid in the small bowel resulting in altered microbiota.

[2621] **Figure 1.** Colonoscopy Findings.

S2622

Massive Lower Gastrointestinal Bleeding From a Cholecysto-Colonic Fistula

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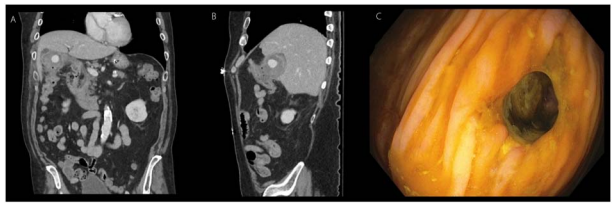
Introduction: Gastrointestinal bleeds are a common but potentially life-threatening presentation to the inpatient setting. Hemorrhage in the biliary system can sometimes be the underlying source. Fistula formation between the gallbladder and bowel/colon can be a rare complication of chronic and advanced gallstone disease, with cholecysto-colonic fistulae occurring in 0.06 to 0.14% of cases. A bleed in such instances makes localization a clinical challenge without the aid of angiography or endoscopy.
Case Description/Methods: A 78-year-old Caucasian male with a past medical history of coronary artery disease on dual antiplatelet therapy, hyperlipidemia, and type II diabetes mellitus presented to the hospital with two days of large-volume hematochezia. He was in hemorrhagic shock with a blood pressure of 66/34 mmHg, and hemoglobin 6.2 g/dL. He was rapidly resuscitated with 4 units of packed red blood cells and taken for computed tomography angiography (CTA) of the abdomen and pelvis. The scan revealed active contrast extravasation in the area of the gallbladder and hepatic flexure, originating from the cystic artery, with a local 5.6 x 5.1 cm hematoma containing foci of air, suggestive of a communication with the bowel (Figures 1A and B). The patient underwent successful embolization of the cystic artery by interventional radiology. Hepatobiliary iminodiacetic acid (HIDA) scan revealed cystic duct obstruction. Colonoscopy identified an 8 mm fistula at the hepatic flexure (Figure 1C). The patient remained hemodynamically stable with no further hematochezia and was discharged with outpatient surgical follow-up for cholecystectomy and right hemicolectomy.
Discussion: We present here a case of massive lower gastrointestinal bleeding due to a cholecysto-colonic fistula. With improved diagnosis and treatment of cholecystitis, complications of advanced gallstone disease are rarely seen today. Cholecysto-colonic or cholecysto-enteric fistulas lack common symptoms and are mainly diagnosed during abdominal surgery. Complications include biliary sepsis and peritonitis. Gastrointestinal bleeding in the setting of fistulizing disease can occur and makes early diagnosis challenging, though angiography, cholangiography and endoscopy prove to be beneficial. Awareness of this entity and early recognition can prevent catastrophic outcomes. No consensus exists regarding optimal treatment. Management ranges from minimally invasive procedures including endoscopic fistula closure to extensive surgery.



[2622] **Figure 1.** (A and B) Contrast extravasation from the cystic artery. The local hematoma contains foci of air, suggestive of communication with bowel/colon. (C) Fistula at the hepatic flexure as noted on colonoscopy.

S2623

Metastatic Anorectal Melanoma as a Rare Cause of Hematochezia: A Case Report

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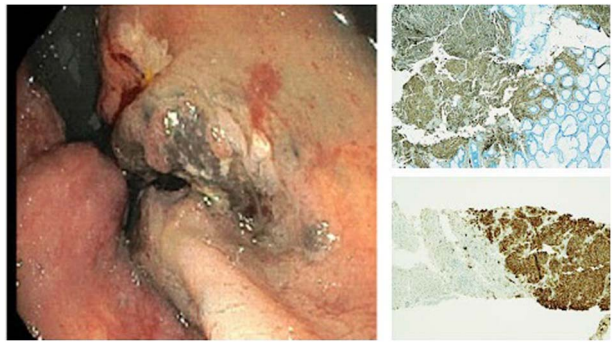
Introduction: Anorectal melanoma is a rare and aggressive subtype of gastrointestinal cancer, accounting for 0.5% of all colorectal cancers. Misdiagnosis of anorectal melanoma is common, as cases oftentimes present with nonspecific symptoms including hematochezia. As such, timely and accurate diagnosis of anorectal melanoma is difficult due to its rarity and nonspecific presentation. Consequently, prognosis is poor due to frequent metastasis by the time of diagnosis.
Case Description/Methods: A 65-year-old male with a history of basal cell carcinoma of the cheek and tobacco use presented with 10 days of hematochezia associated with dyschezia and change in caliber of stool. The patient was noted to have a 10-pound weight loss since a positive fecal immunochemical test 5 months prior. Notably, while he had not had a colonoscopy, his records revealed a prior sigmoidoscopy for similar complaints 4 years prior. Sigmoidoscopy was negative for polyps or tumors but diagnostic of segmental colitis associated with diverticulosis (SCAD); symptoms resolved after a course of oral mesalamine and antibiotics. Family history was positive for a brother with esophageal cancer. Labs were unremarkable for anemia or liver panel abnormalities. Computed tomography imaging of the abdomen showed sigmoid wall thickening, pelvic lymphadenopathy, and multiple liver lesions. Colonoscopy revealed a 0.8 × 0.5 × 0.1 cm anal mass with biopsies consistent with malignant melanoma; stains were positive for HMB45 and negative for p40 and p63. An ultrasound-guided liver biopsy showed metastatic melanoma positive for HMB45 (Figure 1).
Discussion: Hematochezia can arise from anatomical, vascular, inflammatory, and neoplastic etiologies. Although neoplastic causes are the least common, anorectal melanoma represents an especially rare and dismal diagnosis from this category. Risk factors for anorectal melanoma are unknown, although HIV has been previously suggested. HIV screening in our patient was negative. An association between anorectal melanoma and SCAD is unclear. Management of anorectal melanoma is poorly described given the scarcity of the disease but typically consists of surgical resection, although the method and extent of resection is debated. Additionally, the benefit of adjuvant chemotherapy or radiation is unclear. Prognosis of anorectal melanoma is poor, with 5-year survival rates estimated to be no more than 20-30%.



[2623] **Figure 1.** (Left) A 0.8 × 0.5 × 0.1 cm anal mass was detected on colonoscopy. (Top, Right) Biopsy of .the anal mass was positive for immunostain HMB45. (Bottom, Right) Biopsy of the liver mass was positive for immunostain HMB45, suggestive of metastatic anorectal melanoma.

S2624

Massive Bleeding From Small Bowel GIST Tumor in Young Woman With Neurofibromatosis

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Introduction: Gastrointestinal (GI) bleeding can be severe on presentation with associated hypotension and acute anemia. Common causes of upper GI bleeding in young patients include varices, Mallory Weiss tears, peptic ulcer disease, and angiodysplasia. Tumors within the GI tract are a less likely etiology. Here we present a rare case of a young woman with a massive GI bleed from a small bowel Gastrointestinal Stromal Tumor (GIST).
Case Description/Methods: The patient is a 24-year-old female who presented to our emergency department with hematemesis, hematochezia, hypotension, increased BUN, acute drop of Hg, and an elevated lactate. After resuscitation with IVF and blood transfusion, she underwent an urgent endoscopy with gastritis, but no active bleeding. While being considered for a colonoscopy, she further decompensated with hemodynamic instability and recurrent hematochezia requiring transfer to the ICU. Urgent CT angiography was performed in an attempt to localize a bleeding source, which revealing an area in the proximal jejunum with extensive hypervascularity in the arterial phase, but no active bleeding (A). Subsequent push enteroscopy showed a large submucosal lesion in mid jejunum with focal ulceration (B, C). She promptly underwent surgical resection and pathology revealed a GIST. On further discussion with the patient's family, it was later discovered that in the patient's childhood, she had undergone evaluation for faint and scattered skin lesions suggestive of café au late spots, with work up consistent with Neurofibromatosis 1 (NF1) (Figure 1).
Discussion: GISTs are overall uncommon tumors, accounting for only 0.1-3% of all neoplasms in the GI tract. In the general population, GIST tumors are most often discovered in the stomach. However, patients with NF1 have an increased risk for developing multifocal small bowel GISTs. While GI bleeding may be the initial presentation for such lesions, massive bleeding, as seen in this case, is an uncommon presentation. This case reinforces the importance of obtaining a thorough and detailed history to help create a proper differential in our patients.

[2624] **Figure 1.** A, CT angiogram showing hyper-vascular area in jejunum. B, Push enteroscopy showing ulcerated mass in jejunum. C, Push enteroscopy showing mass in jejunum.

S2625

Not Your Usual Culprit of Hemorrhagic Shock

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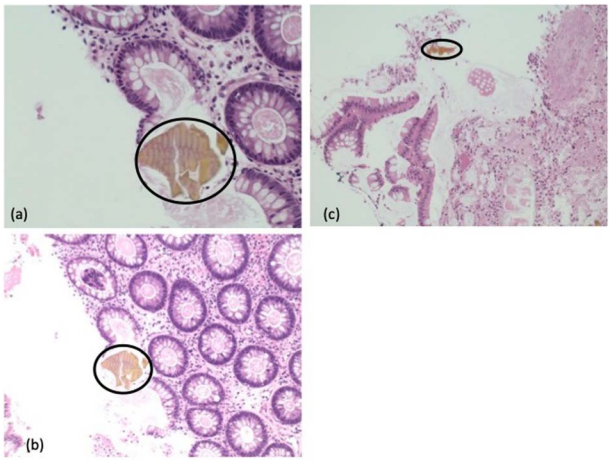
Introduction: Patients with end stage renal disease (ESRD) are at risk of gastrointestinal (GI) bleeding most commonly due to arteriovenous malformation (AVM) or ischemic colitis. They are also at risk for developing hyperphosphatemia commonly treated with phosphate binders such as sevelamer. Sevelamer can crystallize into concretions that lead to GI mucosal injury. Sevelamer induced colitis is rare, but has been described in a subset of these patients. We describe a presentation of severe colitis in a patient with ESRD on sevelamer that manifested as hemorrhagic shock.
Case Description/Methods: This is a 56-year-old African American female with ESRD on hemodialysis. She presented for an elective mitral valve replacement. Anticoagulation was initiated after successful placement of the mechanical valve. Her postoperative course was complicated by shock requiring vasopressors. Her clinical presentation was thought to be secondary to septic shock. Empiric treatment with antibiotics was initiated, but they were discontinued after a negative infectious work up. Her hemoglobin slowly trended down from 10 to 7 mg/dL. She was persistently hypotensive with multiple large bloody bowel movements requiring blood transfusion attributed to ischemic colitis or AVM. Given hemodynamic instability, she underwent a computed tomography angiography which was negative for active bleeding. Nasogastric lavage also showed bilious output. When she stabilized, a colonoscopy was performed that showed a localized area of granular, erythematous, and ulcerated mucosa in the descending colon near the splenic flexure that was friable on contact. Biopsies showed fragments of resin material morphologically consistent with sevelamer crystals admixed with acute and chronic inflammation. Sevelamer was discontinued and anticoagulation was resumed. Subsequently, bleeding stopped and hemoglobin stabilized.
Discussion: Sevelamer is a commonly used phosphate binder in patients with ESRD. GI adverse effects of sevelamer are largely under-recognized and under-diagnosed. Sevelamer is dissociated in the stomach, releasing a polymer that binds phosphate within the intestine, producing phosphate crystalline concretions that are excreted in the feces. These concretions can also embed inside eroded or ulcerated GI tract mucosa in patients with ESRD. With the increased use of phosphate binders, it is important to recognize GI side effects including the potential for GI mucosal injury in order to keep this in the differential diagnosis and immediately stop the offending agent.



[2625] **Figure 1.** Sevelamer crystals are highlighted in (a), (b), and (c) with acute inflammation demonstrated in (c).

S2626

Metastatic Testicular Choriocarcinoma Causing Gastrointestinal Bleeding in a Young Adult Male

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Introduction: Testicular germ cell tumors are rare and account for less than 1% of malignancies in males. Although there are multiple subtypes of germ cell tumors, choriocarcinoma is the most aggressive and least common subtype. Metastasis typically occurs via hematogenous spread, usually affecting the lungs, liver and brain. We present a case of a 34-year-old male with metastatic testicular choriocarcinoma presenting with melena due to metastatic foci of disease involving the stomach.
Case Description/Methods: A 34-year-old male with recently diagnosed stage IIIC metastatic germ cell tumor with known metastasis to the brain, lung, and liver presented to the hospital for initiation of cisplatin-based chemotherapy. He reported a two-week history of melena for which gastroenterology was consulted. His abdomen was soft and non-tender. Digital rectal exam did not reveal any overt bleeding. Labs were notable for a hemoglobin of 6.8 g/dL and a hematocrit of 22.3%. Esophagogastroduodenoscopy was performed revealing numerous nodular islands of abnormal tissue in the gastric body. Biopsies of the tissue were obtained and sent to pathology. Biopsies of the mucosa were positive for cytokeratin7, human-chorionic-gonadotropin (HCG), and a minimal number of cells expressing CD30. The tumor cells were negative for cytokeratin 20, alpha-fetoprotein (AFP), and placental-alkaline-phosphatase (PLAP) on immunohistochemistry staining. These findings supported the diagnosis of metastatic germ cell tumor with predominant choriocarcinoma component. Following esophagogastroduodenoscopy, the patient was placed on acid suppression therapy and proceeded with chemotherapy.
Discussion: Testicular choriocarcinoma is a rare subtype of germ cell tumor that affects young adult males. It is an aggressive tumor that metastasizes early via hematogenous spread. Patients can present with hemorrhage from metastatic lesions which can be spontaneous or in response to chemotherapy. Metastasis to the gastrointestinal tract is seen in less than 5% of cases involving primary testicular choriocarcinoma. In such cases, the stomach is the most common location of metastasis. This case highlights the importance of knowing that malignant germ cell tumors can present with gastrointestinal bleeding and should be placed in the differential when a young man presents with gastrointestinal bleeding.

S2627

Not GIST Any Bleed: A Rare Case of GIST Presenting as a Gastrointestinal Bleed

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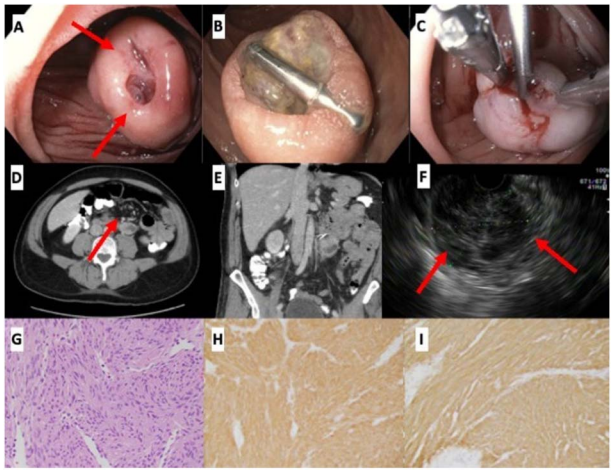
Introduction: Gastrointestinal stromal tumors (GISTs) are mesenchymal neoplasms that account for 1-3% of gastrointestinal (GI) tumors with less than 5% of GISTs occurring in the duodenum. We present an interesting case of a 53-year-old patient who presented with hematemesis and melena secondary to a duodenal GIST.
Case Description/Methods: A 53-year-old male presented with hematemesis and melena. He denied unintentional weight loss, family history, or NSAID use but did endorse alcohol use. At time of arrival, the patient was afebrile with stable vital signs and physical exam was unremarkable. Laboratory values revealed a hemoglobin of 12.7 g/dL and INR of 1.04. BUN was 26 mg/dL and creatinine 1.15 mg/dL. Hepatic function panel was within normal limits. The patient was taken for upper endoscopy, which revealed a 5 cm submucosal mass with an ulcerated central area and nonbleeding visible vessel (Image 1A). The mass was on the inferior wall and distal to the ampulla. Epinephrine was injected into the mass, the nonbleeding vessel was cauterized, and 3 clips were placed successfully to achieve hemostasis (Image 1B and C). The patient required a total of 6 units of packed red blood cells transfusions during his hospital stay. Subsequently, CT chest/abdomen/pelvis was performed which revealed a 3.2 $\times$ 2.5 $\times$ 4.4 cm mass in the duodenum with an exoenteric growth pattern typical of a GIST but no evidence of metastasis (Image 1D and E). Follow up outpatient endoscopic ultrasound (EUS) with FNA of the mass was performed which confirmed diagnosis of GIST (Image 1F). The patient initially underwent 6 months of neoadjuvant chemotherapy with Gleevac given its proximity to the Ligament of Treitz and vascular structures. The tumor significantly decreased in size and the patient underwent surgery for tumor resection. Final pathology revealed a 2.6 cm tumor with negative margins and the decision was made to continue Gleevac for a total of 3 years to prevent recurrence (Image 1G-I). Now one year following resection and 8 months after restarting chemotherapy, the patient remains in remission.
Discussion: GISTs are often asymptomatic or lead to a constellation of non-specific symptoms. GI bleeding is a commonly reported symptom of GIST, but severe bleeding requiring multiple transfusions and endoscopic intervention is very uncommon. Timely diagnosis of these tumors is imperative given their malignant potential and need for surgical or endoscopic resection to allow for definitive cure.



[2627] **Figure 1.** Image 1: (A) Esophagogastroduodenoscopy (EGD) revealing a submucosal mass about 5 cm in size with a central ulcerated area and nonbleeding visible vessel. (B and C) Three clips applied during EGD to the ulcerated mass to achieve hemostasis of bleeding that resulted following cauterization of the visible vessel. (D and E) CT chest/abdomen/pelvis demonstrating a 3.2 × 2.5 × 4.4 cm mass within the transverse portion of the duodenum demonstrating an exoenteric growth pattern. (F) Endoscopic ultrasound demonstrating an oval and hypoechoic mass measuring 34 mm × 32 mm with well-defined and smooth margins in the second part of the duodenum contained within the muscularis propria. (G) Duodenal mass resection with CD117 IHC stain, 20×, diffusely positive in GIST tumor cells. (H) Duodenal mass resection with DOG1 IHC stain, 20×, diffusely positive in GIST tumor cells. (I) Duodenal mass resection, H&E stain, 40× with bland spindle cells and absent necrosis consistent with GIST, spindle cell type.

S2628

More Than NSAIDs or *H. pylori*: A Rare Cause of Gastric Ulcer

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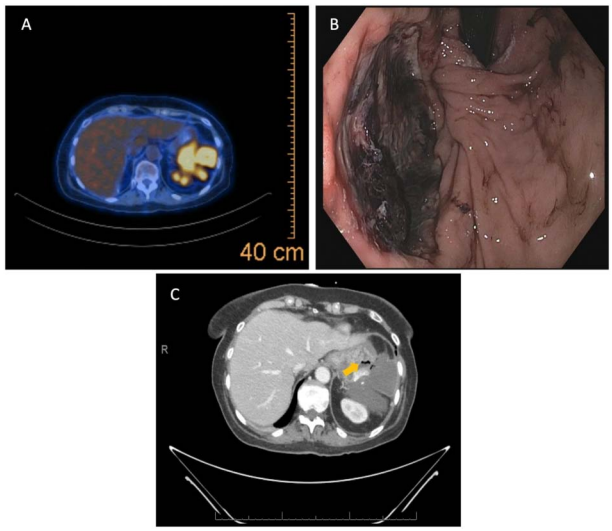
Introduction: Gastric ulcer is commonly caused by NSAIDs use or H pylori infection. Direct invasion of extraluminal tumor is considered a rare cause. Here, we report a case of bleeding gastric ulcer caused by invasion of recurrent large B cell lymphoma (DLBCL) in splenic bed post splenectomy.

Case Description/Methods: A 75-year-old woman with diffuse large B cell lymphoma (DLBCL) status post splenectomy one year ago, currently receiving chimeric antigen receptor T cell chemotherapy (Tisagenlecleucel) presented with hematemesis and syncope. Of note, recurrent lymphoma adjacent to the gastric greater curvature was noted in the splenic bed on the follow-up positron emission tomography-computed tomography a few weeks ago (Figure 1). Physical examination was significant for tachycardia, hypotension, and mild epigastric tenderness to palpation. Laboratory data revealed a white blood cell of 3,600/mm ^{3} (reference range: 4,500-11,000/mm^3), hemoglobin of 6.5 g/dL (reference range: 12-16 g/dL), and platelet of 58,000/mm^3 (reference range: 150,000-400,000/mm^3). The patient received intravenous proton pump inhibitor drip and packed red blood cell transfusion. Esophagogastroduodenoscopy (EGD) was performed urgently after adequate resuscitation, which revealed a large amount of blood clots in the stomach and an actively bleeding large ulcer (5 × 5 cm) in the gastric fundus (Figure 1). Hemospray was applied to achieve hemostasis. Given the concern of rebleeding, the patient was referred to interventional radiology for Gelfoam embolization of the left gastric artery. A follow up Abdominal CT showed a 8.8 × 8.1 cm mass communicating with the lumen of the stomach along the greater curvature, consistent with fistula formation. No further gastrointestinal bleeding was reported after procedures.

Discussion: This case highlights a rare cause of a gastric ulcer, which was caused by a recurrent diffuse large B cell lymphoma in the splenic bed. Primary splenic DLBCL causing a gastric bleeding ulcer as a gastro-splenic fistula has been reported previously; however, our patient had a splenectomy with recurrence of the splenic DLBCL in the abdominal cavity. The recurrent lymphoma adjacent to the gastric greater curvature was noted in the splenic bed causing fistula formation. Given the aggressive nature of DLBCL, fistula formation between the spleen and stomach plays an important role in gastric bleeding. Although a splenectomy was performed, a fistula was noted between the recurrent tumor and the greater curvature of the gastric body.



[2628] **Figure 1.** A, Positron emission tomography scan revealing invasion of DLBCL into the gastric fundus; (B) Large ulcer with adhered clots in gastric fundus; (C) Computerized tomography of abdomen with contrast elucidating a fistula between the DLBCL and the gastric fundus (yellow arrow).

S2629

Non-Cirrhotic Parastomal Variceal Bleed Controlled With TIPS

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Introduction: Transcutaneous intrahepatic portosystemic shunt (TIPS) is a procedure performed for treatment of refractory portal hypertension (pHTN). The two indications with the greatest efficacy are recurrent esophageal variceal bleeding and refractory ascites, however TIPS has also been noted in the literature to be one of the treatments for parastomal varices (PSV). PSV's present in patients with stomas who may or may not have pre-existing pHTN. We present a case of a non-cirrhotic patient who presented with refractory bleeding from PSV and was successfully treated with TIPS.
Case Description/Methods: A 59-year-old male with a history of spinal tumor status post resection complicated by T4 paraplegia with colostomy placement, prior GI bleeds, obesity, and untreated hepatitis C presented in hemorrhagic shock with five bags worth of bloody ostomy output for the past day. Pertinent labs revealed a hemoglobin of 6.3 and lactic acid of 3.0. CTA A/P showed no evidence of active bleeding however noted the presence of pericolonic varices around the colostomy site draining into the portal venous system via the splenic vein, and normal portal vasculature. On day two of admission, the patient had a major bleed and required multiple blood products. Endoscopies showed no evidence of esophageal varices however colonoscopy showed non-bleeding diverticulosis and external bleeding anastomotic vessels. There were adequate views of the peristomal and stomal lumen without visualization of bleeding stigmata or luminal varices. IR consulted and successfully performed TIPS followed by sclerotherapy and variceal embolization of the pericolonic varices. Hepatic vein pressure gradient was measured at 10 mmHg pre-TIPS, and 6 mmHg post-TIPS. Liver biopsy revealed chronic hepatitis with moderate steatosis, and bridging fibrosis with occasional regenerative nodules. The patient was discharged a few days later with no recurrent bleeding.
Discussion: Varices are a complication of pHTN in patients with cirrhosis or pathologies that allow collateral veins to form and enlarge between the portal and systemic systems. In this case report, the patient had a history of untreated HCV, a risk factor for development of pHTN, and obesity, a recognized risk factor for PSV formation. Post-surgical adhesions or scarring can also lead to PSV formation. It is important to make patients and physicians aware of the risk factors and monitor for PSV formation.

S2630

Massive Hematemesis: A Case of Esophageal-Subclavian Fistula

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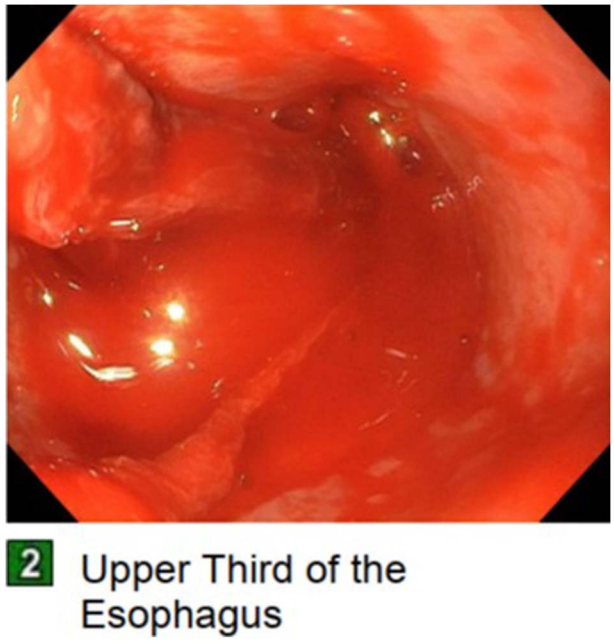
Introduction: Esophageal-subclavian fistulae are rare and are most commonly seen as a complication of congenital aortic arch anomalies. We report a case of an esophageal-subclavian fistula in a patient with a right aortic arch with an aberrant left subclavian artery (ALSA), an uncommon anatomical variant that occurs in approximately 1% of the general population.
Case Description/Methods: A 76-year-old man with atrial fibrillation, prior pulmonary embolism, and hyperthyroidism with a multinodular goiter presented to an outside hospital (OSH) after being found down at home. He was intubated for acute hypoxic respiratory failure at the OSH, and transferred to our center for resection of the multinodular goiter causing airway compression. His postoperative course was complicated by multiple infections and prolonged intubation. CT imaging incidentally noted a four vessel aortic arch with retroesophageal ALSA. Two months into the hospitalization, he had large volume hematemesis and subsequent cardiac arrest requiring multiple rounds of resuscitation and Blakemore tube placement into the esophagus. Upon deflation of the Blakemore, he coded again and was started on massive transfusion protocol before successfully deflating the device. Emergent endoscopy was notable for clotted blood in the stomach and active, pulsatile bleeding of the proximal esophagus (25 cm), concerning for arterio-esophageal fistula. Thoracic surgery, cardiac surgery, and vascular surgery were consulted; however, given overall poor prognosis and high risk with invasive surgery, no operative intervention was offered. He was ultimately transitioned to comfort care (Figure 1).
Discussion: While arterial-esophageal fistulae are rare, it is important to recognize these cases early as they can lead to fatal hemorrhage if not surgically intervened upon. In the case of ALSA, the vessel takes a retroesophageal course and often forms a dilated segment at the proximal end, called a diverticulum of Kommerell, which compresses the esophagus posteriorly. The vascular pressure on the esophagus can ultimately create a fistula. Prolonged use of indwelling devices, such as nasogastric tubes (NGT) and endotracheal tubes (ETT), may create pressure necrosis and erosion of the posterior esophageal wall, thus contributing to fistula formation. While there are currently no guidelines for screening for aortic arch abnormalities, it has been suggested that those with aortic arch abnormalities noted on CT imaging may benefit from avoidance of prolonged use of NGT or ETT.



[2630] **Figure 1.** Endoscopy image showing upper third of the esophagus with profuse, active bleeding.

S2631

The Unusual Suspect: Gastrointestinal Bleeding From an Ampullary Dieulafoy Lesion

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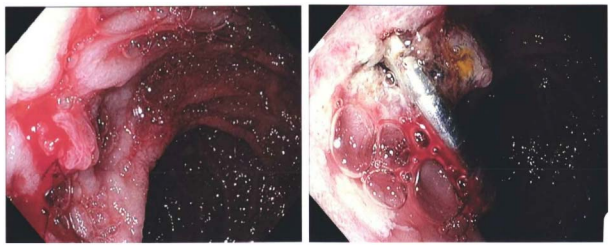
UMass Chan - Baystate Medical Center, Springfield, MA.

Introduction: Dieulafoy lesions (DLs) are an unusual but important cause of acute upper gastrointestinal bleeding (UGIBs), and can be difficult to diagnose. Three fourths are found in the stomach close to the gastroesophageal junction, but have also been reported in small bowel and colon. There are only a few reported cases of ampullary DLs. We present a rare case of a recurrent UGIB from an ampullary Dieulafoy lesion and its management.
Case Description/Methods: A 65-year-old male presented for type B aortic dissection requiring endovascular repair, which was complicated by type 1 endoleak. His hospital course was complex owing to sepsis, respiratory failure, and cardiac arrest. Gastroenterology was consulted on day 16 for multiple tarry bowel movements. Esophagogastroduodenoscopy (EGD) showed healing ulcers in lower esophagus. and non-bleeding ulcers in the duodenal bulb. The culprit lesion was an oozing Dieulafoy at the major papilla. Hemostasis was achieved with epinephrine injection and thermal therapy. Rebleeding occurred 5 days after the initial EGD leading to shock and cardiac arrest. Once the patient was hemodynamically stabilized, he underwent another EGD that showed copious fresh blood in stomach body as well as the second and third portions of duodenum. Active arterial spurting was noted from the superior aspect of major papilla. Given the severe hemodynamic compromise from this bleeding, we elected to clip the lesion this time, accepting the risk of pancreatitis and/or biliary obstruction. One endoclip was placed across the dorsal aspect of major papilla and closed. Persistent oozing was noted from under the clip which was arrested by applying a hot snare to the already placed endoclip and delivering thermal energy to the area pinched by the endoclip. Complete hemostasis was then achieved [Figure 1]. Liver function tests and lipase were monitored for a week and the patient did not develop pancreatitis or biliary obstruction despite placement of endoclip across the major papilla.
Discussion: Ampullary DLs are extremely rare and can present a unique diagnostic and therapeutic challenge due to their anatomical location. There is currently no consensus on how to best treat ampullary DLs. Verification of the diagnosis and definitive treatment might require repeated examinations. Early and aggressive endoscopic treatment should be adopted when an ampullary DL is suspected, and patients should be closely followed up given therapeutic interventions can potentially impair biliary drainage.



[2631] **Figure 1.** Endoscopic images of bleeding from ampullary Dieulafoy lesion before and after endoscopic intervention.

S2632

Challenge a Diverticular Bleeding

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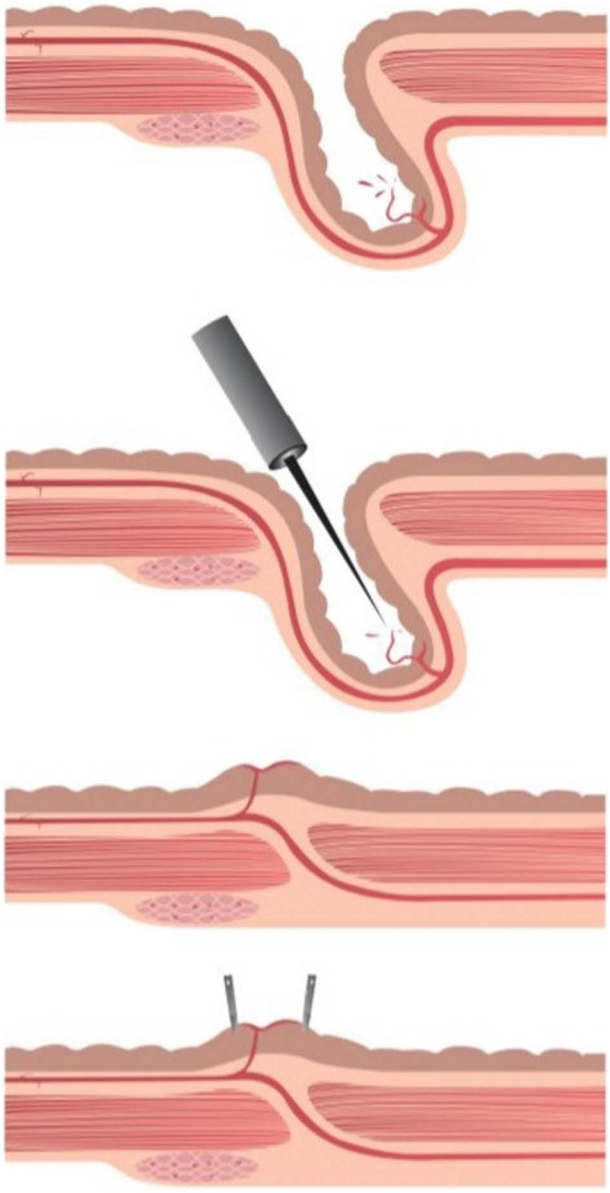
Introduction: Colonic diverticular bleeding is the most common cause of acute LGI bleeding. Colonoscopy is recommended as the initial diagnostic modality. Although, the detection rate of the bleeding is variable as it is a challenging diagnosis
Case Description/Methods: A 67 yo Man with a history of hypertension and diabetes mellitus, on baby aspirin presented to our emergency department with 4 episodes of painless hematochezia of 1day duration. The patient was initially stable but blood pressure dropped to 74/52 mmHg with continuous bleeding. Initial hemoglobin 12.5 g/dL dropped to 7.9 g/dL. A computed tomography (CT) scan showed intraluminal active arterial extravasation in the proximal transverse colon with scattered colonic diverticula. After IV resuscitation and blood transfusions, a selective and subselective angiography of the celiac axis and the superior mesenteric artery showed no evidence of active hemorrhage. Subsequent colonoscopy using a CF-HQ190L with an attached cap was performed, after oral preparation with 4 L of polyethylene glycol 3350. Multiple diverticula with medium openings were seen in the whole colon. Diverticula were washed and examined very carefully. One diverticulum in the transverse colon was noted with a visible clot. The base of the diverticulum was injected with epinephrine 1/10000 which inverted the diverticulum and exposed the culprit vessel. 3 endoclips were applied with successful hemostasis. The patient was followed and showed no recurrent hemorrhage. A repeat non-contrast CT showed the clips at the site of previous active extravasation (Figure 1).
Discussion: Colonic diverticular bleeding accounts for 20.8 to 41.6% of LGI bleeding. After resuscitation, colonoscopy is recommended as an initial diagnostic modality. Although the detection rate of the bleeding varies from 6% to 42%. Detecting stigmata of recent bleeding is challenging, but improved if performing the colonoscopy urgently, within 24 h, with oral lavage solutions, by expert endoscopists who have performed >1,000 colonoscopies, and with the use of disposable distal attachments and water-jet systems. Having CT angio ahead of time is beneficial as it guides us anatomically. Therapeutic endoscopic options include clipping, epinephrine injection, band ligation or conservative management. Injecting the diverticulum with saline with or without epinephrine will invert the diverticulum and expose the inside including a clot or visible vessel and make hemostasis easier. This represents a new technique in diverticular bleeding control.



[2632] **Figure 1.** Diverticular bleeding control.

S2633

Omental Varices Causing Umbilical Bleeding: A Rare Presentation in Cirrhotic Patients With Portal Hypertension

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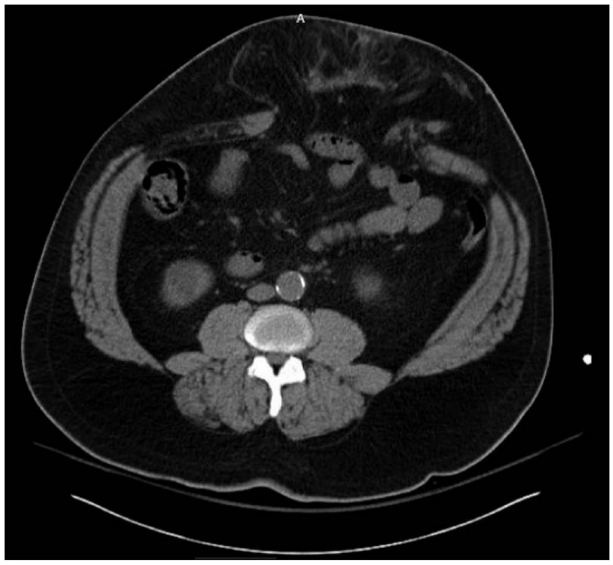
Introduction: Ectopic varices account for less than 5% of all varix-related bleeding episodes. Umbilical bleeding is a well-recognized but unusual complication of portal hypertension, and most of the time is caused by bleeding from umbilical varices (UV). On the other hand, rupture of omental varices (OV) leading to spontaneous umbilical bleeding is rare and has been reported once in the previous literature.
Case Description/Methods: A 54-year-old male with a history of liver cirrhosis, MELD score of 21, Child-Pugh Class B, who was found lying in a pool of blood in his bedroom, was transported to the hospital with profuse spontaneous bleeding from his umbilical hernia site. He gave a history of similar, but mild bleeding episodes occurring intermittently over the last week, with no trauma associated. Initially, the patient was hypotensive, tachycardic, and had a protuberant abdomen with a large ventral hernia, covered by a dressing. Removal of the dressing revealed active venous hemorrhage. Laboratories showed hemoglobin 6.9 g/dL, mean corpuscular volume 95.3 fL, platelets 88 $\times$ 10^3/mcL, INR 1.36, total bilirubin 0.7 mg/dL, ammonia level 160 μg/dL, and mild transaminitis. The patient's hemorrhagic shock was treated with blood transfusions, IV fluids, and vasopressors. Abdomen CT scan showed anterior abdominal wall hernias containing herniated fat with fat stranding. The surgery service evaluated the patient and suspected OV bleeding. Intraoperatively, he was treated with periumbilical excision and ligation of the OV contained within the hernia. The omentum became adhered to the skin of the umbilicus, allowing venous communications to develop between the varices and cutaneous veins of the umbilicus. The section was dissected and a Seprafilm was placed to prevent future adherence, and the bleeding was controlled (Figure 1).
Discussion: The most reported cause of spontaneous umbilical bleeding is UV. In our case, the presence of bilateral anterior abdominal hernias containing herniated fat with some fat stranding on the abdominal CT was suspicious for OV, which was confirmed to be the source of bleeding intraoperatively. In such cases, OV as the source of umbilical bleeding should be ruled out. Previous reports have suggested a portosystemic abdominopelvic CT scan preoperatively to define the portal vascular anatomy, identify associated varices, and sites of bleeding before the procedure.



[2633] **Figure 1.** CT Abdomen and pelvis without contrast showing umbilical hernia containing omental fat.

S2634

Obscure GI Bleed From Metastatic Melanoma

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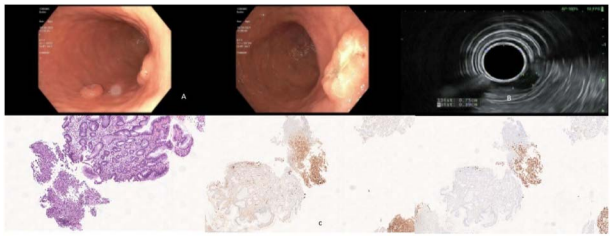
Introduction: Malignant melanona is an epithelial cancer arising from melanocytes. GI tract is usual site of involvement in patients with metastasis. We present a patient who presented with a GI bleed and was diagnosed to have metastatic gastric melanoma.
Case Description/Methods: 84 year old female with PMH of atrial fibrillation, on Eliquis was recently diagnosed with melanoma in right upper extremity and regional axillary lymphadenopathy. Patient had undergone wide local excision with adjuvant Pembrolizumab. On follow up visit with oncology, patient reported having fatigue. Lab work up showed anemia with Hgb of 5.5 g/dl (baseline 13 g/dl). She was hospitalized and received blood transfusions which resulted in improvement of her Hgb. GI service was consulted. On evaluation, patient reported having mild epigastric pain and melena. ROS was unremarkable. She was scheduled for an EGD. EGD showed two 10 mm submucosal nodules in stomach with central ulceration (A) along with duodenal erosions with unremarkable esophagus. There was no evidence of fresh or old bleeding. Patient was scheduled for an EUS for further evaluation of gastric lesions. A colonoscopy was also scheduled to determine cause of GI bleed. EUS was performed which showed evidence of two ulcerated intramural (subepithelial) lesions in the body and at incisura of the stomach. These lesions were hypoechoic and heterogenous. These lesions appeared to originate from the deep mucosa (layer 2) measuring 5 mm in maximum thickness with well defined outer borders (B). Sonographic findings were considered to be consisted with aberrant pancreas versus metastasis. FNB was performed. Colonoscopy was unremarkable other than diverticulosis and internal hemorrhoids. Subsequent lab work showed stable blood counts without need for any further blood transfusion. Anticoagulation was resumed on discharge. Biopsy showed presence of tumors cells diffusely positive for SOX10 and S100 and negative for MNF116. These were considered to be related to metastatic melanoma (C). Follow up with oncology was established on discharge to discuss further management.
Discussion: Malignant melanoma is commonly associated with metastasis with involvement of GI tract with 23% with gastric involvement, commonly presenting with abdominal pain and GI bleeds. Prognosis is usually poor with median survival reported upto 6-8 months. Treatment involves surgical resection, chemotherapy or immunotherapy. Use of BRAF targeted therapies and immune checkpoint inhibitors have increased survival rates.



[2634] **Figure 1.** A, Submucosal lesions (B) EUS findings (C) Metastatic melanoma with positive SOX-10 and S100.

S2635

Novel Technique for Insertion of Balloon Tamponade Tube

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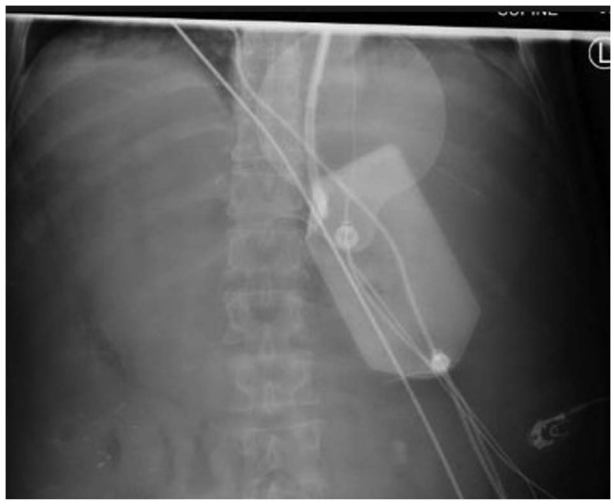
Introduction: We introduce the use of an endoscopic injection needle to act as a stiffener for the safe insertion of a balloon tamponade tube in a patient with a known benign upper esophageal stricture.
Case Description/Methods: 61 year old male with a past medical history of NASH cirrhosis complicated by known varices, squamous cell carcinoma of the esophagus that underwent radiation therapy resulting in a known upper esophageal sphincter that had been dilated with a through the scope balloon the week prior, presented to the emergency department with complaints of hematemesis and dizziness. While in the ED, the patient begins to have massive hematemesis with associated hypotension dropping his pressures to 64/40 mmHg. The ED performs rapid sequence intubation and begins securing venous access with a central venous catheter and large bore IVs. After RSI, the patient experiences PEA arrest with presumption of cause as hemorrhagic shock. Massive transfusion protocol is initiated and. ROSC is achieved after a total 5 minutes of coding the patient, administering epinephrine, and blood. Gastroenterology attempts to perform an EGD but is met with resistance of what is a known radiation-associated stricture off the upper esophagus at approximately 20 centimeters from the incisors and the scope cannot be passed through. A blakemore is attempted to be placed for stabilization of bleeding from esophageal varices but is met by the same resistance as the scope and is coiled at the back of the oropharynx. An endoscopic needle is gathered from the travel cart and inserted into the gastric suction port of the Blakemore tube in order to

stiffen the tamponade balloon. The Blakemore tube is successfully passed into the esophagus and stomach and the gastric balloon is inflated and confirmation occurs via abdominal x-ray. Patient is transferred to the IR suite for emergent TIPS with Blakemore in place (Figure 1).

Discussion: A novel technique was used in this case to successfully place a Blakemore tamponade balloon into a patient with an active variceal hemorrhage who also had known esophageal stricture from radiation therapy. Unfortunately the stricture precluded timely-endoscopic interventions to the variceal bleed in an unstable patient and the decision to place a Blakemore assisted in controlling the hemorrhage enough to transfer the patient successfully to IR for TIPS.



[2635] **Figure 1.** Tamponade balloon with visible endoscopic needle in gastric suction channel.

S2636

Peristomal Varices: An Elusive Source of Recurrent Stomal Bleeding

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Introduction: Peristomal varices are thought to be caused from abnormal communications between the high-pressure portal system and relatively low-pressure systemic circulation. It can be a source of recurrent bleeding and can be difficult to diagnose with endoscopic evaluation.

Case Description/Methods: A 75-year-old male with history of a total abdominal colectomy with end ileostomy due to severe sigmoid diverticular stricture presented with bleeding from the ostomy. EGD and ileoscopy showed mild esophagitis and a normal appearing ileal mucosa without blood. The bleeding self-resolved and source was thought to be related to the stoma site. 3 months later, patient was readmitted for recurrent stomal bleeding. Repeat ileoscopy only showed erythematous and friable ileal mucosa. Capsule endoscopy was negative for bleeds. Once again, the bleeding self-resolved. He was readmitted one month later and had been undergoing outpatient cirrhosis work up. EGD and ileoscopy demonstrated grade 1 esophageal varices and PHG. Venography and angiography showed a large portal venous collateral connecting to a dilated venous web at the stoma site and draining via the right inferior epigastric vein. Patient underwent successful embolization of the draining veins and venous web at the time and twice more during subsequent admissions (Figure 1).

Discussion: Peristomal varices (SV) have been documented to occur in 3-5% of ostomies with bleeding rates ranging from 27% to 50%, and time to bleeding spanning between 1 month and 23 years after formation of the stoma. Risk factors include esophageal varices, splenomegaly, decreased platelet count, obesity, or liver disease. The diagnosis can be difficult to make as unlike other ectopic varices within the GI tract, SVs are not usually visible to the naked eye and their shallow location are often not visible under general endoscopic evaluation. Other imaging modalities such as doppler US, portal vein venography, and venous phase mesenteric angiography can guide the diagnosis. In few cases, patients can present with blueish skin discoloration or peristomal caput medusa. The most conservative approach to management is favored due to high risk of recurrent bleeding in surgical approaches and higher risk of death for procedures with liver disease. Re-bleeding is not uncommon and patients' morbidity and mortality are primarily driven by the level of underlying liver disease. In conclusion, SV can be a differential in cases of recurrent stomal bleeds without an identifiable source on endoscopic evaluation.

[2636] **Figure 1.** Peristomal varix demonstrated on CT scan.

S2637

Pyogenic Granulomas: A Rare Cause of Small Bowel Bleeding

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Introduction: Bleeding from the small bowel is a relatively uncommon etiology of GI blood loss, accounting for only 5-10% of cases. Although advancements in video capsule endoscopy (VCE), enteroscopy, and angiography have assisted in identifying small bowel bleeds, their diagnosis and management remain challenging.
Case Description/Methods: This is a case of a 51-year-old female who presented with severe acute on chronic iron deficiency anemia requiring supplemental IV iron and multiple blood transfusions over the course of a year. She had no other significant medical issues. EGD and colonoscopy failed to identify the etiology of her anemia. VCE showed an ulcerated polypoid lesion in the proximal to mid jejunum with active bleeding. Push enteroscopy failed to visualize the lesion, and distal reach of the scope was tattooed. Repeat VCE showed the polypoid lesion just distal to the tattoo. Single balloon enteroscopy was performed; the scope was advanced beyond the tattoo, but failed to reach the lesion. The patient was referred to surgery and underwent robotic-assisted small bowel resection with primary anastomosis. Approximately 15 cm distal to the tattoo, there was evidence of a polypoid lesion prompting a 10 cm jejunal resection. Gross assessment revealed a 2.5 cm hemorrhagic pedunculated lesion with pathology consistent with a pyogenic granuloma. The patient recovered without complication, and, as of six weeks after surgery, her anemia had resolved.
Discussion: Pyogenic granulomas are inflammatory vascular lesions occurring most commonly in the epidermis and oral cavity; however, they have also been reported in the GI tract where they most often present with anemia. They are thought to result from a reactive process due to local trauma or irritation. As a rare cause of small bowel bleeding, they often require multiple endoscopic procedures and/or surgery prior to definitive diagnosis and management. Resection is curative, and no recurrences have been documented. This case demonstrates the diagnostic challenges associated with small bowel bleeding and emphasizes the importance of an interdisciplinary approach. Although this jejunal lesion was not endoscopically resected, endoscopic localization provided valuable information to allow for a minimally invasive and uncomplicated robotic resection resulting in resolution of the patient's profound anemia (Figure 1).

[2637] **Figure 1.** A, Ulcerated and bleeding polypoid lesion seen in jejunum on VCE. B, 10 cm jejunal resection with 2 roughly 1 cm polypoid lesions. C. Pathology specimen (described as a 2.5 × 1.2 × 1.2cm pedunculated lesion) identified as a pyogenic granuloma.

S2638

Primary GI Mucosal Melanoma: A Rare Etiology of Iron Deficiency Anemia

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Introduction: Iron deficiency anemia (IDA) is an alarming finding in males and post-menopausal females. A myriad of etiologies could be responsible for the anemia. In evaluation for possible GI blood loss, bidirectional endoscopy is usually warranted to identify a culprit for the anemia. We present a rare etiology of IDA identified on endoscopy in an elderly patient presenting with symptomatic anemia.
Case Description/Methods: An 89-year-old female with multiple medical comorbidities including atrial fibrillation on apixaban presented with fatigue, weakness, and exertional dyspnea. Laboratory investigations revealed IDA with a hemoglobin of 8.0 g/dl. Patient denied any overt GI bleeding. She was admitted, and a CT-Angiography of the abdomen revealed a questionable small focus of hemorrhage in the posterior gastric antrum, she was started on IV PPI and after adequate transfusion she underwent bidirectional endoscopy. Endoscopy findings were significant for a 3-4 mm raised umbilicated gastric lesion that was removed with cold forceps. The biopsy revealed a mucosal melanoma, SOX 10, Mart 1, HMB45 and S100 positive. Subsequently, the patient underwent a PET scan for staging which showed focal uptake at a distal esophageal lymph node; and focal uptake associated with a loop of small intestine in the left aspect of the pelvis. She also underwent a complete dermatological, ophthalmological evaluation and a Head CT scan to assess for a primary source, which were nonrevealing. To further evaluate the PET uptake in the small intestine she underwent video capsule endoscopy which revealed 3 small intestinal (likely jejunal) masses (Figure) with a similar mucosal pattern to the identified gastric lesion. Patient was referred to Oncology and eventually underwent 3 rounds of radiotherapy followed by systemic chemotherapy.
Discussion: Malignant melanoma involving the GI tract can be either primary or metastatic. Primary GI mucosal melanoma is a rare entity with an annual incidence of 0.58 cases per million, its presentation is variable depending on location of the primary melanoma. Our case highlights the importance of performing a thorough endoscopic examination to identify subtle mucosal abnormalities that can aid in establishing an etiology of IDA in patients with occult GI bleeding who are on anticoagulation. Evaluation of malignant GI tract melanoma includes evaluation for a possible primary cutaneous source, as well as evaluating for metastatic disease.

[2638] **Figure 1.**

S2639

Pseudoaneurysm: A Very Real GI Bleed

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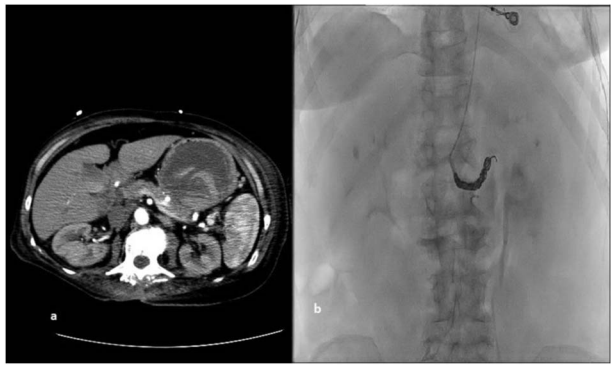
Introduction: There are different causes and a broad spectrum of clinical presentations of upper gastrointestinal bleeding (UGIB). There are some rare causes of UGIB that can prove fatal if not identified and treated early. We present the case of a patient with known history of alcohol abuse disorder and recurrent acute pancreatitis complicated by splenic artery pseudoaneurysm causing GI bleed.
Case Description/Methods: 60 years old female with past medical history of hepatitis C, recurrent acute alcoholic pancreatitis and liver cirrhosis was hospitalized for administration of intravenous antibiotics to treat infected back wound. On day 12 of hospitalization, she developed hematemesis with hemodynamic instability. She underwent esophagogastroduodenoscopy (EGD) showing a large >5 cm protuberant soft mass-like lesion with superficial ulceration and no active bleed in the gastric fundus. Appearance was concerning for a vascular lesion and CT abdomen was done. CT showed interval enlargement of a presumed previously demonstrated pancreatic pseudocyst measuring 8.6 × 9.1 × 11.1 cm. Density of the pseudocyst contents on CT ranged between 52-56 Hounsfield units consistent with recent bleeding (Figure 1A). Patient developed hematochezia after which CT angiogram with GI protocol was done which did not show active extravasation. Based on imaging, it was initially assumed that patient had hemorrhaged into the presumed pseudocyst that had eroded into the wall of fundus, as seen in the EGD. Patient underwent arterial angiogram with Interventional Radiology (IR). Splenic arteriogram found a splenic artery pseudoaneurysm, instead of a pseudocyst, with new active contrast extravasation supplied by splenic artery. The pseudoaneurysm was most likely secondary to acute recurrent pancreatitis. She underwent Gel foam coil embolization of splenic artery (Figure 1B) with resolution of UGIB.
Discussion: Bleeding from splenic artery pseudoaneurysm is very rare with less than 200 cases of splenic artery pseudoaneurysm reported in literature. It may present as an upper or lower GI bleed, or as in our case, both. Suspicion is reasonable in a patient with history of pancreatitis. Bleeding from splenic artery pseudoaneurysm is essential to identify early to reduce morbidity and mortality. This case brings attention to an infrequent yet life-threatening source of GI bleed which may be overlooked as it is rarely encountered and emphasizes the role of IR in management of hemorrhagic pseudoaneurysms.



[2639] **Figure 1.** (a) CT abdomen demonstrating the presumed pseudocyst. (b) Gel foam coil embolization of splenic artery.

S2640

Rectal Dieulafoy's Lesion Presenting as Massive Hematochezia With a Characteristic Endoscopic Appearance

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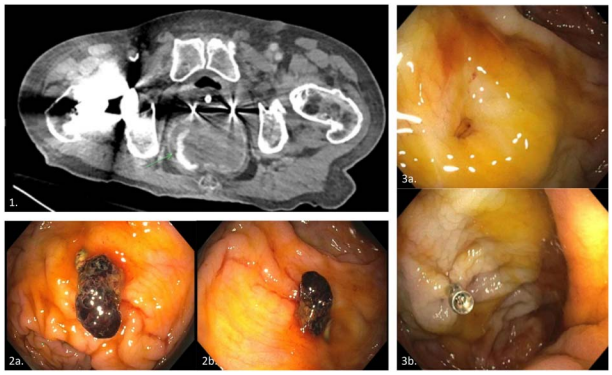
Introduction: Dieulafoy's lesions (DLs) are a rare cause of gastrointestinal (GI) bleeding, accounting for an estimated 2% of all acute GI bleeding cases. Furthermore, DLs are often found in the stomach and the esophagus, with rectal DLs being uncommon. We present the case of an older male patient, with history of previous cardiac arrest and acute kidney injury, who experienced massive hematochezia from a rectal Dieulafoy's lesion.

Case Description/Methods: A 75-year-old male in the medical intensive care unit (ICU) developed painless massive hematochezia. The patient was initially admitted after being found down and had a complicated hospital course. At the time of consultation, large clots per rectum were reported, which subsequently converted to bright red bleeding. The day before GI evaluation, the patient's blood pressures were hypertensive to 155/66 mmHg, but subsequently dropped significantly to 81/43 mmHg. The rectal examination demonstrated a significant amount of bright red blood. Laboratory results showed a hemoglobin drop from 13.8 g/dL to 8.4 g/dL over four days despite four units of packed red blood cells transfused in-between. Computed tomography angiogram suggested contrast pooling/bleeding, with no definite source identified (Figure 1). The colonoscopy demonstrated extensive diverticulosis without any signs of active bleeding. On examination of the rectum, a blood clot with a small visible point of mucosal attachment was noted without any apparent ulcerations or erosions of the surrounding mucosa (Figure 2a and b). Epinephrine was injected at the periphery of the blood clot, which was subsequently removed with a snare, and revealed a raised nipple-like artery suggestive of a rectal Dieulafoy's lesion (Figure 3a). A hemostatic clip was placed as a secondary modality for hemostasis (Figure 3b). The patient was observed in the ICU and remained hemodynamically stable. He had no further episodes of hematochezia and no re-bleeding.
Discussion: Dieulafoy's lesions are a rare but important cause of GI bleeding due to the severity of bleeding it often induces if left untreated. They are most commonly found in the stomach and the esophagus but can rarely present in the rectum. Due to the intermittent nature of the bleeding and the minimal mucosal defect, diagnostic evaluations remain limited. Our case demonstrates a classic endoscopic appearance of rectal DLs, which requires careful inspection during withdrawal. Once identified, these lesions can be successfully treated with two modalities of hemostasis.



[2640] **Figure 1.** Arterial phase imaging demonstrating increased density material within the rectum (demarcated by green arrow), suggestive of contrast pooling/bleed. No definite source was identified. (a and b) Adherent blood clot with a point of mucosal attachment. (a) Successful removal of adherent clot after hemostasis with epinephrine injection (4 ml of 1:10000). (b) Successful placement of a hemostatic clip.

S2641

Rare Case of Inverted Meckle's Diverticulum Leading to Blood Loss Anemia and Highlighting the Importance of Video Capsule Endoscopy in Detecting Obscure Small Bowel Bleeds

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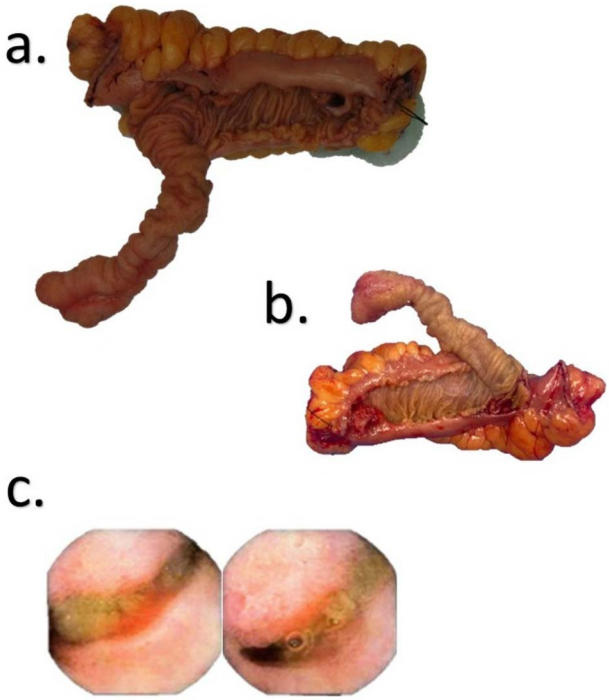
Henry Ford Jackson, Jackson, MI.

Introduction: Acute gastrointestinal (GI) bleeding is a serious medical condition and a common cause of admission with a mortality rate of 5-10%. It is estimated that a small fraction of GI bleeds is of obscure origin with a normal EGD (esophagogastroduodenoscopy) and colonoscopy. Small bowel bleeding accounts for 5% of all GI bleeding and is the most common indication for video capsule endoscopy (VCE). VCE is a novel procedure with high sensitivity to detect possible obscure gastrointestinal bleeding.
Case Description/Methods: The patient is a 51-year-old male with a history of pulmonary embolism treated with ongoing anticoagulation who presented for shortness of breath, weakness, and dizziness over the past couple of months. The patient's physical examination was unremarkable. The patient was found to have symptomatic iron deficiency anemia with a hemoglobin of 6.9 and heme-positive stool. He underwent an EGD and colonoscopy, which showed no significant abnormality to explain iron-deficiency anemia. Therefore, the patient was advised to undergo a VCE for his small bowel, which showed a bleeding polypoid lesion in the distal ileum. CT endoscopy showed a fat-containing polypoid lesion with peripheral enhancement connected to ileal loops with a fat-containing stalk in the distal ileum. Imaging findings were consistent with Meckel's diverticulum. No other bowel lesions are noted. The patient was referred for surgical small bowel resection. Surgery revealed a long-stalked polypoid mass associated with an ulcerated inverted Meckel's diverticulum in the distal ileum. (Figure)
Discussion: A colonoscopy and EGD should be considered in patients with overt iron deficiency anemia. However, if the upper and lower endoscopy is negative, further investigation of the small bowel may be necessary. Capsule endoscopy is the preferred initial diagnostic test for small bowel evaluation in patients with overt bleeding. VCE can help detect sources of bleed in the small bowel, such as malignancy. Early detection is important in the case of malignancy for optimal outcomes. In our case, the patient had a Meckel's diverticulum, which is rare and usually clinically silent but can ulcerate and become a source of bleeding. Furthermore, if a source of bleed is detected, it may be rectified by surgical intervention.



[2641] **Figure 1.** a. & b. Pictures of the resected long-stalked polypoid mass associated with an inverted Meckel's diverticulum in the distal ileum c. Images from Video Endoscopy showing GI bleed from the inverted Meckel's diverticulum.

S2642

Rare Case of Upper Gastrointestinal Bleeding Secondary to Hepatocellular Carcinoma

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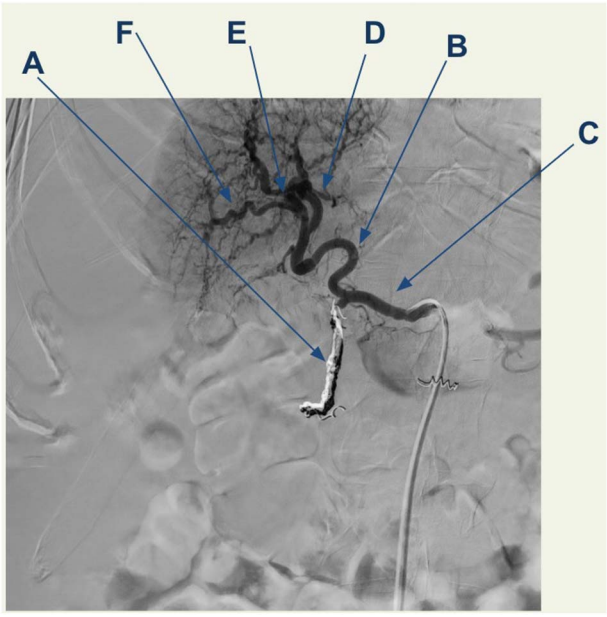
McLaren Macomb, Macomb, MI.

Introduction: Among gastrointestinal pathologies, gastrointestinal bleeding (GIB) is the most common cause of hospitalization within the United States, and consequently costing the healthcare system $5 billion.[1] Common causes of upper gastrointestinal bleeding(UGIB) are gastric or duodenal ulcers, gastritis or duodenitis, and esophagitis. We present a rare case of hepatocellular carcinoma (HCC) extending into the duodenum causing an UGIB.
Case Description/Methods: 64 year old male with history of alcohol abuse, developed multifocal HCC and decompensated cirrhosis presents with fatigue and weakness. Additionally, patient has multiple admissions for UGIB stabilized by gastroduodenal artery embolization after failing endoscopic treatment. At admission, patient was hypotensive at 100/57 and anemic with a hemoglobin 5.8. Computed tomography and angiogram showed a exophytic lesion supplied by the cystic artery eroding into the duodenal bulb. Band and coil embolization of the tumoral arteries arising from the cystic artery was performed. The patient had worsening hematochezia and hemodynamic instability, and deemed inoperable. He was not a transplant candidate given his cancer burden and later expired. (Figure)
Discussion: Esophagogastroduodenoscopy (EGD) and angioembolization play vital roles in treatment of UGIB and surgery is used as salvage therapy. EGD is used to provide diagnosis and therapy. In an acute setting the Glasgow Blatchford Score (GBS) is used for risk assessment. EGD within 24 hours is recommended for patients and within 12 hours for variceal bleeding. A combination of thermal and nonthermal coagulation, submucosal injection, and clipping can facilitate hemostasis. Contact thermal therapy, includes bipolar and unipolar cautery, allows for pressure application at the bleeding point with thermal energy for the coagulation. Non-contact thermal technique such as argon plasma coagulation uses ionized argon gas to ablate hemorrhagic tissue. Multiple nonthermal techniques including injection sclerotherapy and clipping. Injection sclerotherapy consists of injections of epinephrine, or other substances, surrounding the bleeding site with thermal therapy. Angioembolization is used for bleeding when endoscopic interventions fail. A tumor rupture is life-threatening and there are limited reports of UGIB secondary to HCC, emphasizing the importance of our case.



[2642] **Figure 1.** A: Prior gastroduodenal artery embolization B: Proper hepatic artery C: Common hepatic artery D: Left hepatic artery E: Right hepatic artery F: Cystic artery.

REFERENCE
1. Harrison 's: Principles of Internal Medicine. 21st Ed.. United States: McGraw-Hill Education, 2022

S2643

Rare Gastrointestinal Bleeding in a Patient With Severe Plasmodium Falciparum Malaria

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Introduction: Malaria clinically presents as a systemic febrile illness; the most severe form is caused by Plasmodium Falciparum. In addition to hematologic manifestations such as severe anemia, thrombocytopenia, and coagulopathy, malaria patients uncommonly experience gastrointestinal complications such as GI bleeds, splenic rupture and subacute intestinal obstruction. We report a severe case of P. falciparum malaria complicated by a GI bleed.
Case Description/Methods: A 66-year-old male with recent travel to Nigeria and a medical history of hypertension was brought to the ER with altered mental status, abdominal pain and a 25lb weight loss in the last month. In the ED he spiked a fever to 102F, prompting a thorough infectious workup. An LP was remarkable for many RBCs, glucose 81 and protein 47. CSF was negative for meningitis/encephalitis; he did not have EBV, CMV or HIV. Blood and fungal cultures were negative. Due to his recent travel history, our patient had a 5-thin and 2-thick malarial smear which showed P. falciparum malaria ring forms. He was started on cefepime, vancomycin, metronidazole, atovaquone/proguanil. Over the next 12-hours, the patient rapidly deteriorated with a large coffee ground emesis, a hemoglobin drop from 12.1 to 8.6, and a thrombocytopenia from 135 to 15. Hemolysis labs were positive: haptoglobin < 30, LDH 607, reticulocyte 14.6%, fibrinogen 112. Upper endoscopy showed Grade-C esophagitis, an oozing duodenal ulcer and hematin all throughout the stomach wall. Abdominal ultrasound and CT showed no acute intra-abdominal pathologies. With new ongoing hematemesis and melena, he went into progressive septic vs hemorrhagic shock and required vasopressors and stress-dose steroids.
Discussion: The hematologic manifestations often seen in malaria rarely lead to massive GI bleeds. Our patient did not use NSAIDS, he was not tested for H. Pylori, and despite the stress of his acute severe illness, he had no other risk factors for duodenal ulceration. High levels of free oxygen radicals and tumor necrosis factor may have played a role in the etiology of his peptic ulcer formation. Malarial hemolysis results from the release of cytokines, macrophage recruitment, causing a cytokine storm and activation of endothelial adhesion molecule type 1, E-selectin, enhancing cytoadherence of parasitized cells, mediating lactic acidemia, shock, gut mucosal damage and increased permeability. Despite aggressive measures, our patient ultimately developed shock and died.

S2644

Radiation-Induced Refractory Hemorrhagic Gastropathy Resulting in Transfusion Dependence

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Introduction: Radiation induced hemorrhagic gastropathy is a rare and often serious complication of radiation therapy with no established management guidelines. We present a case of severe radiation induced hemorrhagic gastritis refractory to conventional therapeutic modalities.
Case Description/Methods: 54-year-old male with a past medical history of esophageal adenocarcinoma status post esophagectomy, chemotherapy, and low dose radiation. One month later, the patient presented to the ED for hematochezia with a hemoglobin level of 8.5 g/dl. Endoscopy revealed ulceration at the gastroesophageal anastomosis with oozing blood which was treated with argon plasma coagulation. The patient was readmitted due to outpatient labs showing a hemoglobin of 6.5 g/dl. He underwent four unsuccessful endoscopies with hemospray and APC. He was subsequently transferred to Henry Ford Hospital for escalation of care. On presentation vital signs were stable: BP 115/85 mmHg, HR 90 beats/min, and RR 15 breaths/min. Labs revealed a hemoglobin of 6.4 g/dl, platelet count of 155,000/L, PT of 12.1s, aPTT of 28.5 s, and INR of 1.1. He was started on sucralfate, protonix, and octreotide. Repeat EGD showed findings consistent with radiation induced gastropathy and arteriovenous malformations with diffuse hemorrhaging. The patient subsequently had six unsuccessful upper endoscopies with APC, hemospray, and radiofrequency ablation. Thoracic Surgery recommended ongoing medical management. Experimental treatments including aminocaproic acid, bevacizumab, and steroids were implemented with little benefit. Gastrectomy was subsequently recommended which the patient refused. He was transferred to a long-term acute care facility in order to continue supportive blood transfusions.
Discussion: The incidence of radiation induced hemorrhagic gastropathy is low, however, it is associated with a high mortality rate. Although gastrointestinal ulceration is common post radiation, the extent of bleeding seen in this patient is uncommon. Notably, there are no standard treatment guidelines in place for these cases. APC, radiofrequency ablation, and targeted prednisolone are often utilized to control bleeding. This is a unique case of highly refractory radiation induced hemorrhagic gastritis. Despite receiving low dose radiation, the patient developed severe hemorrhagic gastropathy. Further research into potential therapies and establishment of official management guidelines could potentially help prevent unfavorable outcomes in these patients.

S2645

Remnant Stomach Bleeding in Roux-en-Y Gastric Bypass Anatomy Managed by Transgastric Endoscopic Ultrasound-Guided Stenting and Hemostasis

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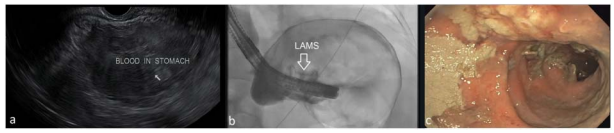
Introduction: Upper GI bleeding identification and treatment is challenging in patients with Roux-en-Y gastric bypass (RYGB) due to their complex anatomy. Remnant stomach and duodenal bleeding in particular can be very challenging to reach and manage endoscopically due to the long length of the Roux and biliary limb.
Case Description/Methods: A 58-year-old female patient, who underwent gastric bypass in 2004, was diagnosed with fibular fracture and placed on NSAIDs 2 weeks before presenting to the hospital with melena and anemia. In addition to medical management of hypovolemic shock, the patient underwent upper endoscopy (EGD), colonoscopy, small bowel enteroscopy, and angiography followed by left gastric artery embolization all of which failed to localize or stop her bleeding. The patient's hemoglobin dropped to a nadir of 5.7, and she was referred for upper endoscopic ultrasound which demonstrated a very large clot burden within the excluded stomach (Figurea), and an ultrasound-guided gastrogastric lumen apposing metal stent (LAMS) was placed from the gastric pouch into the excluded stomach. The stent was successfully dilated and fixed with stay sutures (Figure1b). A large burden of clot was subsequently removed from the excluded stomach and duodenum. A deep ulcer with active bleeding was localized to the posterior wall of the duodenum. Bipolar cautery and epinephrine injection were used initially but failed to achieve hemostasis. Over-the-scope clip was considered but given the lack of having a mature gastrogastric fistula tract it was instead elected to use hemostatic powder application (Figurec). With this, complete hemostasis was achieved, and the LAMS stent was left in place for subsequent intervention(s) as needed. The patient continued to pass melena for 3 days post procedure with stable Hb readings and follow up EGD showed no signs of active bleeding in the excluded stomach or duodenum. At 6 weeks, the LAMS was removed and the gastrogastric fistula tract was closed with argon plasma resurfacing and suture.
Discussion: Identification the source of UGIB in RYGB patients can be challenging. Accessing the excluded stomach should be considered early in the evaluation if the EGD shows no obvious source of bleeding or if other evaluation (such as angiogram) suggests a remnant stomach or duodenal source.



[2645] **Figure 1.** (1a) Endosonographic photo showing blood in the remnant stomach, (1b) Fluoroscopy showing proper placement and dilatation of the gastrogastric LAMS , (1c) Endoscopic photo showing complete hemostasis after hemostatic powder application.

S2646

Role of Point-of-Care Ultrasound in Diagnosis of Upper GI Bleed Secondary to Aorto-Esophageal Fistula

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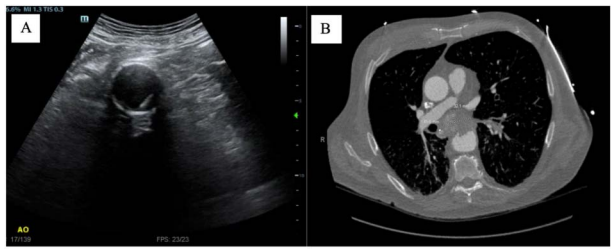
Introduction: Aorto-esophageal fistula (AEF) is a rare etiology of upper gastrointestinal bleed (UGIB) with a high mortality rate. In patients with vascular pathology or aortic aneurysms presenting with hematemesis and Chiari's triad (midthoracic pain, sentinel arterial hemorrhage and exsanguination after symptom-free interval), there should be high suspicion for AEF as mortality is high even with timely diagnosis and surgical intervention. Diagnostic endoscopy, aortography, or thoracic computed tomography angiography (CTA) are current standards of care but may be unobtainable in emergent cases. Here, we report a case of UGIB in which bedside Point-of-Care Ultrasound (POCUS) facilitated prompt diagnosis of AEF.
Case Description/Methods: A 75-year-old male with history of diabetes, uncontrolled hypertension and abdominal aortic aneurysm presented with large volume hematemesis resulting in two episodes of PEA arrests. ROSC was achieved with aggressive hemodynamic support. Gastroenterology was consulted, but the patient was deemed too unstable for endoscopy. Octreotide and pantoprazole drips were initiated. Placement of a Blakemore tube was attempted. POCUS demonstrated descending aortic intraluminal flap consistent with aortic dissection. After stabilization, CTA was pursued which showed descending thoracic aortic aneurysm with penetrating ulcer and active extravasation into the subcarinal mediastinum. Vascular surgery was urgently consulted but the patient became increasingly unstable and ultimately expired.
Discussion: AEF is a rare cause of UGIB that should be suspected in patients with large volume hematemesis, chest pain, hemodynamic compromise. Index of suspicion should be high in patients with a history of aortic aneurysm, esophageal malignancy, ingestion of foreign body or recent esophageal surgery. Temporization, rapid diagnosis, and surgical intervention are critical, but guideline directed diagnostic modalities are limited in hemodynamically unstable patients. Here, POCUS allowed prompt diagnosis several hours before the patient was stable enough for CTA. This case demonstrates that POCUS has a diagnostic role in massive UGIB in patients with a high pretest probability of vascular pathology and may limit unnecessary invasive testing in select patients who are unlikely to benefit from endoscopy. Further research is needed to determine the diagnostic role of POCUS in UGIB, but it should be considered in patients with high suspicion for AEF (Figure).



[2646] **Figure 1.** (A) POCUS showing descending aortic intraluminal flap consistent with aortic dissection. (B) CTA showing descending aortic aneurysm with penetrating ulcer resulting in hematoma of the subcarinal mediastinum.

S2647

Secondary Aorto-Esophageal Fistula Caused by Graft Erosion Temporized by Esophageal Stent Placement

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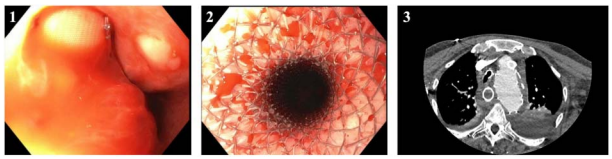
Introduction: Aorto-enteric fistulas (AEF) are abnormal connections between the aorta and the gastrointestinal (GI) tract[1] which are associated with massive GI hemorrhage and carry a high risk of morbidity[3–5]. We discuss a case of a cirrhotic patient with a history of varices who presented with hematemesis and was found to have catastrophic bleeding due to an aorto-esophageal fistula.
Case Description/Methods: A 59-year-old male with a history of cirrhosis, esophageal varices, heart failure, and aortic arch aneurysm status post repair, presented with GI bleeding (GIB). Two months prior, the patient had undergone thoracic endovascular aortic aneurysm repair (TEVAR). EGD at the time of that admission for screening showed grade I varices that were not banded. With respect to this admission, he initially presented to an outside institution with hematemesis. He underwent EGD which showed a 1-2 mm esophageal ulcer at 21 cm from the incisors and blood throughout the exam limiting examination and patient was transferred for evaluation. Our emergent EGD revealed a large clot in the upper esophagus located at 21 cm with active arterial bleeding. Suctioning revealed a graft with suture materials (Figure), consistent with secondary aorto-esophageal fistula. While contacting surgery, we placed an esophageal stent to attempt hemostasis and temporize bleeding (Figure 2). The patient underwent stat CTA (Figure 3) and multiple discussions with CT and vascular surgery ensued. Surgical treatment would have required extra-anatomic aortic bypass resection and esophageal resection and diversion, which was deemed to be

high risk and fatal given his overall clinical condition and medical history. The CTA showed complete sealing of the bleed due to stent placement, which allowed for stabilization of the patient, reevaluation of his care, and treatment discussions with his family. Family elected to pursue comfort care and the patient expired one day later.

Discussion: The overall prevalence of secondary aortoenteric fistulas are between 0.77% to 4.8%, and esophageal involvement is even less common. Our case underscores the importance of clinical suspicion and rapid investigation in patients with TEVAR history who later present with persistent GIB. Esophageal stents in the setting of AEF due to TEVAR have been previously reported as palliative and, recently, temporizing measures[6–8] . Our use of esophageal stent decreased the rate of blood loss while discussions ensued regarding plan of care and giving time for his family to arrive.



[2647] **Figure 1.** (1) shows graft erosion with suture at 21 cm from incisors. (2) shows esophageal stent placement with proximal end at 20 cm from incisor. (3) shows the presence esophageal stent and TEVAR Graft with no evidence of extravasation or graft protrusion as seen on CTA chest, abdomen, and pelvis.

S2648

Remember to Screen the Spleen: A Case Study of Spontaneous Splenic Rupture

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Introduction: Splenic rupture is a potentially life-threatening condition often associated with trauma or viral infection. Most cases of splenic rupture are due to trauma, viral infection, lymphoproliferative disease, malaria, tick borne illness, splenic neoplasms, connective tissue disease, or in one case, sneezing. Spontaneous splenic rupture (SSR) is a rare condition with less than five cases reported. In this case, we present a 20-year-old male who was seen with abdominal pain who was found to have an SSR with no clear etiology.

Case Description/Methods: A 20-year-old male with no relevant past medical history presented with abdominal pain that radiated to the left shoulder. The patient reported the pain began after an episode of emesis which occurred 12 hours prior to arrival. He reported experiencing shortness of breath and pain on inspiration. He denied any fall or trauma, recent travel or sick contacts, fevers, weight loss, or night sweats. His social history was significant for occasional marijuana use. Upon physical exam, the patient had diffuse abdominal tenderness most pronounced in the left upper quadrant without any palpable masses. Relevant labs included a hemoglobin of 12.2, WBC count within normal limits and unremarkable manual differential, and an INR of 1. Blood parasite, heterophile antibodies, COVID, influenza, CMV, and HIV were negative. Computed tomography angiography (CTA) revealed hematoma at the splenic hilum. Interventional radiology was consulted and did not recommend intervention at time of initial presentation. Patient was admitted; his hemoglobin remained stable and he was monitored with serial abdominal exam then discharged the following day. Imaging was repeated one month later which revealed near complete resolution of hematoma. (Figure)

Discussion: SSR should be considered on the differential diagnosis of physicians when encountering patients who present with LUQ pain with unclear etiology. The patient presented with the characteristic Kehr's sign (left diaphragmatic irritation resulting in referred pain to the left shoulder) but not the Ballance sign (palpable tender mass in the left upper quadrant). The incidence of SSR is estimated to be around 1 to 7% with a mortality rate of 12.2% so a broad differential for young patients presenting with abdominal pain must be entertained and should include splenic rupture as it is a potentially life-threatening condition.

[2648] **Figure 1.** A. Transverse view of splenic hilum hematoma measuring about 5.7cm in size; note the mild hemoperitoneum also present. B. Coronal view of the hematoma. C. Coronal view demonstrating near complete resolution of patient's hematoma about 15 days later.

S2649

Severe Gastrointestinal Bleeding Following Transesophageal Echocardiography and Ablation for Atrial Fibrillation: A Case Report

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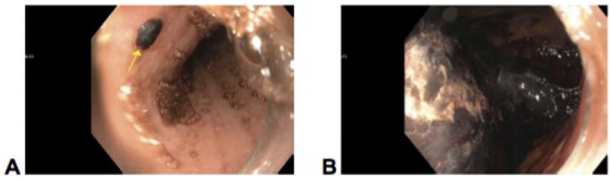
Introduction: Transesophageal echocardiograms (TEE) are performed to evaluate a variety of cardiac disorders. It involves blind intubation of the esophagus and carries a small risk of esophageal injury. This case describes a case of severe upper gastrointestinal bleeding (GIB) following TEE and ablation for atrial fibrillation.
Case Description/Methods: A 66-year-old male with a history of atrial fibrillation and upper GI bleeding underwent TEE with ablation with the intention of doing a Watchman procedure in the future. Anticoagulation had been resumed two weeks prior to the procedure. The patient underwent ablation and shortly afterwards had hematemesis followed by an episode of melena. The hemoglobin fell from 11.2g/dl to 8.7g/dl and the patient required vasopressor support and transfusion. EGD revealed many 2-3 mm non-actively bleeding erosions with clots at their bases throughout the entire esophagus, with a large blood clot found in the cardia and gastric body (Figure). Although no active bleeding was noted, the patient continued to have a hemoglobin drop so a CT angiogram was performed which was unrevealing. The patient was managed conservatively and stabilized with no further episodes of bleeding, and his anticoagulation was eventually resumed without further complications.
Discussion: This case illustrates the occurrence of gastrointestinal erosions and bleeding following TEE and ablation. Severe gastrointestinal hemorrhage is a rare but known adverse event associated with TEE and ablation. The incidence of TEE-related hemorrhage has been estimated to be between 0.02% to 1.0% and is often due to direct mucosal trauma[1]. Ablation may also induce thermal injury to the esophagus due to the proximity of the posterior left atrium and esophagus, causing esophageal ulcerations that can potentially lead to more serious complications such as atrioesophageal fistulae[2]. Caution should be taken when evaluating patients planned for such procedures, especially those with history of prior GIB, and anticoagulation should be held if possible.



[2649] **Figure 1.** A: Non-actively bleeding 3mm erosion with clot at its base in the upper third of the esophagus. B: Large blood clot in the gastric body.

REFERENCES
1. Hilberath J.N., Oakes D.A., Shernan S.K., et al. Safety of transesophageal echocardiography. J Am Soc Echocardiogr, 23 (2010), pp. 1115-1127
2. Martinek M., Meyer C., Hassanein S., et al. Identification of a high-risk population for esophageal injury during radiofrequency catheter ablation of atrial fibrillation: procedural and anatomical considerations. Heart Rhythm, 7 (2010), pp. 1224-1230

S2650

Recurrent Gastric Variceal Hemorrhage From Eroding Endovascular Coil

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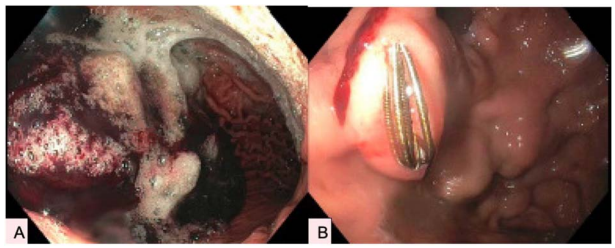
Introduction: Coil and Plug-assisted transvenous obliteration of gastric varices is a variation of balloon-occluded retrograde transvenous obliteration (BRTO) that alleviates the complications related to prolonged indwelling balloon time and the use of sclerosing agents. Few cases of coil migration have been reported in the literature, but the overall incidence remains unknown. We report a case of recurrent gastric variceal hemorrhage from erosion of an endovascular coil after coil and plug-assisted variceal obliteration.
Case Description/Methods: A 32-year-old female with alcoholic cirrhosis as well as portal and splenic vein thrombus presented with hematemesis, hemodynamic instability and Hgb of 5. She underwent EGD that showed small non-bleeding esophageal varices and large gastric varices with stigmata of recent bleeding. Given unfavorable anatomy for TIPS, she underwent transhepatic coil and plug assisted obliteration of multiple gastric varices and angioplasty of partially thrombosed portal and splenic veins. She remained asymptomatic on follow-up with improved liver function and recanalized portal and splenic veins on CTA. However, four months later, she was readmitted for hematemesis following a large meal. EGD showed a large amount of clotted blot in the stomach (Fig 1A) and cardiofundal varices with protruding coils and minimal active oozing from the varices above the coils (Fig 1B). She underwent plug assisted retrograde obliteration (PARTO) through gastrorenal shunt. She remained stable and was discharged with plans for possible TIPS in the future.
Discussion: Optimal management of gastric variceal hemorrhage often requires a multidisciplinary approach. BRTO is a well-accepted procedure for the treatment of isolated gastric varices associated with large gastrorenal shunts. BRTO involves the prolonged use of a balloon catheter and retrograde injection of sclerosing agents via the shunt outflow. BRTO has been associated with life-threatening complications such as pulmonary embolism, portal vein thrombosis, and anaphylaxis. As such, the use of vascular plugs or coils to achieve variceal occlusion has become popular owing to their safety, decreased procedure times and comparable efficacy. Attempts should be made to deploy coils proximally away from the mucosa, to avoid erosion through the thin walls of varices and overlying mucosa. This case highlights a rare but important complication of coil-assisted variceal obliteration.



[2650] **Figure 1.** A. Large amount of clotted blood in the stomach on EGD; B. Coil erosion and active oozing.

S2651

Retroperitoneal Leiomyosarcoma: An Unusual Cause of Gastrointestinal Bleeding

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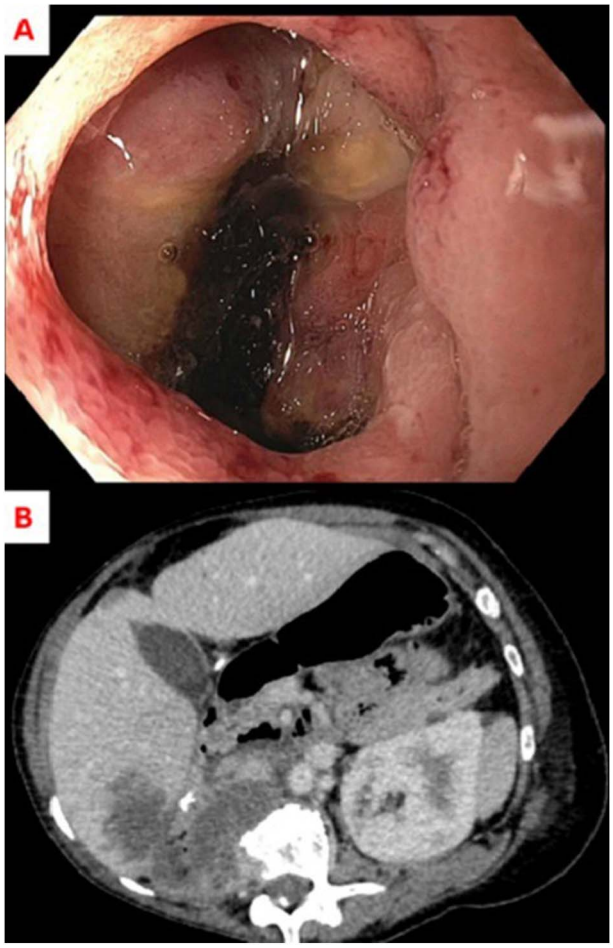
Introduction: Retroperitoneal leiomyosarcoma (RLMS) is a malignant tumor originating from a smooth muscle tissue, and is rare with an incidence rate of 2 per million population. The large retroperitoneal space allows slow growth of the tumor to significant size before compressive symptoms arise. Diagnosis of such tumors as a result of a tumor invasion to the gastrointestinal tract is rare. We herein present a case of a patient diagnosed with a RLMS invading the duodenum and presenting with gastrointestinal bleeding.
Case Description/Methods: A 55 year-old woman presented to the emergency department for the evaluation of anemia with a HGB of 7.4 g/dL. Past medical history of Willms tumor and breast cancer was noted. Upper endoscopy revealed a large infiltrative and ulcerated mass with stigmata of recent bleeding in the second portion of the duodenum. Colonoscopy was unremarkable. Computed tomography revealed

a large retroperitoneal mass measuring up to 11 cm involving the right adrenal gland, the posterior right hepatic lobe and abutting duodenum, ascending colon and inferior vena cava, also extending to involve the iliopsoas and paraspinal soft tissues. Abdominal lymph nodes noted in normal size. Surgical pathology from the duodenal mass revealed a high grade leiomyosarcoma. Due to the extent of disease, surgical resection was deemed unsafe. Unfortunately the patient died before chemotherapy initiation. (Figure)

Discussion: Soft tissue sarcomas represent less than 1 percent of adult malignancies. Approximately 50 percent originate in the extremities, with only 13 percent originate from the retroperitoneal space. Histologic types include primarily liposarcoma and leiomyosarcoma. Overall, retroperitoneal leiomyosarcoma (RLMS) is rare with an incidence rate of 2 per million population. The retroperitoneum often accommodates a relatively large tumor before symptoms arise. Non specific abdominal pain and palpable mass can be the presentation. Abdominal imaging often reveals a large retroperitoneal tumor, compressing, invading or spreading metastasis to organs or structures. Careful attention is needed to avoid needle tract seeding during tissue sampling. The relative mortality is high as curative en bloc resection is often not feasible safely. Systemic chemotherapy or radiotherapy have been reported of low yield in advanced, unresectable stages. Endoscopic tissue diagnosis from RLMS tumors invading the duodenum is very rare. The atypical presentation described herin enabled a rapid and safe sampling.



[2651] **Figure 1.** A - Endoscopic findings. A large infiltrative and ulcerated mass with stigmata of recent bleeding in the second portion of the duodenum. Surgical pathology revealed a high grade leiomyosarcoma. B - Computed tomography of the abdomen and pelvis. Large retroperitoneal mass measuring up to 11 cm involving the right adrenal gland, the posterior right hepatic lobe and abutting duodenum, ascending colon and inferior vena cava, also extending to involve the iliopsoas and paraspinal soft tissues.

S2652

Severe Lupus Enteritis Complicated by Intractable Gastrointestinal Hemorrhage

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Introduction: Lupus enteritis (LE) is a rare presentation of systemic lupus erythematosus (SLE) which can manifest as gastrointestinal (GI) hemorrhage, bowel perforation, and even death. Endoscopic intervention, though often performed, rarely leads to control of disease and may carry a risk of considerable harm. Immunosuppression remains the cornerstone for the treatment of the underlying disease process. Herein, we demonstrate the utility of endoscopy and immunosuppression in a patient with LE.

Case Description/Methods: A 22-year-old female with SLE, Sjögren syndrome, and bipolar disorder presented to a tertiary care center with one day of nausea, vomiting, non-bloody diarrhea, and severe abdominal pain. The patient was hospitalized and computed tomography revealed findings suggestive of LE. Over the course of her hospital stay, she developed profound hematochezia requiring massive transfusions on multiple occasions. The GI service was consulted for assistance with severe bleeding from LE; she underwent a total of 4 colonoscopies, 2 anterograde enteroscopies, and 1 esophagogastroduodenoscopy; all revealed diffuse ulcerations and oozing lesions that could not be treated endoscopically. She also underwent mesenteric angiography with coil embolization of the ileal branch of the superior mesenteric artery which had active extravasation into the GI tract. However, this did not curb the severity of her bleeding. Her GI hemorrhage was complicated by warm-autoimmune hemolytic anemia and disseminated intravascular coagulation resulting in a nadir hemoglobin of 2.2 g/dL despite receiving high dose systemic corticosteroids and cyclophosphamide. She required a total of 43 units of packed red blood cell transfusions. The patient eventually achieved adequate clinical response after 3 days of intravenous immunoglobulin infusion and 5 cycles of plasmapheresis.

Discussion: GI hemorrhage in the setting of immune-mediated enteritis and colitis should be managed with aggressive immunosuppression. In the absence of hemodynamic instability, repeat endoscopies after initial diagnostic endoscopy should be limited due to the low likelihood of achieving endoscopic hemostasis, while carrying a considerable risk of procedural and sedation-associated adverse events. In the setting of active extravasation, vascular embolization should be pursued cautiously. At all times, the focus of treatment should be on early, aggressive immunosuppression and the initiation of advanced therapies such as plasmapheresis.

S2653

Recurrent Bleeding Gastrointestinal Angioectasias and Acquired Von Willebrand Deficiency (Heyde's Syndrome) Developing in the Setting of Mild Hypertrophic Obstructive Cardiomyopathy

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Introduction: Heyde's Syndrome is classically described as a triad of gastrointestinal arteriovenous malformations, aortic stenosis (AS), and acquired von Willebrand syndrome (aVWS). Acknowledged as under-diagnosed, the syndrome is frequently missed even in the presence of classically associated moderate-to-severe AS. Perhaps compounding diagnostic difficulty are more recent reports of alternative forms of structural heart disease, including hypertrophic obstructive cardiomyopathy (HOCM), that, although rarer, are capable of producing the syndrome as well.
Case Description/Methods: 68-year-old woman with mild hypertrophic obstructive cardiomyopathy that resulted in 5 years of gastrointestinal bleeding episodes before the discovery of bleeding duodenal angioectasias. Initially diagnosed with "HOCM morphology" without evidence of dynamic obstruction on stress echocardiogram, bleeding episodes began to develop shortly after routine annual surveillance echo demonstrated a progression to mildly increased left ventricular outflow tract (LVOT) gradient. Cardiac magnetic resonance imaging (MRI) not only confirmed mild primary HOCM without secondary cause of hypertrophy, but also demonstrated mild flow acceleration across the LVOT, consistent with the hypothesized hemodynamic turbulence and sheer-stress believed to be the mechanism behind acquired von Willebrand deficiency. Within a year, gastrointestinal bleeding would ensue, beginning a prolonged clinical course with multiple hospitalizations for symptomatic anemia requiring transfusions. The eventual discovery of angioectasias prompted von Willebrand Factor analysis which found evidence of acquired deficiency and confirmed the diagnosis of Heyde Syndrome. The patient was subsequently referred for evaluation and definitive treatment of her HOCM with septal ablation, an intervention with which case series have demonstrated the potential for reversal of von Willebrand Factor deficiency and bleeding episodes.
Discussion: Often a delayed diagnosis owing to the seemingly disparate constellation of findings in Heyde's, this particular case additionally highlights that even more mild states of structural heart disease can provoke the syndrome outside of previously reported severe structural disease. Diagnostic suspicion must remain high and von Willebrand factor analysis considered in the combined presence of GI bleed and mild cardiomyopathy and valvulopathy.

S2654

Severe Rectal Bleeding due to Foreign Body Ingestion

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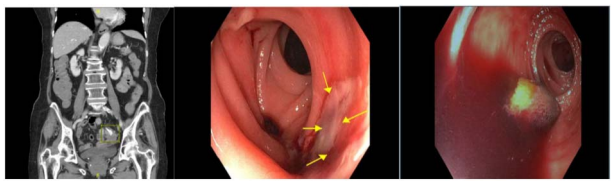
Introduction: Foreign body ingestion is often seen in children and the elderly. Food particles such as chicken or fish bones are the most often ingested foreign bodies; however, most patients do not recall ingestion. Clinically, most foreign bodies pass through the GI tract without issue, however, complications occur in roughly 1% of cases. Complications of foreign body ingestion include bleeding, bowel obstruction, and perforation. We present a case of a 95-year-old female presenting with bright red blood per rectum found to have foreign body impaction with ulceration in the rectosigmoid region.
Case Description/Methods: A 95-year-old female with past medical history of diverticulosis and GERD presented with a complaint of rectal bleeding. She had experienced 7 episodes of voluminous bright red blood per rectum with diffuse crampy abdominal pain. She had no history of previous GI bleeds. Her most recent colonoscopy was 25 years prior with diverticulosis only. DRE was positive for bloody stool and her hemoglobin was 10g/dL with a baseline of approximately 13. CT scan showed rectosigmoid wall thickening consistent with inflammation, diverticula and a metallic-like object in the proximal sigmoid colon (Figurea). The patient was started on piperacillin-tazobactam and prepared for flexible sigmoidoscopy occurring next morning. Endoscopy revealed areas of multiple diverticula, surrounding ulceration and bleeding in the rectosigmoid colon (Figureb); cold biopsy was taken of the ulceration. A foreign body was found in the sigmoid colon (Figurec) and was successfully removed with a Roth Net. The foreign body appeared to be swallowed chicken bone. Biopsy showed cellular debris and colonic mucosa with acute and chronic inflammation. Pathology identified the object as a bone fragment.
Discussion: The differential diagnosis of gastrointestinal bleeding is broad, but rarely is foreign body obstruction in the rectosigmoid region considered. The object must traverse 25 feet of small bowel prior to ulcerating the colon. The most common sites of complication occur at the ileocecal and rectosigmoid regions due to luminal narrowing and anatomic angulation. If complication occurs, 10-20% of foreign bodies can be removed endoscopically; 1% or less require surgical intervention. Intestinal strictures, cancer, diverticular disease, and hernias increase risk of complications after foreign body ingestion. Diverticulosis was the only identifiable risk factor in our patient case making it a unique clinical presentation.



[2654] **Figure 1.** Images from left to right (1a) foreign body as seen on admission CT (1b) sigmoid colon ulceration with diverticula seen proximal (1c) foreign body as seen on approach.

S2655

Splenic Vein Stenting and Endovascular Embolization for Bleeding Isolated Gastric Varices: A Spleen-Sparing Solution

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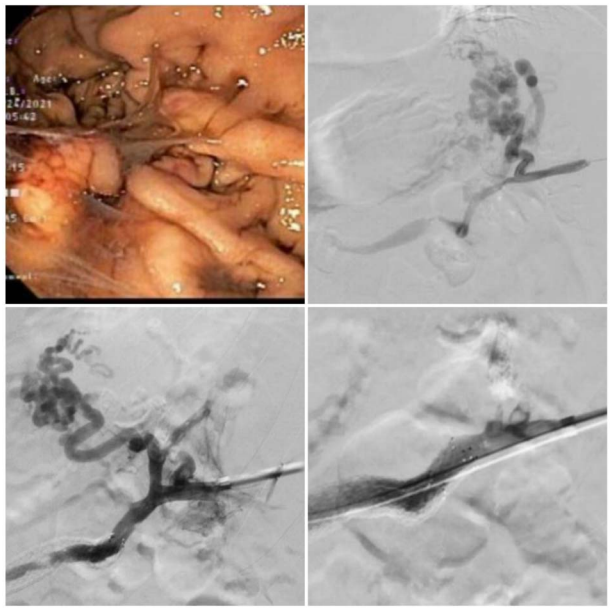
Introduction: Splenic vein thrombosis (SVT) typically occurs in the context of pancreatic diseases and leads to sinistral portal hypertension. Splenectomy is the treatment of choice and curative for bleeding from resultant isolated gastric varices (IGV). We report a unique approach to the management of gastric variceal bleeding secondary to SVT in the absence of malignancy or chronic pancreatitis. Hemostasis was achieved by recanalization of the splenic vein (SV) and subsequent embolization of gastric varices.
Case Description/Methods: A 43-year-old man with a prior history of alcoholic pancreatitis presented in hemorrhagic shock after copious hematemesis and multiple dark stools. Initial vitals were significant for sinus tachycardia. On examination, the abdomen was soft and nontender. His hemoglobin was 5.9 g/dL and platelet count 269,000/UL. Coagulation profile and liver function tests were normal. He was resuscitated with 3 units of packed RBCs. Esophagogastroduodenoscopy (EGD) revealed active bleeding at the fundus, tempered intermittently with epinephrine injections. Computed tomography (CT) angiography abdomen showed mild splenomegaly with segmental SVT and perigastric varices. Repeat EGD found varices in the gastric fundus. Interventional radiology was consulted. A percutaneous transsplenic approach was employed. An SV branch was cannulated. Angiography revealed mid-vein near-occlusion and massive gastric varices (GV). He underwent venoplasty, stenting, venography, and gastric variceal glue embolization. Heparin drip was given but soon switched to apixaban for 6 months. CT scan confirmed new splenic infarcts and a stent in the patent SV. At 3 months, CT abdomen showed an occluded GV and stent patency. (Figure)
Discussion: Bleeding IGV secondary to SVT without underlying pancreatic lesions is rare and challenging to treat. Endovascular approaches, when available, provide spleen-sparing interventions for SVT with splenic vein stenting (SVS) favored over splenic artery embolization (SAE) due to improved rebleeding risk. SVS preserves splenic parenchyma and immunologic function. A transsplenic approach provides the most direct access to the affected vessel when compared with transjugular or transhepatic pathways. Our patient fared well with no abscess, refractory bleeding, or eventual splenectomy. We posit that in SVT, splenic vein stenting should be considered in cases of sinistral hypertension, as a safe alternative to splenectomy.



[2655] **Figure 1.** From left to right and top to bottom: Endoscopic view of fundal varices. Splenoportography showing stenosed splenic vein and perigastric varices. Flow post stenting. Flow post embolization.

S2656

Spontaneous Sub-Diaphragmatic Hemorrhage From Aneurysm of Inferior Phrenic Artery due to Segmental Arterial Mediolysis

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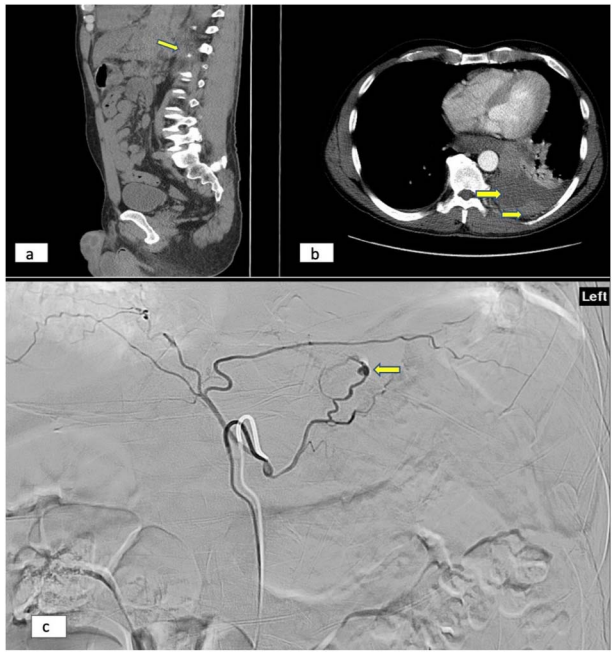
Introduction: Visceral artery aneurysms and pseudoaneurysms are uncommon but potentially lethal clinical entities. Inferior phrenic artery (IPA) involvement is very rare (< 1%) compared to splenic and hepatic artery involvement. Common etiology for IPA pseudoaneurysm being post traumatic or iatrogenic from catheter-based procedures. The other etiologies include sepsis, vasculitis, collagen vascular diseases, and Segmental Arterial Mediolysis (SAM). We report a diagnosis and management of a rare case of spontaneously ruptured IPA pseudoaneurysm.
Case Description/Methods: 50-year-old male presented with one-day history of epigastric and left upper quadrant abdominal pain. Review of symptoms positive for unintentional weight loss of 20lbs in the past six weeks. Medical history is significant for hypertension, untreated Hepatitis C infection, intravenous drug abuse, and smoking. No history of pancreatitis, blunt trauma, abdominal surgery, and alcohol use. On examination, his vitals were stable, diminished left lung base breath sounds and epigastric and LUQ abdominal tenderness without peritoneal signs. Laboratory workup showed elevated WBC count, Creatinine 1.15 mg/dl, mildly elevated ALT and AST, positive Hepatitis C antibody and normal lipase level and coagulation panel. The urine drug screen was positive for methamphetamine and opioids. CT with contrast (Fig a,b) showed active bleeding at gastric cardia with posterior mediastinal and distal esophagus/gastric cardia hypodensity concerning for hematoma. Small volume, high-density fluid along the greater curvature of the stomach compatible with hemoperitoneum. He underwent esophagogastroduodenoscopy revealing no active bleed. Subsequently, he underwent a celiac, left gastric, splenic, multilevel intercostal, and IPA angiogram (Fig c). A pseudoaneurysm of the left IPA with contrast extravasation was identified, and embolized using Coil and gel foam.
Discussion: Diagnosis of SAM involves clinical, laboratory, and imaging findings but gold standard being histological diagnosis. Clinical presentation, the vessels involved, and the presence of end-organ ischemia determine the management of SAM. Surgical management was first-line historically for any patient presenting with acute intra-abdominal bleeding. With the advancement of minimally invasive technologies, emergent catheter angiography and endovascular intervention, has become the first line in a hemodynamically stable patient.



[2656] **Figure 1.** a. CT abdomen with IV contrast showing large hypodensity extending from the posterior mediastinum through the diaphragm into the left upper abdomen. b. Wall thickening of the mid-distal esophagus and gastric cardia with an extensive volume of high-density material, favoring hematoma/hemorrhage. Small volume, high-density fluid in the left upper quadrant tracking along the greater curvature of the stomach, most compatible with hemoperitoneum. c. Angiography showing pseudoaneurysm of the left IPA with contrast extravasation.

S2657

Successfully Treated Severe Cameron Type Ulcer in a Recurrent Morgagni Hernia: A Case Report

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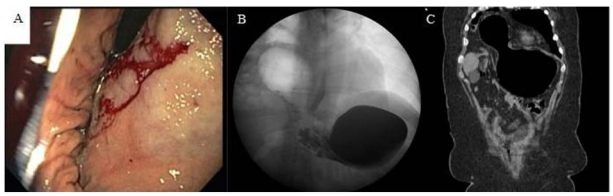
Introduction: Morgagni hernias are rare diaphragmatic hernias located in the anterior or retrosternal areas and comprise only 2-5% of congenital hernias. There are only a handful of cases in the literature in which these hernias present with upper gastrointestinal bleeding. Typical endoscopic treatments can be limited due to anatomic and technical reasons. We present a patient with successfully treated upper gastrointestinal bleed from a recurrent Morgagni hernia.
Case Description/Methods: A 44-year-old Native American male presented with four days of weakness and orthostatic hypotension to the emergency department. Medical history included a Morgagni hernia repair with Nissen fundoplication many years ago with ongoing tobacco and aspirin use. He had three melanotic stools over the preceding two weeks along with a 50-pound unintentional weight loss over the last year. He was tachycardic and hypotensive with an initial hemoglobin of 5.3. Following resuscitation with transfusions and intravenous fluids, he underwent an EGD which showed three ulcers causing circumferential stenosis in the mid-gastric body near the hernia. Two ulcers were superficial without stigmata of bleeding and the third was cratered with a visible vessel without active hemorrhage. After injection with 1:10,000 epinephrine, the ulcer was treated with bipolar diathermy along with placement of three clips along the ulcer base. Gastric biopsies were negative for H. pylori. He was referred to surgery after hospital discharge for repair of the recurrent Morgagni hernia. He was lost to follow-up and suffered a myocardial infarction two years later. He developed a gastric outlet obstruction from the hernia which improved with conservative management. He eventually underwent surgical repair of the hernia without recurrence. (Figure)
Discussion: Morgagni hernias are rare congenital diaphragmatic hernias. These hernias usually develop on the right side of the diaphragm and can be found incidentally during chest or upper abdominal imaging. They originate from failure of the pars tendinalis of the costochondral arches fusing with the pars sternalis. The underlying pathophysiology of bleeding is similar to that of Cameron type lesions from erosion due to the hernia rubbing the diaphragm defect. Typical endoscopic treatments can be limited due to anatomic and technical reasons, however, in this patient bipolar cautery and clipping achieved hemostasis. Definitive management of Morgagni hernias include surgery to prevent complications including incarceration.



[2657] **Figure 1.** A - Vessel oozing after initial contact in stomach view prior to clipping on EGD B - Upper GI Series showing recurrent Morgagni Hernia with first portion of duodenum above hernia defect on right side with stomach body and GE junction below the diaphragm C - CT showing Morgagni hernia prior to initial repair with stomach antrum in right chest and stomach body under left diaphragm.

S2658

Symptomatic Sclerosing Mesenteritis: A Flank Problem

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Introduction: Sclerosing mesenteritis is a rare diagnosis consisting of fatty inflammation and necrosis of the abdominal mesentery. Patients usually present asymptomatically or with vague, generalized systemic symptoms including abdominal pain, fever, and weight loss. Here, we present a case of a 72-year-old female with an unusual presentation of right flank pain in the diagnosis of sclerosing mesenteritis.
Case Description/Methods: A 72 YO female was evaluated in the hospital for acute onset, intermittent right flank pain described as a spasm sensation. Her history was significant for multiple abdominopelvic surgeries, dating back almost 50 years and including appendectomy, herniorrhaphy, pelvic reconstruction and hysterectomy, and bladder sling placement. Her most recent surgery was the appendectomy 5

months prior to admission. There was no temporal or positional association of the pain. She had no associated fevers, malaise, changes in bowel habits, nausea, vomiting, melena, or hematochezia. Prior colonoscopy history was unknown. Physical exam showed a diffusely soft, n abdomen without any masses or organomegaly. Laboratory evaluation demonstrated leukocytosis and elevated ESR and CRP. The remaining laboratory work-up was within normal limits. CT abdomen and pelvis without contrast showed hazy attenuation of the mesenteric root with hypodense halos surrounding the mesenteric lymph nodes, suggestive of sclerosing mesenteritis. Surgical intervention was deferred given the patient's comorbid conditions. Given her presentation of flank pain, retroperitoneal ultrasonography was done which was negative for any acute pathologies.

Discussion: The diagnosis of sclerosing mesenteritis is often an incidental finding on abdominal imaging, as seen in our patient case. Usually, such imaging studies are performed for evaluation of an abdominal mass seen in up to 35-50% of patients, however, in our case, it was performed for initial evaluation of her flank pain. In our patient case, the only risk factor for the development of sclerosing mesenteritis was her significant history of abdominal surgery. Studies have shown up to 30% of patients diagnosed with sclerosing mesenteritis have a history of prior abdominal surgery. A wide differential should be maintained in patients presenting without obvious abdominal complaints yet having a significant abdominal surgery history.

S2659

Splenic Artery Pseudoaneurysm as a Rare Cause of Upper Gastrointestinal Bleeding

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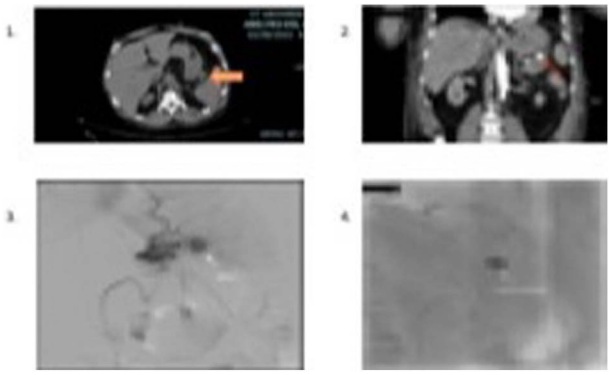
Introduction: Upper gastrointestinal bleeding (UGIB) is one of the most common causes for hospital admission in the US. Common etiologies for UGIB include peptic ulcer disease, erosive esophagitis, varices, and less commonly malignancies. Splenic artery pseudoaneurysm (PSA) is a known complication of pancreatitis. It may be asymptomatic or present with left upper quadrant or epigastric pain, and rarely as hemorrhagic shock. Splenic artery PSA presenting with UGIB is extremely unusual.

Case Description/Methods: We present the case of a 57-year-old male with alcohol use disorder complicated by a prior episode of alcoholic pancreatitis, who presented with 3 days of hematemesis, melena, and recurrent syncopal episodes. In the ED his vitals and physical exam were notable for tachycardia, hypotension, and melena. Labs revealed a hemoglobin of 4.2. Non-contrast CT of the abdomen and pelvis showed evidence of blood in the antrum and a 2.0 x 1.6 cm out-pouching from the greater curvature of the stomach which was postulated to be a gastric diverticulum (image 1). Upper endoscopy revealed fresh blood in the antrum and duodenum, as well as a massive adherent clot in the fundus. Since no single site of active bleeding was identified, the patient was started on IV PPI with continued close monitoring in the ICU. He continued to have melena, and increased PRBC requirements. Repeat EGD was performed but was unchanged from prior. A CT angiogram of the abdomen and pelvis demonstrated a 1.5 cm actively bleeding PSA arising from a first divisional branch of the splenic artery communicating with the fundus of the stomach (images 2 & 3). The patient underwent successful coil embolization (image 4). Hemoglobin remained stable throughout the remainder of his admission with no further evidence of bleeding.

Discussion: This case demonstrates PSA as a rare cause of UGIB. Lesions are most commonly caused by chronic pancreatitis, pancreaticobiliary surgery, and trauma. This patient's PSA was likely secondary to his prior episode of alcoholic pancreatitis. Prompt diagnosis of PSA is essential given the high mortality rate associated with rupture. Clinicians should maintain a high index of suspicion for gastrointestinal PSA in patients with a history of pancreatitis who present with UGIB for whom no obvious source of bleeding can be identified on endoscopy.



[2659] **Figure 1.** CT Thx/Abd/Pel demonstrating a 2.0 x 1.6 cm out-pouching from the greater curvature of the stomach (arrow), postulated to be a gastric diverticulum, 2. CT Angiogram Abd/Pel demonstrating the splenic artery PSA (arrow), 3. Fluoroscopic imaging re-demonstrating the splenic artery PSA with extravasation of contrast into the gastric lumen, 4. Splenic Artery PSA after successful coil embolization.

S2660

Spill the Beans: A Rare Case of Late-Presenting Bean Syndrome

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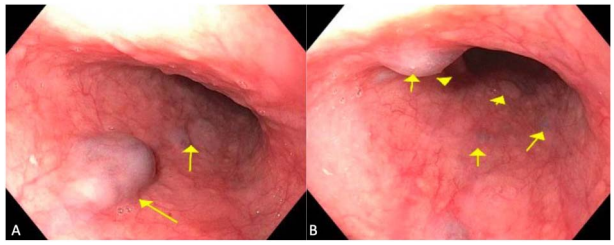
Introduction: Blue rubber bleb nevus syndrome (BRBNS), also known as Bean syndrome, is a rare genetic disorder that involves formation of venous malformations throughout various organ systems. This syndrome is characterized by the development of blue nevi which appear as soft, elevated but compressible skin lesions often found on skin or mucous membranes. As mentioned, BRBNS is a rare condition with only about 200 cases documented in literature. Patients are often diagnosed at birth or in early childhood as they are born with a "dominant lesion" and develop further blue nevi as they age. We present a case of a late-presenting BRBNS in an 84 year-old female who was found to have gastrointestinal bleeding after starting anticoagulation.

Case Description/Methods: An 84 year-old female with past medical history of atrial fibrillation on Xarelto (CHADsVASc 5), hypertension, and hyperlipidemia presented to the emergency department with sudden onset lower abdominal pain and melanotic stools for the past three days. She denied any associated nausea, vomiting, diarrhea, lightheadedness, or hematochezia. She admitted to two dark bowel movements daily since the start of her symptoms. On presentation, the patient was found to be tachycardic with a heart rate of 127 and hypotensive to 97/71mmHg with improvement in both with fluid resuscitation. The patient had two additional episodes of melena while in the ED, however her hemoglobin remained greater than 7g/dL and she did not require any transfusion of blood products. Gastroenterology was consulted and the patient underwent an esophagogastroduodenoscopy (EGD) which showed multiple large vascular blebs in the esophagus and stomach concerning for BRBNS. Due to concern for additional gastrointestinal bleeding events, the patient was deemed high-risk for further anticoagulation and Xarelto was discontinued. Structural cardiology was consulted for a watchman device evaluation. (Figure)

Discussion: Venous malformations related to BRBNS are commonly found on the skin and in the gastrointestinal tract. Patients with BRBNS are at an increased risk of gastrointestinal bleeding and iron deficiency anemia as nevi can bleed spontaneously and can be life-threatening. Alternatives to anticoagulation are required in patients with BRBNS due to high-risk for bleeding. Unless bleeding is severe enough where multiple blood transfusions are required, treatment is usually supportive; however, surgical removal of blebs is an option.



[2660] **Figure 1.** 1A and 1B: Esophagogastroduodenoscopy (EGD) showing multiple large vascular blebs with a patchy distribution in the entire esophagus concerning for Blue rubber bleb nevus syndrome (aka Bean Syndrome).

S2661

Timely Endoscopic Recognition of Aortoesophageal Fistula With Successful Treatment

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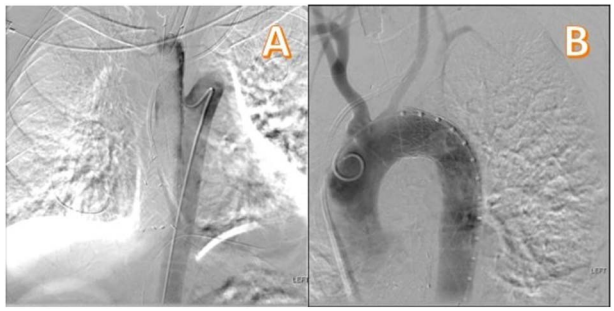
Introduction: Aortoesophageal fistula is a devastating cause of upper gastrointestinal bleeding that occurs due to pathologic communication of the esophagus with the aorta. Risk factors include thoracic aortic aneurysm, foreign body ingestion, esophageal cancer, post-surgical complications, and prior radiation therapy. We describe a case of a patient who developed hemorrhaging into the esophagus due to aortoesophageal fistula during esophagogastroduodenoscopy (EGD).
Case Description/Methods: Our patient is a 52-year-old man presenting with hematemesis and hematochezia. He has history of non-small cell lung cancer treated with chemoradiation. Treatment has been complicated by esophageal strictures that have required dilation. On EGD, he was noted to have a visible vessel at the site of a scar in the mid esophagus where he had previously had stricture. Initially, no bleeding was visualized. However, during the exam, the patient developed coughing and began to have profuse bleeding in the mid esophagus. Bleeding was uncontrolled despite epinephrine injection, thermal therapy with gold probe, hemostatic clip, and hemospray. Two fully covered esophageal stents were placed but were unsuccessful in tamponading the area. An esophageal dilation balloon was insufflated within the stents for temporary control. He developed hemorrhagic shock and was transferred emergently to the interventional radiology suite. A subsequent thoracic aortogram with supplemental angiograms demonstrated an aortoesophageal fistula (FigureA). Vascular surgery placed an emergent endovascular thoracic stent graft with resolution of bleeding (FigureB). The patient was admitted to the surgical intensive care unit. He subsequently recovered and was able to be discharged home.
Discussion: Prompt diagnosis of aortoesophageal fistula is critical due to the catastrophic consequences of this condition. Risk factors present in our patient include prior radiation therapy and esophageal strictures needing dilation. Classic clinical signs include midthoracic pain or dysphagia followed by sentinel hemorrhage and exsanguination after a symptom free interval (i.e., Chiari's triad). Other diagnostic techniques include endoscopy and imaging (typically with computed tomography or angiogram as in our case). Preferred definitive treatment consists of endovascular aortic repair via stent-graft placement. Our patient also underwent endoscopic stent placement with balloon tamponade as a temporizing measure for management of hemorrhagic shock.



[2661] **Figure 1.** A) Aortogram showing aortoesophageal fistula. B) Aortogram showing resolution of the fistula after placement of the aortic stent.

S2662

Systemic AL Amyloidosis From Plasma Cell Neoplasm in Younger Population Presenting With Gastrointestinal Symptoms Primarily

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Introduction: AL amyloidosis, known previously as primary amyloidosis, is a disorder in which fragments of monoclonal light chains deposit throughout various tissues. The incidence of amyloidosis increases after the age of 40 and a mean age of 63 years old at diagnosis. However, less than 5% of patients are diagnosed at 40 years or younger. Here we explore the case of a patient presenting with gastrointestinal symptoms diagnosed with systemic AL amyloidosis at 32 years old.
Case Description/Methods: 32-year-old male presented to the emergency department with abdominal pain and hematochezia The pain was mainly in the left lower quadrant and was not associated with any nausea or vomiting. He also admitted to a 4-5 kilogram weight loss over the past year. CT abdomen and pelvis showed mild colonic wall thickening. Presumptive treatment for colitis was started but patient was not improving. Stool ova and parasites and blood cultures were negative. Biopsy specimens obtained during colonoscopy and endoscopy showed amyloidosis in the gastroesophageal junction, gastric, duodenal, terminal ileum , and colonic mucosa. Bone marrow biopsy from the right iliac showed kappa type clonal plasma cell population that made up 20-25% of marrow cellularity, consistent with plasma cell neoplasm. It was also positive for amyloid staining of small-sized blood vessels. Ultrasound-guided liver biopsy was positive for amyloidosis and fibrosis in the liver parenchyma and negative for malignancy. In summary, the test results were congruent with systemic amyloidosis involving the GI tract, liver, and multiple other organs.
Discussion: AL amyloidosis, also known as systemic amyloidosis, occurs as a result of deposition of amyloid in tissue. Amyloid fibrils are composed of insoluble low molecular weight protein subunits. Deposition of amyloid into various tissues causes cellular stress and death, subversion of normal structure, organ dysfunction, and eventually death. This case illustrates the rare diagnosis of early-onset AL amyloidosis with widespread end-organ damage in multiple organ systems. It is especially important to consider both generalized symptoms, such as weight loss, as well as specific symptoms relating to end organ dysfunction, such as abdominal pain and hematochezia. GI symptoms tend to be less common, but when they are present, it may include macroglossia, dysphagia, bleeding or malabsorption. The GI tract may be involved at any level, as was the case with this patient.

S2663

The Eroding Ulcer

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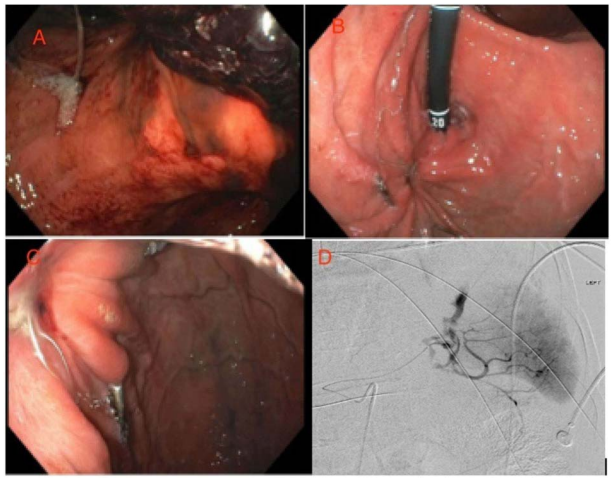
Introduction: Massive upper gastrointestinal (GI) bleeds can be life threatening. Common causes are peptic ulcer disease and esophagogastric varices. These, when presented, often can be managed endoscopically. Ulcers in the GI tract can, rarely, erode into major arteries including the splenic artery and cause bleeding that may need embolization or surgery to control. Here we report a case of a massive upper GI bleed.
Case Description/Methods: Patient is a 65 year old male with PMH of alcohol abuse, drug use, bed bound who presented with reported hematemesis. Initially patient reported he drank red liquid prior and refused an endoscopy. A day into hospitalization he had another episode of hematemesis and hypotension and was transferred to the ICU. There he transfused and stabilized. He underwent an endoscopy discovering a gastric ulcer in the fundus. Epinephrine was injected with good effect and cautery was initiated with bipolar probe starting at the periphery of the visible vessel and on the edges of the ulcer. While performing cautery, the vessel in the ulcer started to hemorrhage causing red out and inability to visualize. He was intubated and started massive transfusion protocol. Interventional radiology (IR) and surgery was consulted. He had three cardiac arrests with rapid return of pulse. When he made it to the IR suite, underwent angiography which showing significant bleeding from mid splenic artery which was coiled (d). With the location the ulcer had eroded into the splenic artery causing a fistula. He recovered well and was later discharged from the hospital. He underwent a repeat endoscopy a few days later (a) and another a few weeks after discharge (b,c).
Discussion: Often with vascular fistulas there is an initial small bleed followed by a more significant bleed as seen in this case. When encountering massive GI bleeding, one must keep enteric vascular fistulas in the differential and have interventional radiology and surgery engaged early. Presenting with a splenic artery aneurysm with bleeding is rare, 0.01 to 10.4% depending on literature. Hemorrhage is one of the most common presentation for splenic artery pseudoaneurysms with 47% of cases and mortality approaches 90% if not properly managed. This case reminds us to keep a broad differential and to involve IR and surgery early in a massive GI bleed.



[2663] **Figure 1.** A.Endoscopy post coiling with coil emerging from ulcer. B. Endoscopy after discharge. C. Endoscopy after discharge, coils still present from ulcer. D. Angiogram showing active bleeding.

S2664

The Polyp That Won't Stop Bleeding: Endoscopic Hemostasis in the Setting of Severe Thrombocytopenia

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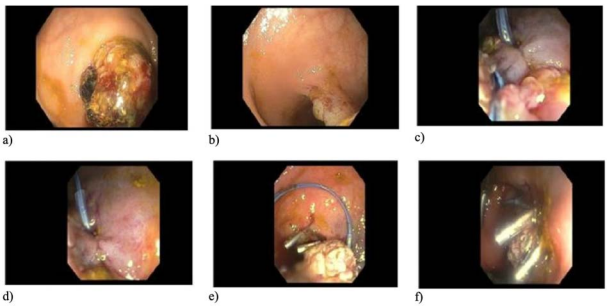
Introduction: Management of acute leukemia often includes anticipating severe cytopenias. Severe thrombocytopenia can lead to many complications, including gastrointestinal (GI) bleeding. Further, platelets below 20,000 make justifying surgical and or endoscopic procedures difficult in the setting of stable bleeding. In light of ongoing bleeding and the need for multiple blood products to support hemodynamics, the clinician may raise the question of whether it is an absolute contraindication to safely performing endoscopic procedures.
Case Description/Methods: This case reports an example of a patient with severe thrombocytopenia in the setting of acute myeloid leukemia who presented with hematochezia. Her platelet count was 10,000/mL on arrival. CT-A was ultimately done and revealed a bleeding rectal polyp. In total, she received 13 units of platelets, 8 units of packed red blood cells, and 2 units of cryoprecipitate while attempting to raise her counts high enough for intervention or allow for spontaneous resolution. Her counts never recovered and it was decided to attempt colonoscopy at a platelet count of 13,000/mL. Hemostasis was successfully achieved using endoclips and epinephrine injection. (Figure)
Discussion: Patients, especially those with hematologic malignancies, may present with severe thrombocytopenias and gastrointestinal bleeding that requires hemostasis. There are no clear guidelines as to a safe platelet level to perform endoscopy while minimizing bleed risk. However, this case presents successful hemostasis in a patient with platelets less than 20,000/mL refractory to transfusion. Future research should be done to better elucidate what platelet count is safe for endoscopic procedures.



[2664] **Figure 1.** Colonoscopy images a) 3 cm polyp in distal sigmoid with sigmata of recent bleed, b) polyp stalk, c) and d) two clips applied to stalk, e) endoloop applied, f) additional 2 clips below loop.

S2665

The 'Tic'king Bleeder: A Rare Case of Bleeding Dieulafoy's Lesion in a Jejunal Diverticulum

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Introduction: Dieulafoy lesion (DL) is a relatively rare and arguably under-recognized condition, accounting for 1-2% of acute GI bleeding. Most bleeding DLs occur in the stomach, followed by the small intestine, with less than 1% occurring in the jejunum. Bleeding DL on a jejunal diverticulum is even more rare, with a handful cases described in the literature. Here we present a rare case of a bleeding DL in a jejunal diverticulum with its endoscopic management.
Case Description/Methods: A 65-year-old female with history of COVID-19 infection one month prior to presentation treated with steroids and therapeutic anticoagulation presented to the ED after having multiple episodes of coffee-ground emesis and two episodes of syncope at home. Last dose of Apixaban was 12 hours prior to admission. Physical exam revealed BP of 90/60 on Norepinephrine infusion, HR of 96, abdominal exam was soft and nontender, DRE revealed melena. Hemoglobin/hematocrit was significantly decreased at 3.6/12.8. Patient was appropriately resuscitated with blood products and fluids, and she was scheduled for an EGD. Initial EGD did not identify a clear source of her bleeding, and she was scheduled for colonoscopy. Colonoscopy with deep cannulation of the terminal ileum up to 40cm revealed significant amounts of fresh blood all throughout the colon and terminal ileum. Decision was made for push enteroscopy, which revealed a jejunal diverticulum containing a Dieulafoy lesion with an overlying clot (Image A). The lesion was first injected with epinephrine at 2 sites followed by a clot removal overlying the lesion using 13-0 circular snare. A clear stigma of recent bleeding was noticed from the lesion after clot removal (Image B), after which 2 metallic clips were placed over the lesion to achieve hemostasis (Image C). The patient had no further episodes of bleeding and was follow up in clinic eventually, recovering well.
Discussion: Because of the life-threatening nature of Dieulafoy lesions, identification is of paramount importance for treatment purposes. Jejunal DLs are a rare entity but should be considered in cases with negative bidirectional endoscopies. In our case, push enteroscopy helped identify the bleeding lesion. DL in a diverticulum can pose a challenge to the endoscopist due to difficulty of access to the lesion. Epinephrine injection followed by mechanical clipping showed a positive outcome in our case which can be considered while approaching bleeding DLs in a diverticulum.

[2665] **Figure 1.** a) jejunal diverticulum, b) clot removal overlying the lesion using snare, with stigmata of recent bleeding, c) 2 metallic lips were placed over the lesion.

S2666

Three Simultaneous Sources of Upper GI Bleeding

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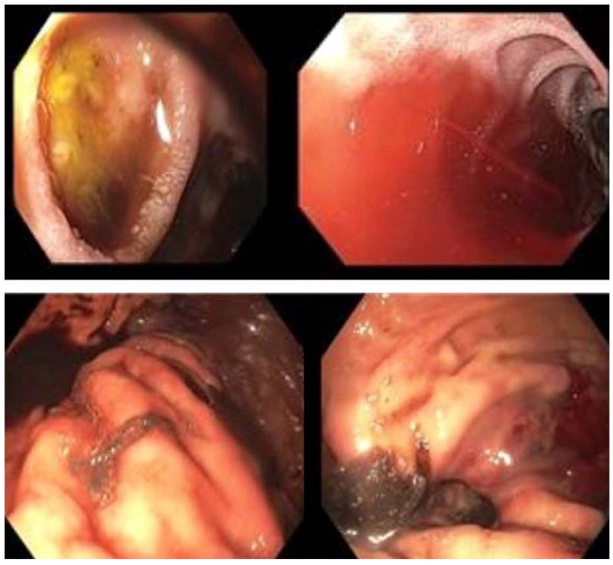
Introduction: Acute upper GI bleeding is one of the most common causes of gastrointestinal related hospitalizations. Presentation of these patients commonly includes melena, hematemesis, or unstable hematochezia. One of the most common etiologies for this presentation is peptic ulcer disease. However less common causes include Dieulafoy lesions and iatrogenic gastric fistulas. The following case discusses three simultaneously diagnosed causes of upper GI bleeding.
Case Description/Methods: An 82-year-old male with a history of splenectomy presented with melena and syncope. The day of arrival patient had syncopized after having multiple large bouts of black stool. On presentation, he was hypotensive, and tachycardic. His hemoglobin was 6.3 g/dL with a BUN of 62 mg/dL. An EGD was planned following patient stabilization. Initial EGD revealed a single 8mm ulcer in the duodenal bulb with no stigmata of bleeding. Just distally to the ulcer in the duodenal sweep was an actively bleeding Dieulafoy lesion. Hemostasis was achieved with bipolar cautery and the active bleed was stopped. Retroflexion during the initial procedure showed retained clot and old blood in the fundus that was presumed from the Dieulafoy lesion. Despite intervention, patient continued to have large bouts of melena the evening after the procedure. A 2nd EGD was performed and showed a stable ulcer and no signs of recurrent Dieulafoy. The fundus was now more visible and revealed ischemic damage. Careful inspection revealed a fistula with suture material free floating. Review of the operative note from the splenectomy revealed patient suffered a small laceration to the gastric fundus during the procedure which was repaired with an inner row of sutures. Given the size of the fistula, decision made for a CT scan to better define the anatomy. Unfortunately, the patient continued to decompensate, and family ultimately elected for comfort care. (Figure)
Discussion: Dieulafoy lesions and gastric fistulas are both relatively rare, but potentially life-threatening, conditions. A Dieulafoy is a narrow artery that bleeds through a small mucosal defect. Therapeutic endoscopy can control the bleeding in 90% of patients while angiography is being accepted as an alternative to endoscopy for inaccessible lesions. The most common site for a Dieulafoy lesion to appear is in the lesser curvature. Gastric fistulas status post splenectomy occur in less than 1% of cases with the usual site along the greater curvature near the fundus.



[2666] **Figure 1.** Top left: Index EGD showing a single cratered 8mm ulcer in the duodenal cap. Top right: Index EGD with active Dieulafoy bleed in the duodenal sweep, just distal to ulcer. Bottom left: 2nd EGD showing free floating suture material and ischemia in the fundus Bottom right: 2nd EGD showing obvious fistula with ischemic changes, obscured by clot and old blood during index endoscopy.

S2667

Upper Gastrointestinal Bleed From a Gastric Duplication Cyst

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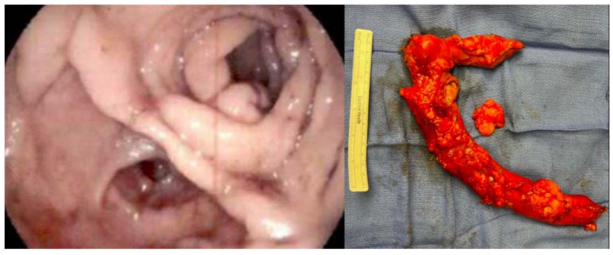
[1]Hurley Medical Center at Michigan State University, Flint, MI; [2]George Washington University Hospital, Washington, DC; [3]George Washington University Hospital, Washington, MI.

Introduction: A gastric duplication cyst (GDC) is an uncommon congenital malformation and a rare cause of upper gastrointestinal bleeding. Herein we present a peculiar case of an 83-year-old female with first ever onset of melena found to have a duodenal bulb fistula connecting to a bleeding extraluminal gastric pouch which was ultimately found to be a large GDC.
Case Description/Methods: An 83-year-old female with history of bladder cancer treated with laser ablation, gastroesophageal reflux disease (GERD) on omeprazole, and a reported history of a "second stomach" presented to the emergency department with four days of painless, black, and sticky stools with one episode of non-bloody, nonbilious emesis prior to presentation. Presenting vitals were unremarkable, and pertinent laboratory workup demonstrated hemoglobin of 9.4 grams/deciliter, blood urea nitrogen of 35 milligrams/deciliter (mg/dL), and creatinine of 0.8 mg/dL. Esophagogastroduodenoscopy revealed the appearance of a bulge on the greater curvature of the stomach, and a duodenal bulb fistula was found connected to an actively bleeding extraluminal gastric pouch. The pouch could not be fully intubated endoscopically. Computed tomography angiography abdomen/pelvis displayed a possible gastric variant or duplication with a 2.9 centimeter enhancing mass in the proximal region without active extravasation of blood. She continued on intravenous pantoprazole and had one additional episode of melena but remained stable. She underwent partial gastrectomy, duodenal resection, Roux-en-Y gastrojejunostomy, and cholecystectomy without complications. Pathology showed a gastric duplication cyst lined with benign oxyntic mucosa. She was discharged. (Figure)
Discussion: Gastrointestinal (GI) duplication cysts are found throughout the GI tract. They may or may not communicate with the GI lumen. Gastric mucosa is present in 50% of GI duplication cysts; they may remain asymptomatic but complications include ulceration, perforation, fistula formulation, and in rare cases gastrointestinal bleeding. Our patient went 83 years without GI bleed or other significant sequelae from the presence of a large GDC, highlighting the variable and unpredictable clinical course of this rare congenital abnormality.



[2667] **Figure 1.** FigureA: Endoscopic view of duodenal bulb fistula connecting to extraluminal gastric pouch lined with gastric mucosa. FigureB: Resected gastric extraluminal pouch post surgical intervention.

S2668

Where's That Bleed?! A Case of Intermittent Ectopic Jejunal Variceal Bleeding

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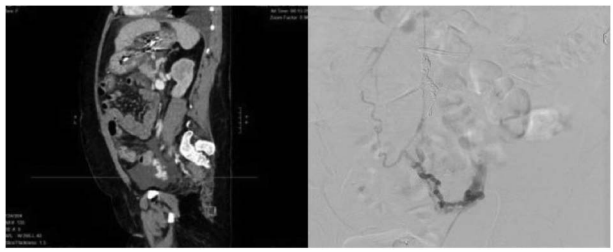
Introduction: Variceal bleeding is a potentially life-threatening complication of cirrhosis. Although most often found in the esophagus and stomach, collateral pathways can develop throughout the abdomen in the setting of portal hypertension leading to "ectopic" varices eg retro/intra-peritoneal, small bowel, rectal, urinary bladder and biliary tract varices. They demonstrate hepatofugal flow on imaging, but are difficult to find, which may delay therapeutic interventions. Here, we present a patient with recurrent hematochezia secondary to ectopic jejunal variceal bleeding.
Case Description/Methods: A 51-year-old female with hepatitis C/alcohol related cirrhosis, decompensated by variceal bleeding s/p TIPS, ascites and HE, presented with melena. EGD: superficial esophageal tears, as well as a clot overlying a varix, for which three bands were placed. Her hemoglobin declined from 11.6 to 6.1 g/dL with worsening encephalopathy, vital instability, intermittent hematochezia, and fever. Repeat EGD: healing post-banding ulcers without active bleeding. Colonoscopy: numerous superficial ulcers with adherent clots, but no active bleeding; biopsies consistent with ischemic colitis. CTA was done without active extravasation identified. US abdomen showed distal TIPS stenosis, so IR was consulted for TIPS revision. The volume of hematochezia then became profuse. STAT CTA found an area of jejunal blush and angiography revealed an ectopic SMV branch varix to the jejunum with aberrant connection to the left ovarian vein, which was embolized. Her TIPS was also revised, with a decrease in porto-systemic pressure gradient from 16 to 7 mmHg. Subsequently, her bleeding resolved, hemodynamics and encephalopathy improved, and she was ultimately extubated and transferred to the floor. (Figure)

Discussion: Ectopic varices account for up to 5% of variceal bleeds with a bleeding rate thought to be 4 times higher than esophageal varices and a reported mortality up to 40%. About 17% are jejunal/ileal varices. Rapid detection and treatment by embolization and reduction in portal pressures via TIPS, BRTO or portal vein stenting are key. In our patient, despite delay in diagnosis due to intermittent bleeding, hemostasis was finally achieved with direct embolization and reduction in portal pressure. It is imperative that a high suspicion be maintained for ectopic varices in any patient with portal hypertension and intra/extraluminal signs of bleeding, and other modalities such as MRA or CT enterography be utilized if endoscopy/CTA are non-revealing.



[2668] **Figure 1.** Figure: (a) Sagittal view of computed tomography angiography (CTA) and (b) angiogram evidence of jejunal blush and ectopic jejunal varix with aberrant connection to the left ovarian vein, respectively.

S2669

Video Capsule Bronchoscopy: A Rare Complication of Video Capsule Endoscopy

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Introduction: Video capsule endoscopy is performed on a routine basis and is known to be very safe. The most common complication is capsule retention which occurs when the video capsule fails to reach the colon within it's recording time. We present a rare case of video capsule aspiration requiring bronchoscopy for removal.
Case Description/Methods: An 83-year-old male with past medical history of coronary artery disease and lacunar infarct presented with melena and iron deficiency anemia. He underwent esophagogastroduodenoscopy and colonoscopy and no source of bleeding was identified. Further evaluation with video capsule endoscopy was planned to evaluate the small bowel. The capsule was swallowed with water in the presence of trained staff and no coughing was noted. The following day uploaded film showed the capsule did not make it to the stomach and likely was in the patient's airway. Aspiration of the video capsule was confirmed on chest x-ray. The patient remained asymptomatic since swallowing the capsule and had tolerated drinking fluids and eating. Bronchoscopy was performed and the video capsule was seen lodged in the right main bronchus. A loop snare was used to successfully remove the video capsule without any complications. The patient's bleeding stopped, and the decision was made to defer repeat capsule endoscopy.
Discussion: Video capsule aspiration is an extremely rare complication of video capsule endoscopy and is estimated to occur at a rate of only 0.1%. We believe our patients stroke history likely played a role in his asymptomatic presentation after aspiration. This case illustrates the importance of considering endoscopic placement of the video capsule for patients at risk for retention or aspiration.

S2670

Use of Hemospray as Monotherapy in Acute Post Colorectal Anastomotic Bleeding

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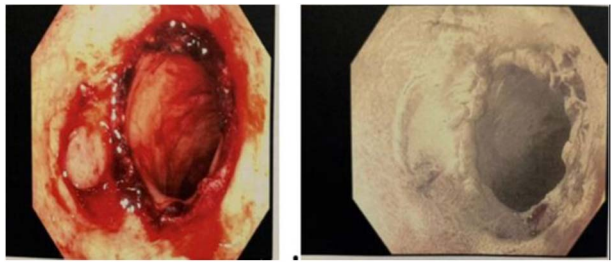
Introduction: Hemostatic powder spray TC-325 is approved for upper GI bleed and is used off label to control post-polypectomy lower GI bleeds. We believe our case is one of the few cases where it was used for rescue hemostasis in setting of gushing acute post colorectal anastomotic bleeding where visualization was limited and immediate hemostasis was required.
Case Description/Methods: A 68-year-old man underwent robotically assisted sigmoid colectomy for an endoscopically un-resectable 4cm tubular adenoma with high grade dysplasia. Other than excessive adhesions in left lower quadrant requiring lysis, the surgery went well. The colorectal anastomosis was stapled end to end. Four hours later patient developed large volume rectal bleeding and was taken back to the operating room emergently and rectum was cleared of clots via proctoscopy. Next a flexible sigmoidoscope was inserted and active brisk bleeding from the anastomosis site was confirmed. Hemo-spray was generously applied to entire anastomosis and hemostasis was achieved without any difficulty. Hemoglobin had dropped initially from 12.1 to 9.5g/dL but no further bleeding occurred and Hb remained stable. No other surgical intervention was needed and patient was discharged on post-operative day five.
Discussion: Hemostatic powder spray TC-325 was approved by FDA in 2018 for GI bleeding and is recommended for temporary control of bleeding as rescue or salvage therapy. It achieves prompt hemostasis by absorbing water, creating a barrier that acts as mechanical tamponade and creating cohesive and adhesive layer over bleeding site. It also concentrates the clotting factors to enhance coagulation. It is specifically beneficial due to its ability to cover large surface in not properly visualized areas of bleeding without contact with the tissue. However, there are risks of re-bleeding as it only becomes functional in presence of moisture, GI perforation, bowel obstruction and device malfunction. To the best of our knowledge, this is the first case on use of Hemo-spray as monotherapy to achieve successful hemostasis in acute post colo-rectal anastomotic bleed. Based on literature review and outcome of this case, hemospray is an accessible and adaptable modality that can be used for prompt and effective control of lower GI bleed as it has been used to control upper GI bleed. Further investigation is needed to comprehensively assess the safety profile of its use specially in lower GI bleed.



[2670] **Figure 1.** Endoscopic image of bleeding from end-to-end colo-colonic anastomosis and successful hemostasis achieved after hemo-spray.

S2671

Upper Gastrointestinal Bleeding Due to Duodenal Ischemia: A Case Series

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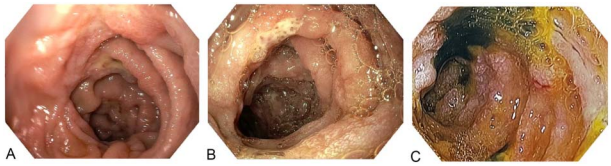
Introduction: Duodenal ischemia is a rare entity given dual blood supply from branches of the Celiac axis and Superior Mesenteric artery. However, it may present with clinically significant GI bleeding. We present three cases of duodenal ischemia diagnosed on EGD.
Case Description/Methods: Case 1: An 84-year-old lady with heart failure presented with abdominal pain and melena. Vitals were BP 90/55, HR 112. She was cachectic with a mildly tender abdomen. Labs were notable for hemoglobin 6.6 g/dL from baseline of 8.2; BUN 65 mg/dL. CT abdomen noted bowel wall edema involving the duodenum. EGD revealed 5 duodenal ulcers with surrounding erythematous and friable mucosa consistent with ischemia (FigureA). She was discharged in stable condition on pantoprazole BID. Case 2: A 63-year-old lady presented with chest pain and was diagnosed with an inferior STEMI. On presentation vitals were BP 76/50 mmHg and HR 43 bpm. Cardiac catheterization was performed with two drug-eluting stents placed in the right coronary artery. Patient was started on aspirin and clopidogrel and developed melena 3 days later. Hemoglobin dripped from 12.4 to 8.4 g/dL. EGD noted pallor of the gastric body with areas of patchy erythema and erosions within the antrum, in addition to several clean based ulcers with erythema within the duodenal bulb through the second portion (FigureB). Admission CT abdomen showed moderate celiac narrowing. Patient was continued on pantoprazole BID and did not have further bleeding episodes prior to discharge. Case 3: A 63-year-old man with ESRD was admitted with endocarditis, MSSA bacteremia and embolic strokes. On day 9, he suffered PEA arrest and was resuscitated. He subsequently developed melena and shock. Hemoglobin dropped from 9.8 g/dL to 6.6 g/dL. Urgent EGD revealed a diffusely hemorrhagic stomach and the duodenum was noted to have spotty areas of necrosis, erosions and ulcerations within the bulb and second portion (FigureC). CTA revealed moderate to severe stenosis in the proximal SMA and celiac axis. The patient was transitioned to comfort measures after suffering recurrent embolic strokes during admission.
Discussion: Clinicians should maintain a high index of suspicion for duodenal ischemia in patients presenting with upper GI bleeding in the setting of a low-flow state, as illustrated in the above three cases. Management is typically supportive; however prognosis may be poor reflecting patients' systemic illnesses leading to the process.



[2671] **Figure 1.** Endoscopic images demonstrating duodenal ischemia.

S2672

Primary Aortoenteric Fistula: A Rare Presentation of a Herald Bleed

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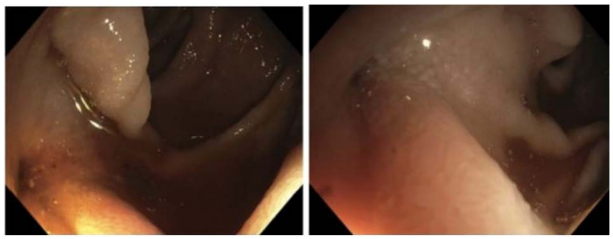
East Tennessee State University, Johnson City, TN.

Introduction: Rarely, an aortoenteric fistula (AEF) is identified as the source of a herald bleed, or one that precedes a catastrophic hemorrhagic event such as abdominal aortic aneurysm rupture. AEFs are abnormal communications between the GI tract and aorta that arise most commonly secondary to aortic vascular procedures. In contrast, primary AEFs have much lower incidence and are felt to arise spontaneously from erosion.
Case Description/Methods: We present a 69 year old female with prior history of an abdominal aortic aneurysm who presented with multiple bouts of hematemesis and abdominal pain. CT showed an irregular shaped infrarenal abdominal aortic aneurysm with dimensions 9.6 x 7.5 cm with evidence of contained rupture. The patient developed hemorrhagic shock with both hematemesis and brisk hematochezia. With stabilization, the patient underwent percutaneous endovascular aneurysm repair with stent placement over aortic bifurcation. Following vascular intervention, no further hematemesis or clinical GI bleeding occurred. Push enteroscopy was performed revealing a defect in the distal third portion of the duodenum with extravasation of both debris and blood (image 1). The ampulla was excluded as a bleeding source. This mucosal defect was concerning for AEF and hemoclips were deployed to mark its location. Following this hospitalization, the patient later died from chronic respiratory failure.
Discussion: This case presents a "herald" GI bleed secondary to a primary aortoenteric fistula. A classic triad of abdominal pain, pulsating mass and gastrointestinal bleeding has been described, however all 3 components are present in a minority of cases. Primary AEFs have a commonly cited incidence of 0.07%. Identification of both primary and secondary AEF demands a high index of suspicion, particularly in the setting of acute aneurysm. (Figure) Endoscopically confirming aortoenteric fistula is technically challenging and often inconclusive, thus CT with contrast is preferred with sensitivity 94% and specificity 85%. Presence of air bubbles or intravascular air on CT is often confirmatory. With an estimated mortality rate of primary AEF of approximately 36%, surgical management is usually required. Surgical options include utilizing an in situ graft versus direct closure of the mucosal defect in the GI tract. Endovascular techniques including aortic stent and graft placement are increasingly used.



[2672] **Figure 1.** Defect in duodenal mucosa representing primary aortoenteric fistula.

S2673

If It Bleeds, It Leads: Endoscopic Presentation of Hemosuccus Pancreaticus

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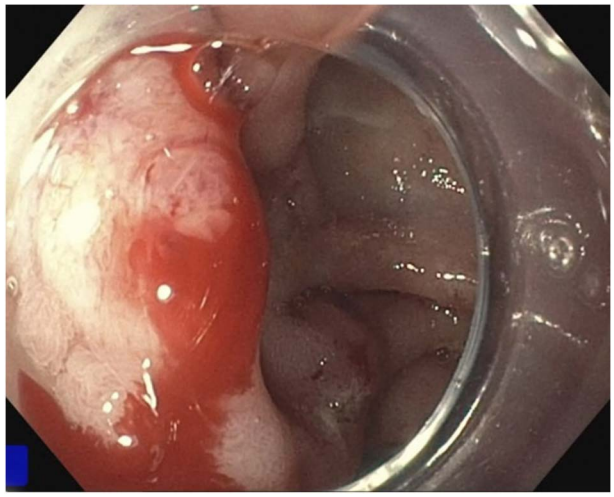
Introduction: A 65 year old male presented as a transfer for further evaluation of multifactorial shock. Pertinent medical comorbidities included active alcohol use disorder and mild alcohol associated hepatitis. On OSH presentation, he was treated for multifactorial shock in setting of new atrial fibrillation with rapid ventricular response and MSSA bacteremia, and was subsequently transferred to our facility.
Case Description/Methods: On arrival, he had been started on systemic anticoagulation in light of his new diagnosis of atrial fibrillation and had downtrending hemoglobin from previously normal baseline ~15 to a nadir of 7-8. Several episodes of witnessed melena were documented, and the gastroenterology service was consulted. He had no known prior history of GI bleeding or cirrhosis. Endoscopic evaluation noted a small amount of hematin in the stomach without concerning source lesions. Examination of the duodenum was initially only notable for scant fresh red blood and small, clean based ulcers thought secondary to recent hypotension and ischemia. On prolonged examination of the duodenum intermittent fresh blood was observed originating from the ampulla, consistent with a diagnosis of hemosuccus pancreaticus. Follow up dedicated CT angiography showed a thrombosed aneurysm in the pancreatic head, abutting the distal main pancreatic duct, that was concerning for the likely source lesion. The patient and family were offered interventional radiology intervention, but instead opted for hospice placement.
Discussion: Hemosuccus pancreaticus is typically associated with pancreatic pathology that ultimately causes luminal bleeding via erosion of pancreatic blood vessels in communication with the pancreatic duct. The source of bleeding is often an arterial aneurysm or pseudoaneurysm and associated bleeding can be severe and life-threatening. Active hemorrhage from the duodenal ampulla is a rare endoscopic finding and bleeding in cases of hemosuccus pancreaticus is frequently intermittent. In patients with obscure upper GI bleeding and the appropriate risk factors, a high index of suspicion is required to ultimately make the diagnosis. (Figure) Given the frequency of associated vascular abnormalities, all patients with suspected or confirmed hemosuccus pancreaticus merit dedicated vascular imaging and if a vascular lesion is identified, angiography and coil embolization are the preferred definitive management.



[2673] **Figure 1.** Intermittent active bleeding from ampulla consistent with endoscopic diagnosis of hemosuccus pancreaticus.

S2674

Sometimes You Have to "Dig a Little Deeper:" A Case of a Dieulafoy Lesion Leading to a Life-Threatening Gastrointestinal Bleed in a 30-Year-Old Male

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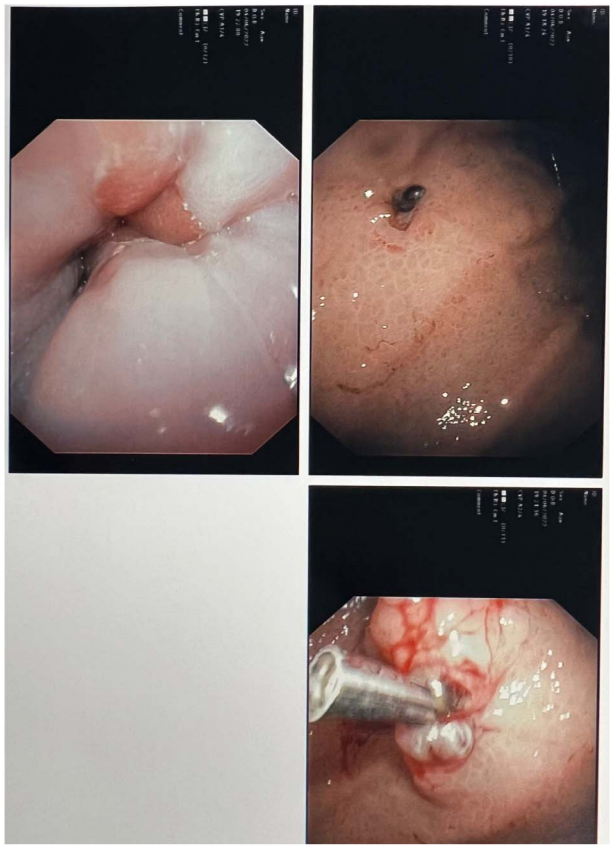
[1]Palmetto General Hospital, Hialeah, FL; [2]Larkin Community Hospital, Hialeah, FL.

Introduction: Dieulafoy's lesion is a relatively rare, but potentially life-threatening condition accounting for 1-2% of acute GI bleeds. Scrupulous operator techniques during upper endoscopy are critical for the detection of Dieulafoy's lesions and may decrease the mortality from 80% to 8.6%.
Case Description/Methods: A 30-year-old Hispanic male with a past medical history of ischemic cardiomyopathy, chronic anemia and uncontrolled hypertension which led to ESRD presents to our hospital due to melena and new onset hematemesis. He reports that a week prior he had presented to a facility with epigastric abdominal pain and symptomatic anemia requiring one unit of blood. An initial upper endoscopy at that time revealed gastritis and duodenitis with no sequelae of bleeding. Upon presentation, hemoglobin was 3.7mg/dl for which the patient was emergently transfused. CTA of abdomen revealed what appeared to be active arterial extravasation involving the region of the body of the stomach. An emergent upper endoscopy was performed which after proper insufflation showed a Dieulafoy lesion in the lesser curvature of the stomach. Lesion was subsequently injected with epinephrine and one hemoclip was placed. Patient later remained hemodynamically stable throughout the rest of his hospitalization. (Figure)
Discussion: Dieulafoy's lesion is a large caliber aberrant submucosal vessel that erodes through overlying epithelium. It is a rare but well known cause of potential life threatening gastrointestinal hemorrhage. Enhanced blood flow through the enlarged artery may cause hypoperfusion, ischemia, and erosion of overlying mucosa. It is more prevalent in males with cardiopulmonary and/or renal failure comorbidities such as our patient's case. It is also considered one of the most under-recognized conditions due to its difficulty in diagnosis. Upper endoscopy is effective in diagnosing up to 70% of cases, however in some cases it may be overlooked. Factors that may lead to a missed diagnosis are excessive blood, small size of the lesion, poor insufflation during endoscopy, intermittent activity or unusual location such as the jejunum or ileum. When EGD and colonoscopy are non-specific, a push enteroscopy or wireless capsule may have a higher yield. If a gastrointestinal approach is not successful, we can also consider alternative treatments such as angiography and/or surgery. When encountering an obscure cause of life threatening gastrointestinal bleed, a Dieulafoy's lesion must remain in our differential.



[2674] **Figure 1.** (Upper right image) Large caliber (Dieulafoy Lesion) protruding through the mucosal wall in the lesser curvature of the stomach. (Right lower image) Dieulafoy lesion after epinephrine and hemoclip hemostatic treatment.

S2675

Ischemic Gastropathy vs. Severe *H. pylori* Gastritis in a Patient With Extensive Vascular Disease

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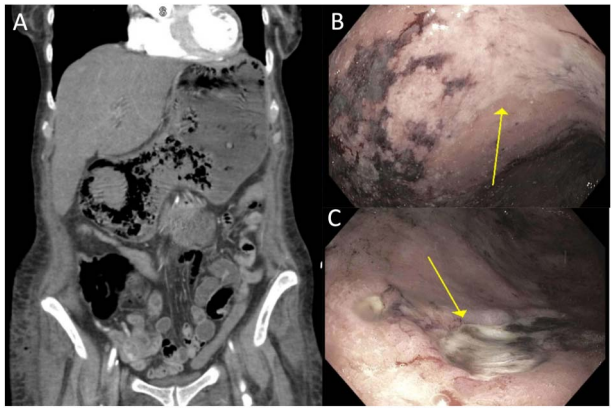
Introduction: Approximately half of gastric ulcers are associated with H. pylori. Conversely, gastric ulceration secondary to ischemia is rare due to the stomach's abundant vascular supply from all three branches of the celiac artery. Here we present a case of a patient with upper gastrointestinal bleeding and concern for gastric ischemia who was diagnosed with H. pylori associated gastritis.
Case Description/Methods: A 70-year-old female with severe peripheral artery disease, abdominal aortic aneurysm status post endovascular repair, hypertension, HIV, chronic kidney disease and B-cell lymphoma was admitted for pathologic right hip fracture and underwent open reduction and internal fixation. The procedure was complicated by lactic acidosis, an elevated troponin, and transaminitis in the setting of intraoperative hypotension. Six days later the patient had coffee ground emesis and melena with a lactate of 9.8 mmol/L and a hemoglobin of 6.4 g/dL, from 8.9 g/dL one day prior. 2 units of packed red blood cells were administered, anticoagulation was stopped, and a proton pump inhibitor was given. CT angiography of the abdomen and pelvis demonstrated splenic infarction, marked attenuation of multiple mesenteric vessels including the celiac artery, concern for ischemia of the stomach and cecum, and significant distention of the stomach (Figure A). Upper endoscopy demonstrated severe gastric mucosal pallor and decreased vascular pattern, diffuse linear erosions throughout the gastric fundus and body, and multiple large superficial ulcerations without active bleeding (Figure B and C). Given the appearance of the mucosa and overall clinical picture, there was concern for ischemic gastritis and biopsies were taken. Histology later revealed erosive gastritis, regenerative change and H. pylori without evidence of microthrombi or changes consistent with ischemia and the patient was started on quadruple therapy for H. pylori gastritis. She had one further episode of melena and received an additional blood transfusion before she was discharged one week later.
Discussion: Our patient had extensive vascular disease and systemic hypotension with endoscopic findings highly suspicious for ischemic injury but with biopsies consistent with severe H. pylori gastritis. Although ischemic gastropathy should be considered in cases of an upper GI bleed in patients with vascular risk factors, careful histopathologic review is important for accurate diagnosis, and severe presentations of more routine diagnoses should also be considered.



[2675] **Figure 1.** A) CT angiography of the abdomen and pelvis demonstrating significant gastric distention. B) Esophagogastroduodenoscopy demonstrating mucosal pallor and C) large ulcerations within the gastric body.

S2676

A Case of Hemorrhagic Cholecystitis and Bleeding Duodenal (Ulcer): A Rare Coincidence!

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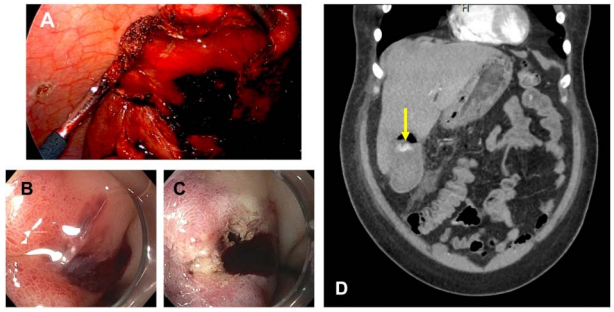
Introduction: Hemorrhagic cholecystitis is a life-threatening condition and may result in death if not treated promptly. Here, we present an atypical case of hemorrhagic cholecystitis that presented with melena but no abdominal pain.
Case Description/Methods: A 43-year-old man with a past medical history of hypertension and paraplegia presented to the hospital with black tarry stools for 1 day. He denied fever, abdominal pain, and diarrhea. Vital signs were normal. Physical examination was significant for conjunctival pallor. Laboratory showed Hb 6g/dL, Hct 22.3%, WBC 8.20 k/µL, platelet 339 k/µL. The patient was transfused but continued to bleed and was taken to endoscopy. Further history revealed that the patient is T8 level paraplegic. Esophagogastroduodenoscopy showed a duodenal ulcer with oozing hemorrhage which was treated with thermotherapy; however, oozing continued, thermotherapy was avoided to prevent deep tissue injury and perforation as exact bleeding source could not be identified. Interventional radiology was consulted for embolization. After embolization, his hemoglobin continued to drop requiring blood transfusion. Computed tomography (CT) with angiography of the abdomen and pelvis was then performed which revealed a small focal area of active bleeding in the gallbladder. Patient was taken for emergent cholecystectomy. Intraoperative finding revealed active bleeding with clot in the gallbladder lumen. Following surgery, patient's hemoglobin stabilized. Histopathology of the resected gallbladder revealed multiple stones impact in the gallbladder wall. (Figure)
Discussion: Hemorrhagic cholecystitis is an extremely rare complication of cholecystitis. Our patient has no risk factor for developing hemorrhagic cholecystitis and his clinical presentation was ambiguous since the patient is paraplegic and does not have normal sensation in his abdomen. Patients with upper gastrointestinal bleeding (UGIB) usually undergo EGD for the management of the bleeding. However, UGIB refractory to an endoscopic treatment often requires endovascular intervention by radiology and surgery as appropriate. In our case CT angiogram of abdomen and pelvis revealed second source of the bleeding which was in the gallbladder leading to emergent cholecystectomy.This is a rare coincidence in which a patient with simultaneous bleeding from duodenal ulcer also found to have hemorrhagic cholecystitis. One hypothesis includes cholecystoduodenal (bilioenteric) fistula which is the infrequent complication of untreated cholelithiasis.



[2676] **Figure 1.** (A) Laparoscopic performed for total cholecystectomy showed actively bleed with clot in gall bladder lumen (B) EGD showed duodenal ulcer with oozing hemorrhage (C) Ongoing bleeding despite thermotherapy (D) CT angiography of abdomen and pelvis showed contrast extravasation in the gall bladder lumen (yellow arrow) suggesting active bleeding into gall bladder.

S2677

A Case of Blue Rubber Bleb Nevus Syndrome in an Elderly Patient

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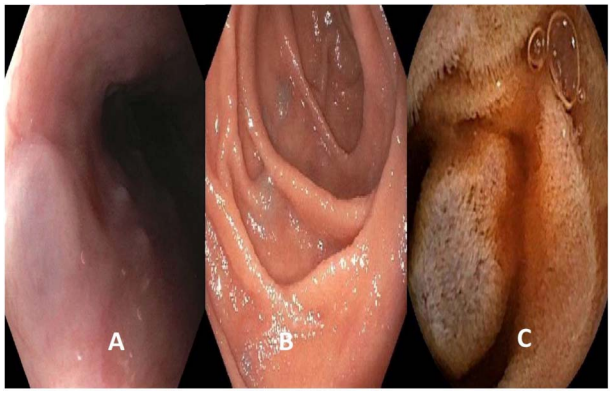
Introduction: Blue Rubber Bleb Nevus Syndrome (BRBNS) is an uncommon disorder with only about 200 cases reported worldwide. It is defined by the formation of soft rubbery venous blebs that mostly involve the skin, gastrointestinal (GI) tract, central nervous system, spleen and other visceral organs. BRBNS is mostly diagnosed in children with only 4% incidence noted in adult age groups. Herein we describe the case of the oldest reported individual newly diagnosed with BRBNS who was a 90 year-old lady presenting with small bowel bleeding.
Case Description/Methods: A 90-year-old woman with history of atrial fibrillation on apixaban presented to the emergency room with a few week history of melena. Vital signs were significant for tachycardia with a heart rate of 110 beats/min. Physical exam showed pale conjunctiva with no noted cutaneous lesions. Laboratory tests were significant for a hemoglobin of 7.2 g/dL down from a normal baseline (normal range 12-16 g/dL). Upper endoscopy showed non bleeding submucosal venous structures in the esophagus and duodenum (panel A, B). Colonoscopy showed coffee ground blood with no noted source of bleeding. Capsule endoscopy revealed numerous venous structures in the small bowel with active oozing in the jejunal loops suggestive of BRBNS (panel C). A single-balloon assisted deep enteroscopy was offered to attempt to control the bleeding however the patient preferred to avoid any further endoscopic or surgical interventions and chose to receive palliative care. (Figure)
Discussion: Most BRBNS cases are sporadic however inheritance through autosomal dominance fashion via *TEK* gene mutations have been reported in a minority of cases. GI involvement by BRBNS usually manifests as GI bleeding that can range from a chronic slow rate to a massive and life-threatening hemorrhage. Presentation with bowel volvulus, intussusception, infarction and gangrene have been reported. Direct examination through endoscopic visualization is the diagnostic and potentially therapeutic intervention of choice. Management depends on the initial presenting symptoms and extent of involved areas

and include iron supplementation, blood transfusion and endoscopic control of bleeding. Surgical resection of affected bowel loops is reserved for complicated and refractory cases. Ongoing clinical trials evaluating the efficacy and safety of sirolimus, interferon-beta and octreotide are underway for the management of complex cases. Recurrence is common and no curative treatment is currently available.



[2677] **Figure 1.** Panel A: Upper endoscopy showing non-bleeding venous structures in the esophagus. Panel B: Upper endoscopy showing non-bleeding venous structures in the duodenum. Panel C: Capsule endoscopy revealing numerous venous structures in the small bowel.

S2678

A Case of Capecitabine-Induced Gastrointestinal Hemorrhage

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Introduction: Capecitabine is a common agent utilized in adjuvant chemotherapy for breast, esophageal and colorectal cancers. Capecitabine- induced terminal ileitis or ileocolitis leading to severe gastrointestinal bleed is rare but potentially life-threatening, requiring early intervention and timely recognition of associated symptoms. We present the case of a patient with capecitabine-induced ileocolitis who presented with persistent high-grade bloody diarrhea.
Case Description/Methods: A 69 year-old-man presents to ED for 1 week of watery diarrhea and 2 days of bloody stool with clots, associated with near-syncope and fall. He had a history of right hemicolectomy with ileocolonic anastomosis due to adenocarcinoma of colon, and was receiving chemotherapy with capecitabine (3 cycles) at the time of admission. Physical exam was significant for pallor, diffuse abdominal tenderness, and rectal exam positive for hematochezia. Laboratory investigations showed profound normocytic anemia (Hg 4.1 g/dl), elevated white blood cell count, hypokalemia, elevated lactate (3.7) and elevated INR (1.4). CT angiography of abdomen/pelvis showed thickening of distal ileum proximal to the ileocolic anastomosis, without frank extravasation identified. Colonoscopy revealed erythematous mucosa and multiple non-bleeding ulcers with overlying exudates around ileocolonic anastomosis and more proximally into the ileum, in addition to small caliber non-bleeding diverticula and internal hemorrhoids. Biopsies showed marked active inflammation with heavy lymphoblastic infiltrated, with eosinophils, neutrophils, as well as cryptic distortion and surface erosion. Diagnosis of capecitabine-induced ileocolitis performed based on the history and endoscopic findings. Withdrawal of capecitabine in addition to supportive care was performed, and symptoms eventually improved after a prolonged hospital course.
Discussion: While few have described that persistent diarrhea and ileitis or ileocolitis are potential complications of capecitabine use, there is even more paucity of data regarding capecitabine-associated GI bleeding. The precise mechanism of capecitabine-induced GI injury is unknown; however it has been suggested that induces loss of epithelial surface secondary to acute mucosal injury through interference with crypt cell mitoses. Our case identifies a rare but critical presentation of capecitabine-associated GI toxicity, as the treatment with capecitabine should be considered more often as a cause of severe gastrointestinal bleeding.

S2679

***Helicobacter pylori* Negative Mucosa-Associated Lymphoid Tissue (MALT) Lymphoma Presenting as a Severe Upper Gastrointestinal Bleed**

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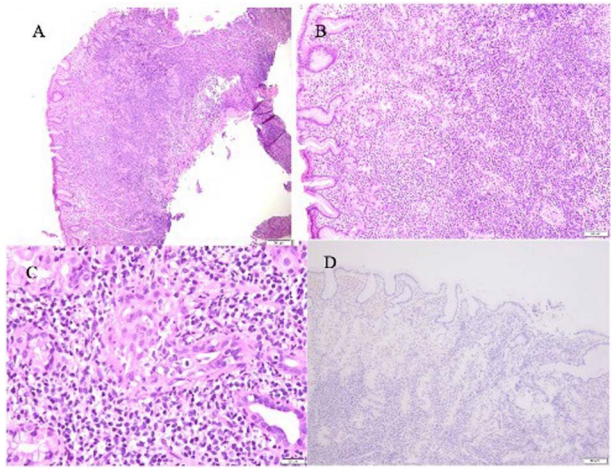
Introduction: Mucosal associated lymphoid tissue lymphoma (MALT Lymphoma) is a non-Hodgkin lymphoma arising from memory B cells. *H. pylori* is thought to create a favorable microenvironment for neoplastic B cells, which leads to lymphoma. Surveillance and treatment of *H. pylori* is the only daily practice that holds clinical value in preventing gastric MALT lymphoma. As a result, the incidence of *H. pylori* gastric MALT lymphomas has decreased in western countries.[2] At the time of diagnosis of gastrointestinal MALT lymphoma, bleeding is rarely encountered and when present, is most often occult. Here we present a unique case of *H. pylori* negative MALT lymphoma presenting as a severe gastrointestinal bleed.
Case Description/Methods: A 75-year-old male presented after one episode of large volume melena. On initial presentation, the patient was confused and unable to provide additional history. His vital signs were significant for blood pressure of 65/28 mmHg and heart rate of 111 bpm. Labs revealed hemoglobin of 10.3 g/dL and lactate of 5.2 mmol/L. The patient was resuscitated, and a pantoprazole infusion was started. Upper endoscopy revealed a 1 cm clean-based ulcer with heaped-up margins in the gastric body. Pathology of the ulcerated tissue revealed extensive lymphoid infiltrate with atypical lymphoid cells consistent with MALT lymphoma (Figure). Gastric antral and body biopsies were negative for *H. pylori* infection.
Discussion: While gastric MALT lymphoma typically presents with constitutional symptoms or dyspepsia, this case highlights an exceedingly rare presentation of *H. pylori negative* MALT lymphoma presenting with hemorrhagic shock. There is still much to learn about *H. pylori negative* MALT lymphoma, and the pathogenesis remains unclear. Identifying the pathogenesis for *H. pylori negative* MALT lymphomas will be paramount to improving detection and treatment options for patients. Several theories currently exist to explain the pathogenesis, including genetic alterations causing activations to nuclear factor-kappa, infection with organisms other than *H. pylori*, or the presence of autoimmune disease.[1]



[2679] **Figure 1.** A) Gastric mucosa with extensive diffuse lymphoid infiltrate in lamina propria (40x). B) Destruction of gastric glands by dense lymphoplasmacytic infiltrate (100x). C) Lymphoepithelial lesions; infiltration and distortion of gastric glands by aggregates of (usually 3 or more) neoplastic lymphoid cells (400x). D) Immunostaining for H.pylori is negative (100x).

REFERENCES

1. Asano N, et. al. Helicobacter pylori-negative gastric mucosa-associated lymphoid tissue lymphomas: A review. 2015, 8014–8020.
2. Kiesewetter B, et. al,. Genetic Characterization and Clinical Features of Helicobacter pylori Negative Gastric Mucosa-Associated Lymphoid Tissue Lymphoma. 2021; 13(12):299.

S2680

A Case Report of Radiation-Induced Hemorrhagic Gastritis Successfully Treated With Bevacizumab After Failing Endoscopic and Hyperbaric Oxygen Therapies

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Introduction: Radiation induced gastritis is an uncommon complication of radiation therapy. Therapies that have been attempted for this pathology include argon plasma coagulation (APC), oral prednisolone, radio-frequency ablation, hyperbaric oxygen, and surgical intervention. We present a case of radiation induced gastritis complicated by transfusion dependent anemia and melena that was successfully treated with Bevacizumab

Case Description/Methods: This patient is a 65-year-old male with medical history significant for esophageal adenocarcinoma in 2014 treated with chemoradiation and subsequently esophagectomy. Several years after therapy, he started to report tarry stools, and was found to be anemic with iron studies consistent with severe iron deficiency. He had an esophagogastroduodenoscopy (EGD) that showed severe distal esophagitis. Follow up colonoscopy was unremarkable. He was started on omeprazole and iron infusions, but he needed frequent blood transfusions. He had a repeat EGD that showed diffuse erythema, friability and oozing of the gastric mucosa. This was treated with APC. A biopsy showed a single focus of intravascular fibrin thrombus concerning for radiation induced gastritis. He had transient resolution of his melena, but then had recurrence one month later. He underwent further endoscopies with thermal therapy, which failed to control his bleeding. Hyperbaric oxygen therapy was trialed. After completing multiple sessions, his symptoms persisted. Surgical evaluation was recommended but the patient declined. The patient was then started on anti-angiogenic therapy with Bevacizumab 5mg/kg every 2 weeks and his melena resolved, requiring less transfusions. He stopped taking Bevacizumab two months later as he was scheduled for hernia repair, and he had recurrence of his melena and worsening anemia post-operatively. After being restarted on Bevacizumab, his melena resolved

Discussion: Hemorrhagic radiation gastritis is mainly due to mucosal injury and telangiectatic vessels from angiogenesis secondary to endothelial proliferation. Bevacizumab is an anti-vascular endothelial growth factor humanized monoclonal antibody that inhibits angiogenesis. It has been shown to be effective in treatment of hereditary hemorrhagic telangiectasia, gastric antral vascular ectasia, and small bowel angioectasia. It has also been reported to treat hemorrhagic gastritis in a few case studies. Our case demonstrates that Bevacizumab is a promising pharmacologic treatment for radiation induced hemorrhagic gastritis.

S2681

A Pain in the Rectum: Syphilis Manifesting as Proctitis

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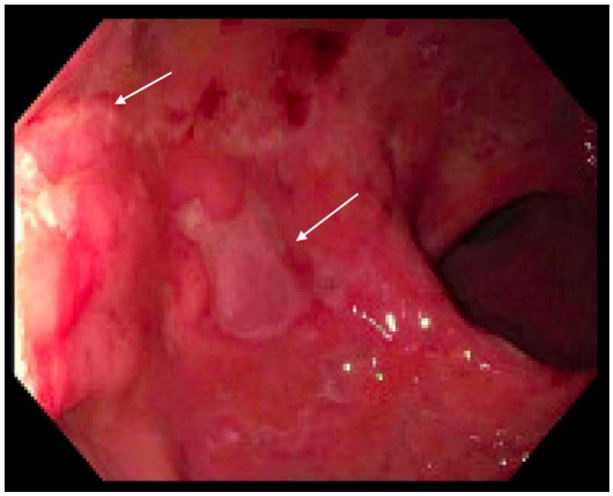
Introduction: Anorectal syphilis is often challenging to diagnose due to the atypical clinical presentation and asymptomatic disease course. Patients who engage in high-risk sexual behavior are at increased risk for sexually transmitted infections. We present a unique case of rectal bleeding and diarrhea secondary to anorectal syphilis.

Case Description/Methods: A 31-year-old uninsured man presented to the ER with a 1 month history of rectal bleeding, abdominal pain and diarrhea. His past medical history is remarkable for untreated HIV and Factor V Leiden deficiency. He reported being sexually active with multiple male partners and engaging in unprotected anal receptive intercourse. He denied alcohol, tobacco or ilicit drug use. Vital signs were unremarkable on admission. Physical exam was significant for a soft abdomen with palpable tenderness in the lower quadrants without guarding or rebound tenderness. Digital rectal exam was negative for blood, stool, visible lesions or ulcerations. Labratory analysis revealed a hemoglobin of 15.2 g/dL and HIV CD4 count was 877 per mcL. Chemistry panel including liver tests were within normal limits. Computed tomography (CT) of the abdomen revealed mucosal thickening of the rectum with mild fat stranding consistent with inflammation. In the setting of reported hematochezia and abnormal imaging findings the patient underwent colonoscopy which revealed multiple, shallow ulcerations confined to the rectum. Ulcer biopsies were obtained and revealed active proctitis with spirochetes on immunostaining. Treated was initiated with Penicillin G. He had improvement in abdominal pain and resolution of hematochezia. (Figure)

Discussion: Syphilitic proctitis is most often associated with pain on defecation, intermittent rectal bleeding and diarrhea. In high risk patient groups, such as MSM and sex workers, clinical suspicion should be high for sexually transmitted infections that affect the anorectal region. Diagnosis of syphilis is based on clinical findings, serological testing and in some cases, tissue biopsy. Primary disease usually occurs at the exterior anal verge, at points of sexual contact. Our case describes syphylitic ulcerations scattered within the rectum without exterior involvement, making it a highly unusual presentation. Although various diagnostic information can be helpful, it is vitally important that physicians rely on their own expertise and knowledge to recognize subtle findings that may help establish a diagnosis, especially in those who are immunocompromised.



[2681] **Figure 1.** Multiple scattered ulcerations in the rectum (white arrows).

S2682

A Complicated Course of Pancreatic Pseudoaneurysm Presenting as Hemosuccus Pancreaticus

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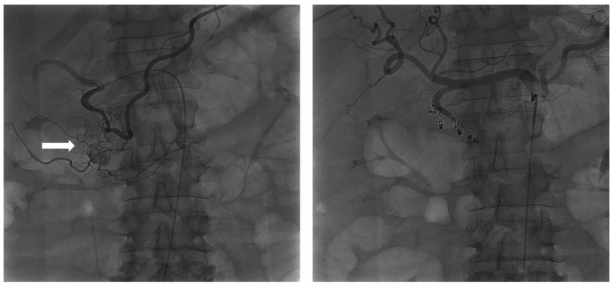
Introduction: Hemosuccus pancreaticus (HP) is a rare cause of gastrointestinal bleeding, usually from a pancreatic pseudoaneurysm. It can be life-threatening due to a challenging diagnosis given the intermittent nature and unusual site of bleed.
Case Description/Methods: 67-year-old man with a history of heavy alcohol use was admitted for worsening abdominal pain and distention. Contrast-enhanced CT scan of his abdomen revealed cirrhosis, ascites, and two cystic lesions in the pancreatic head measuring 15mm and 5mm, respectively. EGD was performed for variceal screening that revealed a duodenal sweep visible vessel without active bleeding. It was treated with epinephrine injection and bipolar electrocoagulation. Extrinsic mass effect was felt along the distal stomach and proximal duodenum during the procedure. The patient complained of worsening generalized abdominal pain the next day, and a repeat scan revealed a large mass concerning pancreatic head mass hematoma (4.6×3.7 cm) with acute bleeding. His hemoglobin was low but stable at 11.4 (N=14.0-17.5) g/dl. The patient underwent Interventional Radiology (IR) guided embolization within the gastroduodenal artery across the origin of the superior pancreaticoduodenal arcade. The inferior pancreaticoduodenal artery was also embolized (Figure). Subsequent Multiphase CT scans of the abdomen revealed persistent active extravasation but appeared less prominent than in the prior study. No further interventions were pursued as the residual lumen was expected to thrombose on its own. The patient was discharged to rehab but promptly returned to the emergency department following two episodes of coffee ground emesis. His Hb dropped to 7.0 g/dl. CT scan again showed enlarging hematoma (4.9×4.3 cm) with active extravasation. The patient underwent IR guided puncture of the pseudoaneurysm from a posterior approach, and the site was injected with 0.9cc of onyx followed by 150 units of thrombin. Shortly following the procedure, the patient sustained asystole and passed away.
Discussion: Hemosuccus pancreaticus is most frequently caused by the rupture of a pseudoaneurysm of the peripancreatic arteries associated with chronic pancreatitis. The bleed is intermittent and thereby can be missed during endoscopies. Bleeding from branches of the hepatic artery is rare in contrast to the splenic artery. Clinicians should have a high degree of suspicion for Hemosuccus pancreaticus in patients with a history of chronic pancreatitis presenting with intermittent melena.



[2682] **Figure 1.** Celiac arteriography showing large pseudoaneurysm (arrow) in area of the pancreatic head with subsequent embolization of superior and inferior pancreaticoduodenal artery.

S2683

A Case of Spontaneous Duodenocaval Fistula Formation in a Patient With a Large Necrotic Duodenal Ulcer

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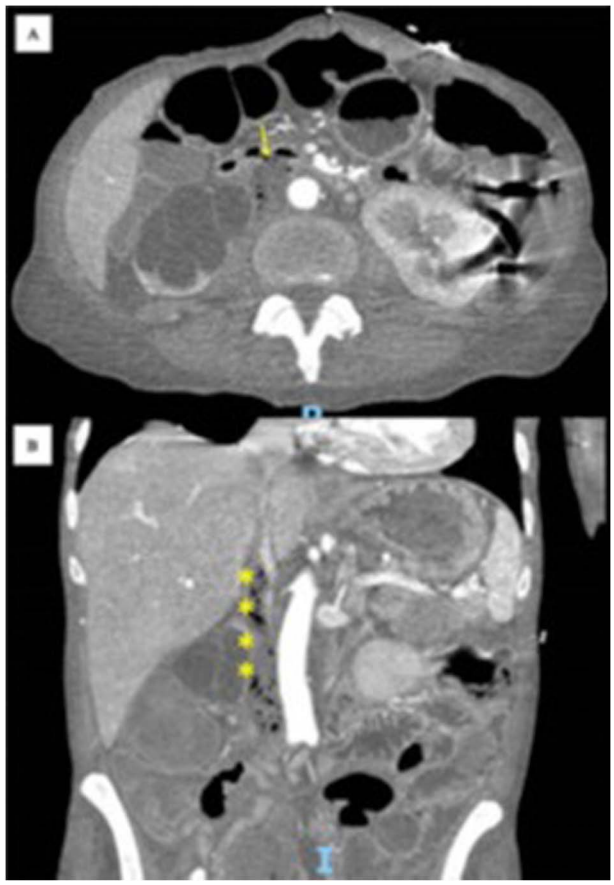
Introduction: Duodenocaval fistulas (DCFs) are rare digestive fistulas that present with gastrointestinal bleeding and sepsis and carry a 40% mortality rate. Most reported cases usually have a predisposing event, including a penetrating abdominal trauma, a penetrating strut of a retrievable inferior vena cava (IVC) filter, or a foreign body impaction in the duodenum. A few cases have been reported in patients with no prior trauma or surgery, such as those with a history of peptic ulcer disease (PUD). We present a rare case of spontaneous DCF formation in a patient with a history of a PUD who presented with fresh, bright red blood per rectum (FBRBR) and sepsis secondary to bacteremia and fungemia.
Case Description/Methods: A 63-year-old female patient with a history of a 3cm necrotic ulcer in the second part of the duodenum and stage III ovarian cancer status post total abdominal hysterectomy on active chemoradiotherapy, with the last session being a month prior to presentation, presented for evaluation of a 5-day history of FBRBR with clots in the setting of recent excessive non-steroidal anti-inflammatory drugs (NSAIDs) use. On presentation, the patient was hypotensive and tachycardic. The initial investigation was notable for an acute drop in hemoglobin from a baseline of 8.7g/dL to 3.6 g/dL and an acute kidney injury. The patient received empiric intravenous antibiotics, intravenous fluid boluses, and six units of packed red blood cells with an improvement in vital signs and hemoglobin. Blood cultures grew *Enterococcus Faecalis, Streptococcus anginosus, and Candida albicans.* A computed tomography angiography (CTA) of the abdomen and pelvis with intravenous contrast was performed, revealing evidence of locules of gas within the intrahepatic IVC with communication with the duodenal lumen suggestive of a duodenocaval fistula (Figure). The interventional radiology team was consulted and recommended

surgical evaluation as the case was not amenable to endovascular intervention. General surgery, surgical oncology, and vascular teams concluded that intraoperative mortality associated with reconstruction would approach 100%. The patient was then evaluated by palliative and hospice teams, and she was discharged with home hospice services two days after admission. (Figure)
Discussion: Our case emphasizes that in patients presenting with FBRBR and sepsis, clinicians should have a high suspicion of DCFs, especially in the setting of a history of PUD, abdominal surgery and radiotherapy, and recent excessive NSAID use.



[2683] **Figure 1.** Axial (A) and coronal (B) views of an enhanced abdominal CTA scan demonstrating locules of gas within the inferior vena cava (yellow asterixis) with communication with the duodenal lumen (yellow arrow) suggestive of a duodenocaval fistula.

S2684

A Rare Case of *Helicobacter pylori* Gastric Ulcer Causing Left Gastric Artery Pseudoaneurysm and Upper GI Bleed: A Case Report and Scoping Review of Human Cases

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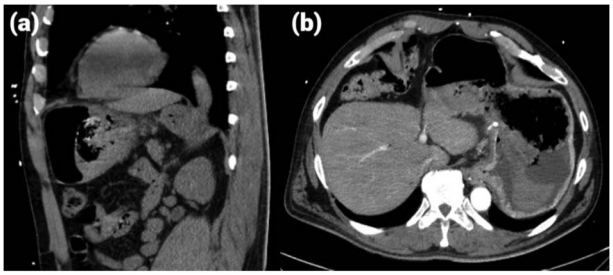
Introduction: Pseudoaneurysm is an uncommon but lethal presentation of upper gastrointestinal hemorrhage, as a rupture is associated with a 40-80% mortality rate. Here, we report a rare case of left gastric artery pseudoaneurysm secondary to Helicobacter pylori (HP) infection-associated peptic ulcer disease presenting as upper gastrointestinal hemorrhage.
Case Description/Methods: A 62-year-old male with a history of oral cancer status post resection in 2015, polysubstance use disorder (cocaine, heroin, and methamphetamine), hypertension, and gastroesophageal reflux disease presented to the hospital with chest and epigastric pain and melena. Admission laboratory findings were notable for acute kidney injury, leukocytosis, and normocytic anemia. Computed tomography angiography (CT-A) demonstrated a small pseudoaneurysm arising from the left gastric artery projecting into the stomach wall, heterogeneous material within the stomach, and a prominent left gastric artery. These findings were concerning for intraluminal hemorrhage (Figure). The patient underwent emergent embolization of the left gastric artery pseudoaneurysm, followed by esophagogastroduodenoscopy (EGD). This revealed a 2.5 cm ulceration over the lesser curvature of the stomach, and biopsies were positive for HP infection. A systematic review in PubMed and Embase for gastric artery pseudoaneurysm due to gastric ulcer only resulted in one other case report. Though also rare, splenic artery pseudoaneurysm due to gastric ulceration is more common, as our search yielded 5 case reports.
Discussion: Acute upper gastrointestinal bleeds presenting to the emergency department are most commonly secondary to variceal hemorrhage or peptic ulcer disease. Peptic ulcer disease can result in gastric artery pseudoaneurysm, however as we only found only one other case report documenting this presentation, it appears to be extremely rare. Recognition of gastric pseudoaneurysm on the CT-A should prompt endoscopic exploration and biopsy with HP testing, with close follow-up for a test of cure.



[2684] **Figure 1.** Computed tomography angiography. (a) Sagittal plane, (b) Transverse plane.

S2685

A Rare Case of Iron Pill-Induced Acute Hemorrhagic Gastric Ulcer: An Uncommon Complication of a Common Intervention

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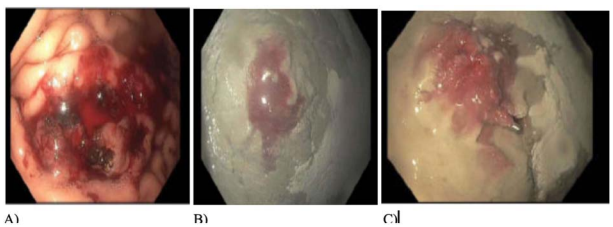
Introduction: Iron Pill induced acute hemorrhagic gastric ulcer formation is an understudied and overlooked complication of a common intervention. Oral iron supplementation is the first-line therapy for iron deficiency anemia. Though iron pill gastritis has been previously studied, the acute formation of a large hemorrhagic gastric ulcer is not commonly observed. Given the ubiquity of oral iron supplementation, complications of iron pills, including hemorrhagic gastritis and bleeding ulcers, it is important to be aware of, as this can worsen anemia.
Case Description/Methods: A 45-year-old male with iron deficiency anemia on ferrous sulfate tablets for the past 2 months due to likely nutritional deficiency secondary to poor diet and chronic alcoholism presented due to worsening, symptomatic anemia with a history of melena for the past 4 months. The patient had a recent endoscopy 1 month prior which showed a 16mm non-bleeding ulcer in the gastric antrum. Upon admission, the patient underwent upper gastrointestinal endoscopy which revealed a large actively bleeding gastric ulcer on the greater curvature of the stomach not present 1 month prior. Coagulation was attempted but was unsuccessful. Subsequently, multiple hemostatic sprays were deployed and one hemostatic clip was deployed but oozing still persisted. The patient subsequently had mesenteric angiography and required interventional radiology to embolize the left gastric artery feeding the ulcer. Biopsy taken during endoscopy revealed iron pill gastritis. (Figure)
Discussion: Ferrous sulfate tablets can cause acute mucosal injury and disrupt the normal protective barrier of the gastric mucosa. This permits luminal irritants such as peptic acid, bile acids, and pepsin to penetrate the lamina propria. Iron pill gastritis most commonly causes erosive gastropathy, with an incidence of 0.7%(1), as small petechial lesions. Rarely, this may progress to ulcer formation which is usually shallow and in the gastric antrum(2). Our patient had a rare case of severe hemorrhagic ulceration along the greater curvature of the stomach. Given the widespread use of ferrous sulfate tablets for the treatment of iron deficiency anemia, it is imperative for clinicians to be aware of this serious complication in patients who are having symptoms of refractory anemia or showing signs of possible peptic ulcer disease. A high degree of suspicion in patients on oral iron supplementation can prevent catastrophic complications.



[2685] **Figure 1.** A) Lesion Prior to Intervention B) Lesion After Hemospray C) Lesion after Hemostatic Clip Placement.

S2686

A Rare but Potentially Fatal Cause of Abdominal Pain: Segmental Arterial Mediolysis

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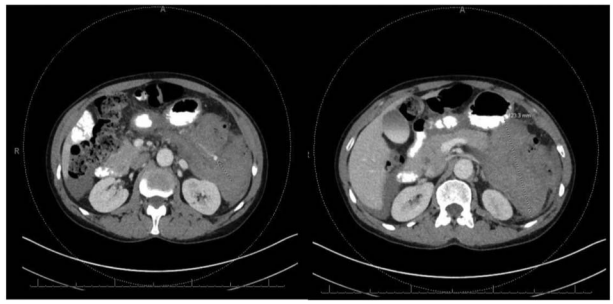
Introduction: Segmental arterial mediolysis (SAM) is a rare disease, defined as a nonatherosclerotic, noninflammatory disruption of the arterial medial layer of a medium- to large-sized artery. We describe a case of a healthy woman with acute onset abdominal pain subsequently found to have spontaneous peritoneal hemorrhage from SAM.
Case Description/Methods: A 52-year-old former professional female athlete developed abrupt onset lower abdominal pain with nausea and vomiting. Pain was 10/10 in severity with a sharp and crampy quality. She denied fevers, diarrhea, melena, bloody stool, ill contacts, recent travel, or prior episodes. Past medical history was significant for endometrial polyp, menopause, and iron deficiency. She had no prior surgeries. Family history included colon cancer in her father and ovarian cancer in her mother. Her abdomen was soft with tenderness in the lower quadrants with the remainder of the exam unremarkable. Labs including CBC, BMP, LFT, lipase, beta hCG, troponin, ESR, CRP, serum acetone, urinalysis, and lactic acid were reassuring. CT abdomen and pelvis with and without contrast demonstrated hyperenhancing hepatic lesions suggestive of hemangiomas. Ultrasound of the pelvis with duplex was normal with arterial and venous duplex waveforms to both ovaries. On the second day of hospitalization, she had another episode of abdominal pain with labs demonstrating a hemoglobin drop from 13.7 g/dL to 10.2 g/dL. Repeat CT abdomen pelvis with contrast demonstrated large volume hemorrhagic ascites up to 16 cm in size with concerns for active hemorrhage in the left upper quadrant. Diagnostic angiography was performed by Interventional radiology which did not show active arterial hemorrhage although demonstrated fusiform dilatation of the distal middle colic artery and short segment focal fusiform dilatation of the left colic artery at the splenic flexure suggestive of SAM. She subsequently underwent diagnostic laparoscopy and evacuation of hemoperitoneum with over 1L of unclotted blood evacuated with a mesenteric hematoma noted in the distal transverse and proximal descending mesocolon. The spontaneous peritoneal hemorrhage was thought to be secondary to underlying arterial abnormalities triggered by minor trauma. (Figure)
Discussion: Vascular causes of abdominal pain such as segmental arterial mediolysis are uncommon. Awareness of noninflammatory and nonatherosclerotic artery diseases such as SAM need to be recognized since they can be fatal if not treated promptly.



[2686] **Figure 1.** Fig 1 demonstrates a bleeding artery as seen on CT abdomen and pelvis with intravenous contrast. Fig 2 demonstrates the large hemoperitoneum in the left upper quadrant seen on CT abdomen and pelvis.

S2687

A Rare Case of Ischemic Proctitis in the Setting of COVID-19

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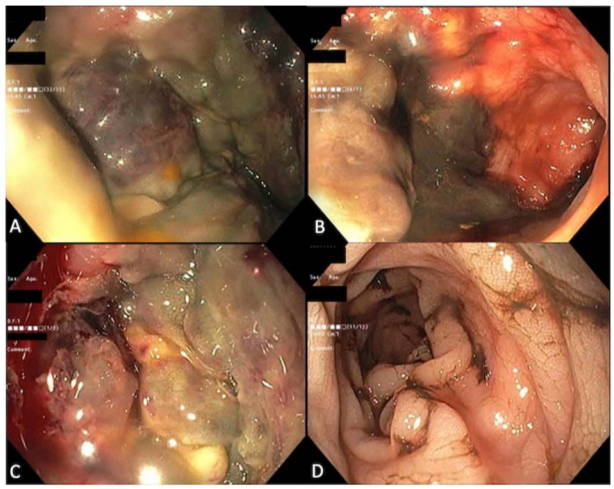
Introduction: The association between COVID-19 and GI symptoms has been well-established. Due to the incompletely understood pathophysiology, new GI complications are continuously reported. Ischemic proctitis (IP) is a rare complication as the rectum has excellent collateral blood supply from the rectal arteries. We present a case of an elderly patient with IP in the setting of COVID-19.
Case Description/Methods: A 66-year-old female with type 2 DM, hypertension, and GERD presented to the ED with severe shortness of breath and cough and was diagnosed with a COVID-19 infection. She was started on dexamethasone, remdesivir, therapeutic-dose enoxaparin and ceftriaxone. Her oxygen requirements increased, and she was transferred to the ICU for intubation and vasopressor support on day 4. Given a persistent decrease in hemoglobin requiring RBC and platelet transfusions on day 6, occult GI bleeding was suspected and she underwent emergent flexible sigmoidoscopy. Sigmoidoscopy showed necrotic circumferential mucosa with a large amount of blood clots starting 5cm from the anal verge and extending to 10cm in the rectum. The clots were removed, and after injection with epinephrine, no active bleeding was noted. Biopsies were taken from edges of the mucosal necrosis. The endoscope was advanced 50cm into descending colon and no active bleeding or abnormal mucosa were noted. Pathology showed marked mucosal necrosis and fibroinflammatory exudate. The patient further decompensated with superposed bacterial pneumonia, shock, AKI requiring hemodialysis, and expired one month after admission. (Figure)
Discussion: COVID-19 causes a variety of respiratory symptoms in different stages of illness. Additionally, GI symptoms such as vomiting and diarrhea were linked to the virus. GI complications, such as mesenteric ischemia or ischemic colitis have also been associated with the virus due to shock and hypercoagulability. Although superficial ischemic events causing shallow mucosal ulcers are common, IP is extremely rare in the clinical setting. The protective mechanism against IP includes rectal blood supply by the inferior mesenteric, internal iliac and internal pudendal arteries. The main underlying causes of IP include severe vascular disease, acute vascular occlusion, previous vascular intervention, aorto-iliac surgery, and vasculitis. The treatment of ischemic proctitis is largely supportive but may be challenging when managing transmural rectal ischemia or gangrene, often requiring surgery and proctectomy as the definitive treatment.



[2687] **Figure 1:** Endoscopic imaging showing mucosal necrosis of the rectum (A) with visible blood clots (B); mucosal necrosis extending to the rectosigmoid junction (C) without apparent necrosis of the sigmoid (D).

S2688

A Rare Case of Granulomatosis With Polyangiitis Presenting as a Gastrointestinal Bleed

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Introduction: We present a rare case of granulomatosis with polyangiitis presenting as an upper gastrointestinal bleed. The clinical picture was confounded by warfarin use and a high prothrombin time, which led to a delay in other causes being explored and thus a diagnosis.
Case Description/Methods: A 64-year-old white female with a past medical history of mechanical valve replacement (on warfarin) and right nephrectomy presented with complaints of bright red blood after having a bowel movement. She also reported a history of hemoptysis and epistaxis in the past. A fecal occult blood test was positive, and her hemoglobin was well below her baseline. Her prothrombin time was elevated, as it so often had been on her numerous ED visits for similar complaints in the past. An upper endoscopy and colonoscopy were negative and common causes of gastrointestinal bleeding were ruled out, thus a more detailed history combined with the constellation of her symptoms led to a comprehensive work-up, resulting in the patient testing positive for both antineutrophil cytoplasmic antibody proteinase 3 and Myeloperoxidase. Subsequently, she was diagnosed with granulomatosis with polyangiitis. Biopsy of the kidney could not be performed due to the risks associated with the patient having one kidney.
Discussion: Rarely do granulomatosis with polyangiitis patients present with a gastrointestinal bleed as their chief complaint. Whilst other causes of gastrointestinal bleeding are far more prevalent and common, this case highlights the need to keep in mind that rare diseases are always possible. Not every GI bleed will have a common answer. What's key here is that the patient had been experiencing a multitude

of symptoms for several years, which had always been attributed to her high prothrombin time. When symptoms persist and worsen, it is important to obtain more history and broaden one's differential to look at other possible causes. Many presentations will have a multifactorial aspect, and the use of specialists for further analysis should be utilized. In this case, the use of GI, nephrology and Rheumatology allowed for segments of clinical data to form the diagnosis of granulomatosis with polyangiitis.

S2689

A Rare Case of SpaceOAR™ Hydrogel-Induced Rectal Ulcer Leading to Hematochezia

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Introduction: SpaceOAR hydrogel is a soft gel-like synthetic material that was FDA approved in 2015 for prostate cancer patients who are planning to undergo radiotherapy (RT). It is intended to position the anterior rectal wall away from the prostate during RT thereby reducing the dose of radiation delivered to the rectum and minimizing complications. We present a case of rectal ulcer after implantation of SpaceOAR prior to the patient receiving RT.
Case Description/Methods: A 76-year-old male was diagnosed with prostate cancer- Gleason 3+4 and was planned for RT. He underwent implantation of spaceOAR hydrogel and gold fiducial markers before RT to minimize his risk of rectal toxicity. Approximately 10 days after placement, he started experiencing severe rectal pain and hematochezia. On physical exam his abdomen was benign, but a digital rectal exam showed bright red blood. Labs revealed normal hemoglobin of 16 g/dL. A computerized tomography (CT) scan without contrast was obtained showing the presence of hydrogel between the posterior margin of the prostate and the anterior wall of the low rectum with focal proctitis in that area of the rectum. Due to ongoing hematochezia, he was scheduled for a colonoscopy which confirmed CT findings of focal proctitis but also showed a large ulcer with overlying fibrotic tissue congruent with the site of his recent urological procedure. The tissue was friable and not amenable to biopsy. He was managed with a course of levofloxacin and given polyethylene glycol to avoid constipation. At a follow-up visit, he reported resolution of hematochezia and improvement in his rectal pain. He will proceed with the initiation of RT for prostate cancer. (Figure)
Discussion: The SpaceOAR Hydrogel is designed to reduce rectal toxicity during RT for prostate cancer so a higher dose of radiation can be delivered to the prostate. There have been only a few cases of rectal ulcers after placement of the Hydrogel before the patient received RT. In most reported cases, the management was conservative. The mechanisms of injury are thought to be from infection, inflammation, or ischemia due to mechanical injury. We managed our patient with a course of antibiotics and laxatives resulting in improvement of his symptoms and he will proceed with RT as planned. This case is unique in that the patient developed symptoms only 10 days after implantation of SpaceOAR when all other documented cases took at least a few weeks to a few months.

[2689] **Figure 1.** A- Focal proctitis and large rectal ulcer in the anterior wall B- Friable tissue not amenable to biopsy C- CT scan showing hydrogel and focal proctitis.

S2690

A Rare Cause of Gastrointestinal Bleeding

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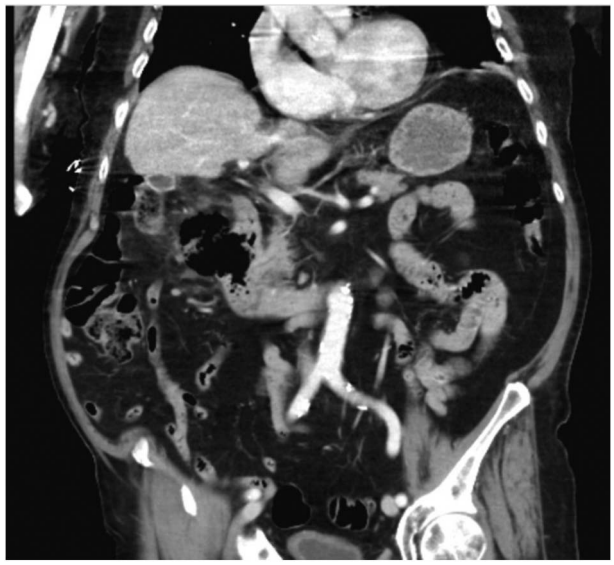
Introduction: Cryoablation is becoming a popular way to treat renal malignancy due to its low incidence of serious complications, low morbidity and mortality, lower cost, and ease of outpatient therapy. The technique uses cold temperatures to freeze, denature, and destroy cells in the tumor. This technique is usually reserved for nonsurgical candidates. It is rare to develop intestinal wall injury or fistula formation. Here we present a patient with an abnormal etiology for upper gastrointestinal bleeding (GIB).
Case Description/Methods: An 87-year-old male presented to the hospital with lightheadedness and weakness. He had a past medical history significant for hypertension, gastric reflux disease, and renal cell carcinoma. He had recently been diagnosed with two solid right renal lesions measuring 4.7x4.3 cm and 1.6x1.9 cm. Due to his age, surgery was deferred and he underwent treatment with cryoablation the day before his presentation to the ER. He was noted after the procedure to have symptoms of lightheadedness, and was hypotensive. The decision was made to admit him for observation. He underwent an initial CT scan of his abdomen and pelvis, which showed an intratumoral hematoma without active bleed. He was started on IV fluids and antibiotics. Two days into his admission, he developed bouts of melena with a subsequent drop in his hemoglobin to less than 7 g/dL. He was started on proton pump inhibitor therapy, transfused packed red blood cells, and plans were made for upper endoscopy. However, prior to endoscopy, a repeat CT scan of his abdomen and pelvis was completed, which showed the development of a new fistula between his ablated renal lesion and his duodenum. He was continued on medical management with transfusion and antibiotic therapy. He however remained transfusion-dependent with ongoing melena. After further discussion with his multidisciplinary team and family, the patient elected to forgo any additional procedures or treatments, opting for home hospice care. (Figure)
Discussion: This case illustrates an unusual and rare cause of upper GI bleed. Due to the low frequency of complications following cryoablation, there are limited cases on how to effectively manage these patients. Treatment options include medical management or surgical intervention. Typically, with medical management alone, over 50% of patients respond. However, this was not the case for our patient, and other potential therapy with intervention radiology and endoscopy should be considered for future management of these patients.



[2690] **Figure 1.** Sagittal view of the computed tomography scan showing the fistula connecting duodenum and kidney.

S2691

A Rare Presentation of Gastric Plastocytomas in a Patient With Multiple Myeloma

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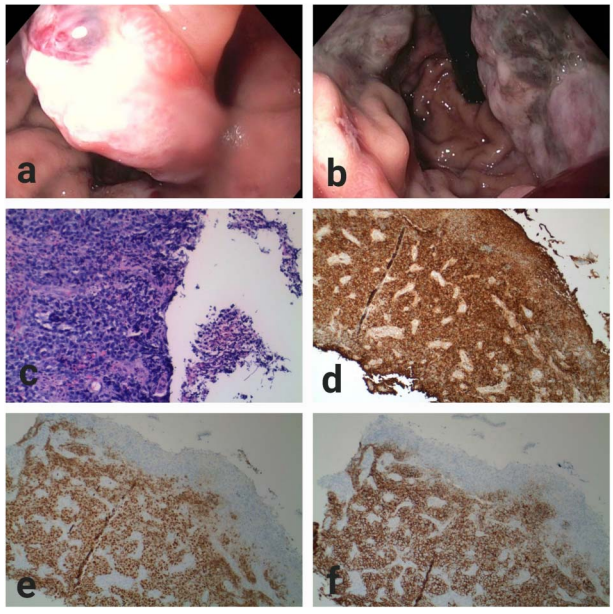
Introduction: Multiple myeloma is an uncommon hematological neoplasm. This malignancy involves unchecked plasma cell growth in the bone marrow, but in a subset of often more advanced cases, these cells may migrate to soft tissues causing extramedullary plasmacytoma. This is unusual, and, in the literature, few cases of extramedullary plasmacytomas involve the gastrointestinal tract. Within this system, the more common locations are the stomach, the liver, the large bowel, and more rarely, the small bowel.
Case Description/Methods: A 59-year-old male with a medical history of chronic hepatitis C, and Stage III multiple myeloma status post four cycles of chemotherapy presented with altered mental status. Upon evaluation, he had significant electrolyte abnormalities, remarkable anemia, severe renal and liver dysfunction, and a positive hemoccult test. Our patient received intravenous fluid, and multiple blood products. He was then admitted to the intensive care unit for a high level of care. On the second day of admission, he developed new onset hematemesis, and the gastroenterology team was consulted. The patient was started on a pantoprazole drip. Urgent esophagogastroduodenoscopy showed several polypoid appearing masses with overlying ulceration in the gastric fundus (Figure a &b), and tissue biopsies were obtained. Biopsy result of the polypoid fundal mass showed a large cell neoplasm with plasmocytic differentiation. Gastric tissue sections showed an ulcerated lesion with submucosal, tightly packed atypical large cells with multinucleation, prominent nucleoli and relatively identifiable mitoses (Figurec). A panel of immunohistochemical stains with plasma cell markers were positive for kappa, Multiple Myloma-1 nuclear protein, and CD138 (Figure d-f). The overall findings were compatible with gastric involvement by a plasma cell neoplasm.
Discussion: This case highlights a complicated, yet a uniquely rare presentation of extramedullary plasmacytoma in a patient diagnosed with multiple myeloma. Although the gastrointestinal tract is rarely involved in patients with multiple myeloma, it should be considered as the differential diagnosis in patients with gastrointestinal bleeding especially with a known concurrent systemic hematological malignancy. The presence of gastrointestinal involvement and the malignant phase of multiple myeloma are associated with a poor prognosis despite aggressive therapy, and it is therefore paramount to establish an accurate diagnosis early to avoid any delays in treatment.



[2691] **Figure 1.** (a,b) EGD shows polypoid EMP in the gastric fundus. (c) Infiltration of plasmablasts with highly atypical nuclei and prominent nucleoli (hematoxylin-eosin 20x). (d) Granular positivity for kappa immunoglobulin light chain. (e) Positive immunostaining for MUM-1. (f) Positive CD138 immunostaining highlights the plasma cells in the lamina propria of the gastric fundus EMP.

S2692

Abscess-Enteric Fistula of Failed Kidney Transplant Presenting With Gastrointestinal Bleeding

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Introduction: Lower gastrointestinal (GI) bleeding is a common occurrence, with the vast majority of cases being due to diverticula, vascular ectasias, cancers, and hemorrhoids. In rare cases, a large vessel can form a fistula with the GI tract, causing bleeding. We present a case where an abscess surrounding a failed transplant kidney eroded into the external iliac vein and presented as a slow lower GI bleed.
Case Description/Methods: A 65-year-old man with a failed renal transplant and known colovesicular fistula presented with hypotension. Labs showed a significant leukocytosis, an elevated lactate, and a hemoglobin of 6.3 g/dL. He was started on broad spectrum antibiotics, and then developed intermittent episodes of small-volume bright red blood per rectum. The patient had an upper endoscopy and colonoscopy one month prior for GI bleeding which had not identified a source. Computed tomography angiography of the abdomen and pelvis revealed a fistulous communication between the sigmoid colon and a multiloculated right lower quadrant collection (Figure). The collection encased the transplanted kidney and right iliac vasculature. Extraluminal extravasation of intra-arterial contrast was noted, concerning for either active arterial bleed or pseudoaneurysm. The patient underwent emergent exploratory laparotomy which revealed a necrotic transplant kidney densely adhered to the surrounding colon and a right external iliac artery pseudoaneurysm. Bleeding was noted from a defect in the right external iliac vein. The kidney was removed, the pseudoaneurysm was stented, and the vein defect was oversewn. Unfortunately, the patient had a complicated post operative course and died.
Discussion: In patients with evidence of small-volume rectal bleeding but a clinical picture concerning for a more significant bleed, cross-sectional imaging can be necessary to make the appropriate diagnosis. In this case, imaging identified the abscess-enteric fistula, and laparoscopy revealed that the bleeding was due to a defect in the iliac vein. Abscess-enteric fistulas are associated with post-surgical states or small localized perforations. This patient likely developed a microperforation that infected the failed transplant kidney, creating an abscess which eroded into the iliac vein. GI bleeding was only intermittent and a source was not identified on prior luminal imaging, possibly due to the small size of the fistula tract. This pathology is unfortunately not amenable to endoscopic intervention and often requires surgery.

[2692] **Figure 1.** Computed tomography angiography of the abdomen and pelvis with a multiloculated right lower quadrant collection encasing a transplanted kidney and right iliac vasculature.

S2693

Acute Gastrointestinal Bleed Unmasking Metastatic DLBCL With Concurrent Primary Stage IV Lung Adenocarcinoma

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Introduction: A massive upper GI bleed is a life threatening emergency which requires urgent intervention. Some causes of upper GI bleeding include gastric/duodenal ulcers, esophagogastric varices with or without portal hypertension, and Dieulafoy's lesions. Hematologic malignancies are very rare causes of GI bleeds and most often originate from the duodenum. We present a rare case of acute upper GIB in the setting of metastatic DLBCL leading to a diagnosis of concurrent primary lung adenocarcinoma.
Case Description/Methods: An 84 year old female with medical history of stage II SCC of the anal canal status post chemotherapy and radiation, stage II SCC of the right lower lung status post resection presented to the emergency department with several days of melena and hematochezia. Laboratory studies were significant for worsening anemia with hemoglobin of 7.4 (from 8.4). Patient underwent EGD/colonoscopy with findings of a non-bleeding gastric body ulcer on EGD and diverticulosis without bleeding on colonoscopy. Biopsy of the gastric body ulcer returned with Diffuse Large B-Cell Lymphoma. Patient was discharged home with oncology follow up. Outpatient imaging confirmed Stage IV DLBCL with diffuse lymphadenopathy and evidence of metastatic disease to the spleen and gastric body. The patient was initiated on R-CHOP with prophylactic intrathecal methotrexate. Interval PET Scan showed resolution of hypermetabolic lymph nodes, but with increased uptake of left adrenal nodule. The patient underwent IR guided biopsy of left adrenal mass which showed poorly differentiated adenocarcinoma of lung origin consistent with new primary lung cancer given no prior diagnosis of adenocarcinoma. Repeat imaging showed new liver and kidney lesions, and a decision was made to undergo surgical resection of liver lesion which confirmed moderately differentiated adenocarcinoma with neuroendocrine features consistent with metastasis from pulmonary origin. The patient was started on chemotherapy for stage IV primary lung adenocarcinoma, but passed away several months later from bacteremia.
Discussion: DLBCL can have various presentations, but symptoms of nodal involvement are the most frequent. Gastric mucosa is involved in most of the cases with extra nodal involvement, and can lead to GI bleeds. Two concurrent hematologic and solid tumor malignancies are extremely rare, but should be kept on the differential if imaging shows conflicting areas of disease stability vs. progression.

S2694

An Uncommon Cause of Upper Gastrointestinal Bleeding

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Introduction: We present a case of GI bleeding due to a direct communication between a pancreatic fistula and the splenic vein.
Case Description/Methods: A 55 year-old female with a history of endometrial cancer, superficial lower extremity thrombus, and alcohol use presented with abdominal pain and dark red blood in her stools requiring blood transfusion. She reported recent ibuprofen use. An upper endoscopy showed small esophageal varices without red wales or stigmata of recent hemorrhage. A CT demonstrated extensive subacute thrombosis of the right and left portal veins, main portal vein (PV), proximal superior mesenteric vein (SMV) and splenic vein (SV). The pancreas appeared atrophic and contained small cysts. There was small ascites. Liver biopsy demonstrated mild steatohepatitis without fibrosis. She underwent placement of a transjugular intrahepatic portosystemic shunt (TIPS) with thrombectomy from the PV, SMV, and SV and was started on anticoagulation. Due to bleeding recurrence, she underwent TIPS revision with tPA injection and additional mechanical thrombectomy. Subsequently on an ultrasound, TIPS thrombosis was again noted and during TIPS revision, a communication was noted between the pancreatic duct and splenic vein, finally identifying the likely source of bleeding. A splenic vein stent was placed.
Discussion: This case highlights an uncommon cause of upper GI bleeding and reinforces the importance of keeping a broad differential diagnosis for a patient with portal hypertension. Our patient had a complicated course with 2 TIPS revisions and esophageal varices, but the source of her bleeding was neither variceal nor mucosal. (Figure) Splenic vein thrombus can result as a complication of pancreatitis and subsequently lead to "sinestrial" (left-sided) portal hypertension and the formation of gastric varices which can also present with gastrointestinal bleed (GIB). Our patient did not have the classic finding of sinestral portal hypertension associated with SV thrombosis: gastric varices. Furthermore, during her initial TIPS placement and even her initial thrombectomy, no pancreatic fistula was observed. Although not always visualized due to the intermittent nature of bleeding, hemosuccus pancreaticus in the setting of chronic alcoholic pancreatitis most commonly involves the splenic artery (60-65%) and less commonly involves the gastroduodenal artery. Our patient's case is unusual because angiogram demonstrated direct communication between a pancreatic fistula and the splenic vein, not the splenic artery.

[2694] **Figure 1.** Large clot burden at superior mesenteric vein.

S2695

An Unusual Case of Upper GI Bleeding in the Setting of Injection Drug Use

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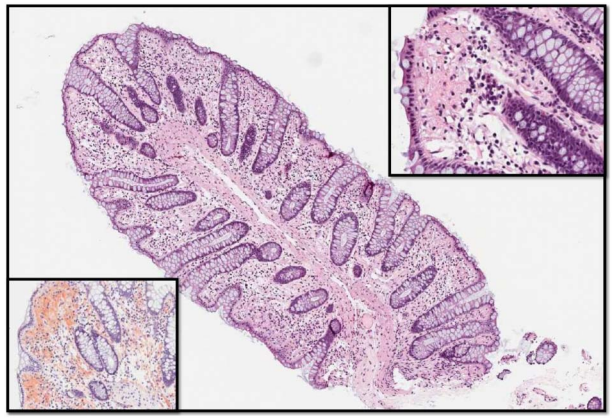
Introduction: Autoimmune and chronic inflammatory or infectious disorders increase the risk of developing systemic AA amyloidosis. Renal and cardiac involvement is most common, followed by the nervous system, soft tissues, lungs, and liver. Gastrointestinal (GI) involvement is uncommon and often asymptomatic, leading to a delayed diagnosis. Here we present a patient with history of injection drug use who presented with hemoglobin (Hgb) decline from ongoing occult GI bleed. This prompted endoscopy, leading to a diagnosis of GI amyloidosis.
Case Description/Methods: A 37-year-old woman with a longstanding history of injection drug use was admitted with sepsis secondary to infection of chronic, non-healing forearm wounds. Her hospital course was complicated by a Hgb decline to 6.1 from 9 g/dL mandating transfusion support with 6 PRBCs to maintain her Hgb $>$ 7 g/dL. She denied hematemesis, melena, or hematochezia. CT angiography indicated no obvious source of bleeding in the abdomen or pelvis. Upper GI endoscopy revealed erythematous, friable gastric mucosa, and duodenal mucosal atrophy. Colonoscopy revealed grossly normal but friable mucosa. Gastric, duodenal, and colonic biopsies showed extensive amyloid deposition in the lamina propria confirmed with Congo red stain (see Figure). Mass spectrometry was positive for amyloid A. She was discharged on Pantoprazole, and responded well.
Discussion: GI amyloidosis is defined as the presence of GI symptoms with direct biopsy verification. Its incidence is 3%. ALλ was the most amyloid type (53%) whereas AA was least common (10%). AL usually deposits in the muscularis mucosae, submucosa and muscularis propria as massive deposits causing polypoid protrusions and thickened folds while the AA deposits in the lamina propria as granular deposits leading to mucosal friability. As a result, malabsorption and fecal occult blood are common in AA amyloidosis (like in our patient), whereas AL amyloidosis presents with mechanical obstruction and chronic intestinal pseudo obstruction. Since amyloidosis has a poor prognosis, early diagnosis is crucial. Endoscopic biopsy confirms the diagnosis with duodenal specimens having the highest diagnostic yield. Endoscopy is ineffectual in the management of bleeding, hence there are currently no guidelines for endoscopic treatment. Symptomatic relief is the focus. Definitive management entails treating the underlying cause (drug rehabilitation in this case).



[2695] **Figure 1.** This low power image of a colon biopsy shows increased deposition of an amorphous pink material within the lamina propria, which can be more easily seen at higher magnification (see inset, upper right, 20x). A Congo red special stain confirms the amorphous material is comprised of amyloid protein (see inset, orange coloring, bottom left).

S2696

An Unusual Cause of GI Blood Loss

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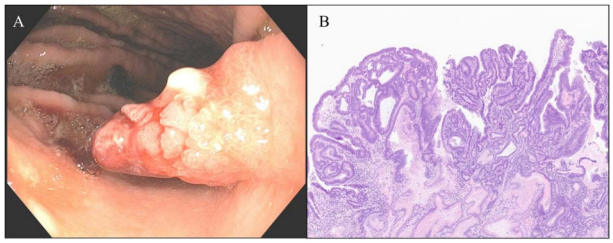
Introduction: Gastric adenomas are relatively rare, estimated to represent 10% of all gastric polyps. These typically arise in the setting of chronic mucosal inflammation and are thought to represent a premalignant phase along the inflammation-dysplasia-neoplasia sequence during which intervention can prevent or minimize progression to carcinoma. Foveolar-type adenomas, however, typically arise in areas of relatively unremarkable gastric mucosa and are generally less aggressive than other adenoma subtypes. These lesions are commonly associated with hereditary tumor syndromes such as familial adenomatous polyposis but can also occur sporadically. We present a case of newly identified iron deficiency anemia (IDA) that was found to have a gastric foveolar-type adenoma as a rare cause of GI blood loss.
Case Description/Methods: A 73-year-old male with granulomatous hepatitis and metabolic syndrome presented for evaluation of IDA. Colonoscopy was notable for one 3 mm polyp in the transverse colon. EGD revealed a 15 mm gastric polyp with a raspberry appearance in the cardia with stigmata of bleeding and a 5 mm sessile polyp with mild central depression in the gastric body. Histology revealed that the larger polyp had low-grade polypoid dysplasia consistent with a foveolar-type adenoma. The smaller polyp was found to be a well-differentiated neuroendocrine tumor. The singular colonic polyp returned as a simple tubular adenoma. A repeat EGD was performed 6 months after polypectomies with no residual lesions. It was determined that the foveolar adenoma located at the cardia was the source of IDA, while the neuroendocrine tumor was just an incidental finding. (Figure)
Discussion: While sporadic foveolar-type adenomas and GNET's in *helicobacter pylori*- uninfected stomachs are infrequently encountered in clinical practice, their incidence is continuing to rise, due to the increased use of upper endoscopy as a diagnostic tool. Although foveolar-type adenomas are usually benign, this case had low-grade dysplasia and chronic oozing blood as the main reason for iron-deficiency anemia. In addition, this patient also needed prompt evaluation regarding the management of GNET as angioinvasion and metastasis are common. Although these lesions are typically identified incidentally, it is important for the gastroenterologist to keep them in the differential for common complaints such as gastrointestinal bleeding (GIB). This case highlights the importance of early endoscopic evaluation of GIB.



[2696] **Figure 1.** A. Gastric polyp with raspberry-like appearance located in the cardia. Stigmata of recent bleeding seen. B. Histology of gastric foveolar-type adenoma showing surface papillary projections lined with foveolar-type epithelium. Surface epithelium with cytoplasmic neutral mucins.

S2697

An Unusual Case of Massive Upper Gastrointestinal Bleeding: HSV Esophagitis

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Introduction: Herpes simplex virus (HSV) esophagitis is more commonly diagnosed in immunocompromised patients and generally presents with acute onset dysphagia and odynophagia. We discuss a case of HSV esophagitis in an immunocompetent patient presenting with massive GI bleeding without dysphagia or odynophagia.
Case Description/Methods: A 64-year-old man with no past medical history presented to the emergency room with massive hematemesis. He had sudden onset vomiting and subsequently developed large volume bright red bloody emesis and melena. He denied any history of alcohol or heavy NSAID use. Labs were significant for anemia (hgb 9.5 g/dl), thrombocytopenia (plts 42k x10E3/uL), leukocytosis (WBC 41.6 x10E3/uL), elevated liver tests (AST 117 U/L and ALT 104 U/L, ALP 134 U/L, total bilirubin 4.9 mg/dl). After initial resuscitation, the patient was given pantoprazole bolus and drip and taken for EGD which showed a large amount of adherent blood clots in the middle and lower third of the esophagus without any obvious source of bleeding. The patient was transferred to the ICU due to hemodynamic instability and subsequently required 8 units pRBCs, 1U FFP and 2U plts over 48 hours. Repeat EGD the following day showed grade D esophagitis in the mid to lower third of the esophagus, as well as multiple shallow irregular ulcerations with raised margins. Biopsies showed acute esophagitis with necropurulent debris and immunostain positive for HSV. HIV returned negative. Subsequent workup ruled out portal hypertension or cirrhosis. Abnormal liver enzymes and thrombocytopenia improved over the course of his hospitalization and were attributed to E. Coli urinary tract infection with sepsis. The patient received an empiric course of acyclovir and overall improved with resolution of bleeding upon discharge. (Figure)
Discussion: There are a few reports of infectious esophagitis in immunocompetent patients that most commonly present with dysphagia and odynophagia. The diagnosis is distinct endoscopically by multiple punched-out ulcers with raised margins. Biopsies should be obtained from the margins of these ulcers and the diagnosis is then confirmed by histological examination. After treatment initiation, it is crucial to rule out any underlying immune disorder including HIV infection. Our case highlights an unusual presentation of HSV esophagitis with massive GI bleeding. Furthermore, endoscopic findings suggestive of viral esophagitis should prompt tissue acquisition to facilitate a swift diagnosis and proper management.

[2697] **Figure 1.** Shallow irregular ulcerations with raised margins noted in the upper esophagus suspicious for infectious esophagitis of herpetic origin.

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An Unusual Cause of Gastrointestinal Blood Loss Anemia: Post-Transplant Lymphoproliferative Disorder of the Small and Large Intestines

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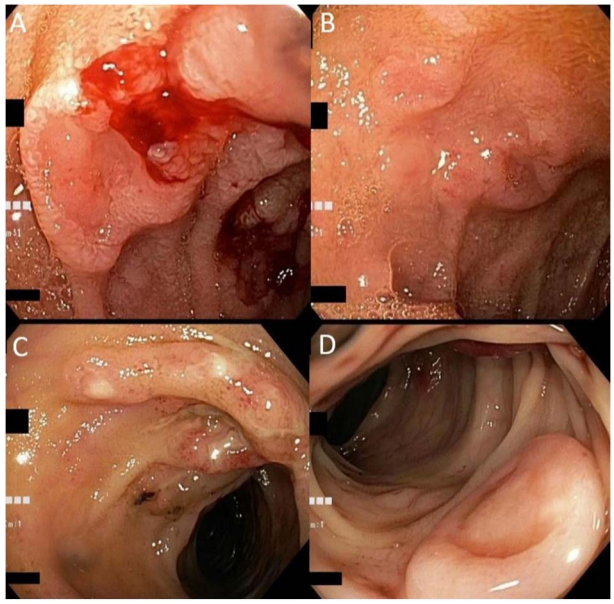
Introduction: Post-transplant lymphoproliferative disorder (PTLD) is a lymphoma that can occur in immunosuppressed patients such as those post renal transplantation. It is linked to Epstein-Barr virus (EBV) positivity. Symptoms depend on the organ system affected. The rare manifestation of PTLD in the gastrointestinal tract can lead to abdominal pain and nausea. Gastrointestinal blood loss anemia can occur as a consequence of these lesions. We report the rare case of post-transplant lymphoproliferative disorder manifesting in the gastrointestinal tract requiring endoscopic evaluation and biopsy for diagnosis.
Case Description/Methods: A 27-year-old woman with a history of focal segmental glomerulosclerosis status post-renal transplantation, sleeve gastrectomy, hypertension, and immune thrombocytopenia presented with abdominal pain, dizziness, and nausea. She denied hematochezia, melena, or vomiting. Vital signs were stable. Her physical exam was notable for diffuse abdominal tenderness. Labs were remarkable for a hemoglobin of 5.8 g/dL with a mean corpuscular volume of 89 fL. She underwent an esophagogastroduodenoscopy (EGD) which was notable for patchy abnormal vascularity, congestion, and scalloped mucosal folds in the duodenum (Figures 1a and 1b). Colonoscopy revealed patchy ulceration with heaped-up margins and congestion in the terminal ileum and entire colon (Figures 1c and 1d). Biopsies were consistent with monomorphic post-transplant lymphoproliferative disorder with EBV positivity. She was subsequently referred to oncology for further management. She was treated with the drug combination R-CHOP. Repeat EGD and colonoscopy approximately one year later were notable for resolution of the lesions, though a positron emission tomography scan demonstrated persistence of disease in other organ systems.
Discussion: Abdominal pain, nausea, or blood loss anemia in a post-solid organ or stem cell transplant recipient should raise suspicion for post-transplant lymphoproliferative disorder with gastrointestinal manifestations. A high index of suspicion is required to make the diagnosis. This case highlights the role of early endoscopic evaluation and biopsy in establishing the diagnosis. The endoscopic appearance of PTLD in the small and large intestines varies but can include areas of scalloped mucosal folds with active bleeding along with areas of abnormal vascularity and congestion.



[2698] **Figure 1.** A: second part of duodenum and B: duodenal bulb demonstrating scalloped mucosal folds. C: terminal ileum and D: descending colon with congestion and ulceration with heaped-up margins.

S2699 **ACG Case Reports Journal Award**
Presidential Poster Award

Endoscopic Management of Obstructing Pouch Twist

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Introduction: The twisted pouch is a rare complication of IPAA with few cases being reported in the literature. Most patients have been managed surgically with adhesiolysis and de-rotation with or without redo of the ileorectal anastomosis. Endoscopic management of a twisted pouch has not been previously reported and this report describes the first successful endoscopic treatment of the twisted pouch with septectomy.
Case Description/Methods: A 35-year-old female underwent 3-stage restorative proctocolectomy with IPAA for medically refractory ulcerative colitis in 2017. She presented a year later with nausea, vomiting, diarrhoea and significant weight loss. CT revealed a dilated small bowel with obstruction at the anal anastomosis. At our institution she underwent a pouchoscopy which revealed a dilated pouch lumen, a twist in the distal pouch with a nearly completely blocked pouch outlet. The twist was treated with outpatient endoscopic needle-knife septectomy with electroincision of the twisted fold, followed by the placement of two endoclip spacers. The procedure was performed with the patient under conscious sedation, observed for 30 mins and discharged afterwards. This led to immediate resolution of her symptoms. 2-week repeat pouchoscopy revealed a mild outlet stricture, requiring further endoscopic septectomy. 6-month repeat pouchoscopy showed complete resolution of the obstruction. Yearly routine pouchoscopy showed that pouch twist remained to be revolved, but a severe circumferential anastomotic stricture. The latter was treated with endoscopic circumferential stricturotomy with the needle knife. Her last follow-up was in 2021 with the pouch twist remaining resolved on pouchoscopy. (Figure)
Discussion: Pouch twist results from poor orientation of the mesentery at surgery or due to adhesions. Severe twisted pouch can lead to acute or chronic pouch obstruction. Acute pouch twist requires timely management to avoid bowel necrosis and obstipation. Twisted pouch commonly presents two to five years after surgery with pouchitis, ulceration, chronic abdominal pain, and incontinence. Diagnosis of this condition typically requires a high degree of suspicion, CT, and gastrografin enema. The patients traditionally are managed surgically with adhesiolysis and derotation and fixing the pouch with or without redo of the ileorectal anastomosis.This case report describes the successful endoscopic treatment of the twisted pouch with septectomy. We believe that endoscopic septectomy can be offered as a first-line therapy.

[2699] **Figure 1.** Left: Initial obstructed twisted pouch Right: Post-endoscopic septectomy.