

Cold Endoscopic Mucosal Resection of Polyps >10 mm



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This summary reviews Williams TJ, Mickenbecker M, Smith N, et al. Efficacy of cold piecemeal EMR of medium to large adenomas compared with sessile serrated lesions. *Gastrointest Endosc.* 2025 Jan;101(1):178-183.

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STRUCTURED ABSTRACT

Question: How does cold Endoscopic Mucosal Resection (C-EMR) of serrated polyps compare to adenomatous polyps with respect to efficacy and safety?

Design: Retrospective cohort study.

Setting: Single academic center in Australia

Patients: Patients were included if they had a flat (Paris IIa) colorectal polyp which was 10 mm or larger and resected with C-EMR technique between February 1, 2018, and June 30, 2021. Exclusion criteria included previous EMR attempts or adenocarcinoma on histology. Patients were also excluded if they had not undergone surveillance colonoscopy after EMR.

Exposure: C-EMR was performed on all polyps using a succinylated gelatin and indigo carmine injectate without epinephrine. After lifting, each lesion was resected in a piecemeal fashion. The investigators employed resections which ensured a 5- to 7-mm rim of normal tissue. As was standard at the institution, snare-tip soft coagulation of defect margins was not performed.

Outcomes: The primary outcome was polyp recurrence at first surveillance colonoscopy (SC1) which was performed at 6 months post-EMR. The secondary outcomes were adverse events, including bleeding, post-polypectomy syndrome, or perforation.

Data Analysis: Fisher's exact test was used to examine association between categorical variables and outcomes.

Funding: None.

Results: There were 242 colorectal polyps (10-50 mm in size) which were all removed by piecemeal C-EMR in 151 patients. In the sample, there were 147 sessile serrated polyps (SSPs) and 95 adenomas resected in 151 patients. The recurrence rates at the 6-month follow-up were 3.0% (1/33) for adenomas and 1.4% (1/73) for SSPs ($P = 0.5$) which were 10- to 19-mm in size. The recurrence rates for lesions ≥ 20 mm were 16.1% (10/62) for adenomas and 4.1% (3/74) for SSPs ($P = 0.02$).

COMMENTARY

Why Is This Important?

While hot snare can resect a larger amount of polyp tissue to ensure adequate resection, this method is associated with a high rate of complications such as perforation and delayed bleeding. The use of cold snare has been shown to decrease the risk of adverse events including delayed bleeding, perforation and post polypectomy syndrome.¹ Cold snare technique is the preferred technique for resecting most

polyps. The USMSTF guidelines recommend cold snare resection for polyps < 10 mm in size.² Cold snare technique should also be strongly considered for serrated and adenomatous polyps 11-19 mm size and potentially considered for polyps 20 mm or larger. Thus, data examining efficacy and safety of cold snare can help endoscopists choose the best resection methods for polyps in their patients.

Key Study Findings

The investigators observed a low rate of recurrence for adenomatous and serrated polyps 11-19 mm as well as SSP's 20 mm or larger.³ There was a high rate of recurrence for adenomatous lesions 20 mm or larger. In addition, there were no adverse events including intra-procedural bleeding. This is an interesting observation considering that the authors did not use epinephrine.

Caution

The authors and the accompanying editorial correctly point out the potential bias introduced by several factors including the retrospective design and the percentage of patients lost to follow up or whose polyp scar could not be located.³ In addition, all of the polyps were resected with EMR which involves injection of a solution into the submucosa. While the low rates of recurrence and adverse events in this study support the use of C-EMR for polyps 11-19 mm, the study does not address whether submucosal injection is necessary to achieve adequate resection.

My Practice

My preference is to use cold snare for all lesions smaller than 20 mm. While, I always attempt en bloc resection for lesions < 10 mm with virtually universal success, I often choose a piecemeal approach for larger lesions, in part to avoid “snare stall” when snaring too much submucosa.^{1, 4, 5} When employing the piecemeal method, it is important

for the endoscopist to include, on the initial resection attempt, a wide margin of normal tissue of 5 mm or larger. For the additional resections, the endoscopist should snare a similar margin of the exposed submucosa in the developing mucosal defect. The use of the water jet, to elevate the residual polyp, can help the tissue “pop up” through the snare ensuring that the snare is cutting in the submucosal plane. When finished, it is important to inspect the resection rim to ensure that the remaining tissue is normal or has a Kudo Type I pit pattern. In addition, endoscopists should make sure that the remaining submucosal defect has no polyp residual. Any residual polyp can be removed with cold snare or cold avulsion. With respect to submucosal injection, my preference is to not use it for lesions 11-19 mm unless I have difficulty with visualization of the margins. For larger lesions, especially serrated polyps, C-EMR can be useful for delineating the margins. Again, piecemeal approach, as highlighted above, should be used when resecting these larger lesions. Finally, it should be noted that some polyps 11-19 mm require hot snare resection including those that are pedunculated, bulky, or have a morphology or Kudo Type V pit pattern which is predictive of cancer. In addition, since cold snare has the highest recurrence rates, I might choose that method versus hot snare in patients who are more likely to be compliant with follow colonoscopies.

For Future Research

A major issue that needs to be addressed is

the utility of submucosal injection for polyps 10 mm or larger. Published data have demonstrated that submucosal injection is not necessary for lesions < 10 mm in order to achieve adequate resection.⁶ I participated in a trial comparing resection of 6-15 mm polyps with hot and cold snare and H- and C-EMR. We observed that cold snare had no incomplete resections, required less procedural time than the other methods, and was not associated with any serious adverse events.⁷ However, for many larger lesions, especially those 20 mm or larger, the utility of submucosal injection is unclear. Furthermore the efficacy of cold snare for polyps 20 mm or larger requires further investigation. In this study the rate for recurrence of adenomas $\geq$ 20 mm was 16.1% which is similar to findings from the recently published CHRONICLE trial.⁸ It might be that employing a method using a wide resection would provide the best rates of resection.

Conflict of Interest

The authors have no reported conflicts of interest.

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