

Tiny Polyps—It's OK to Remove Polyps ≤ 3 mm with Large or Jumbo Biopsy Forceps!



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This summary reviews: Wei MT, Louie CY, Chen Y, et al. Randomized Controlled Trial Investigating Cold Snare and Forceps Polypectomy Among Small POLYPS in Rates of Complete Resection: The TINYPOLYP Trial. *Am J Gastroenterol* 2022;117(8):1305-10. <http://www.doi.org/10.14309/ajg.0000000000001799>.

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STRUCTURED ABSTRACT

Question: Is cold forcep polypectomy (CFP) non-inferior to cold snare polypectomy (CSP) for complete resection of polyps ≤ 3 mm?

Design: Single-center, prospective randomized non-inferiority clinical trial.

Setting: Palo Alto Veterans Affairs Health Care System (VACHS), California, US.

Patients: Adults (age 18-80) who presented for outpatient screening, surveillance, or diagnostic colonoscopy from October 15, 2020 through October 19, 2021 were invited to participate. Patients were included if they had 1+ polyps ≤ 3 mm removed. Lastly, only neoplastic polyps (as confirmed by histopathology), such as adenomas, serrated adenomas, and cancers were included in the analysis.

Interventions: Upon encountering a polyp ≤ 3 mm (estimated by the endoscopist using open jaws of biopsy forceps or snare), the research

coordinator opened an envelope revealing whether the polypectomy would be performed via CSP (Exacto Cold Snare, Steris, US Endoscopy) or CFP with 2.4 mm diameter large forceps (Radial Jaw 4 Large Capacity with Needle, Boston Scientific). After the endoscopist completed the polypectomy and placed the polyp in an individual jar, 2 biopsies were then taken from the polypectomy margin and placed in a separate jar. (Figure 1). Each colonoscopy was video recorded, and the study team reviewed each colonoscopy video and measured the time of CSP or CFP, as well number of passes until completion of polypectomy.

Outcomes: Primary outcome was complete resection defined as absence of polyp tissue in both polypectomy site margin biopsies. Secondary outcomes included time required for polypectomy, number of cold forceps or snare attempts to remove polyp completely, use of hemostatic clips, and complications (such as perforation, bleeding, and post-polypectomy syndrome).

Data Analysis: The primary outcome, complete resection, was evaluated for non-inferiority. That is, to see if CFP is not significantly worse than CSP in achieving complete resection. (This is opposed to a superiority trial, where the authors would test if CFP is significantly better than CSP. The reason to do non-inferiority here is that CSP is considered a standard for polypectomy, so CFP will likely not be better, but before we recommend it, we should ensure it is not significantly worse).

Results: Overall, 179 patients were enrolled with 279 polypectomies performed (141 by CFP and 138 by CSP), although approximately 14% of specimens had normal colonic mucosa. There were no significant demographic or procedural (e.g., indication of procedure, sedation, bowel prep, or withdrawal time) differences between the CFP and CSP groups. There were no 30-day complications experienced in patients in either group.

Incomplete resection, defined as positive margin biopsies for polyp tissue, occurred in 1.7% (2/117 tubular adenomas, sessile serrated lesions or hyperplastic polyps) in both the CFP and CSP groups. CSP groups require a significantly longer time to perform compared to CFP: 42.3 vs 23.2 seconds, $P < 0.001$. CFP was more likely to required piecemeal resection: 15.6 vs 3.6%, $P < 0.001$. In a logistic regression adjusted for confounders, none of the factors (CFP or CSP, polyp size, polyp location,

time of polypectomy, piecemeal resection, polyp pathology, fellow involvement in polyp resection) were found to be statistically significant for predicting complete resection.

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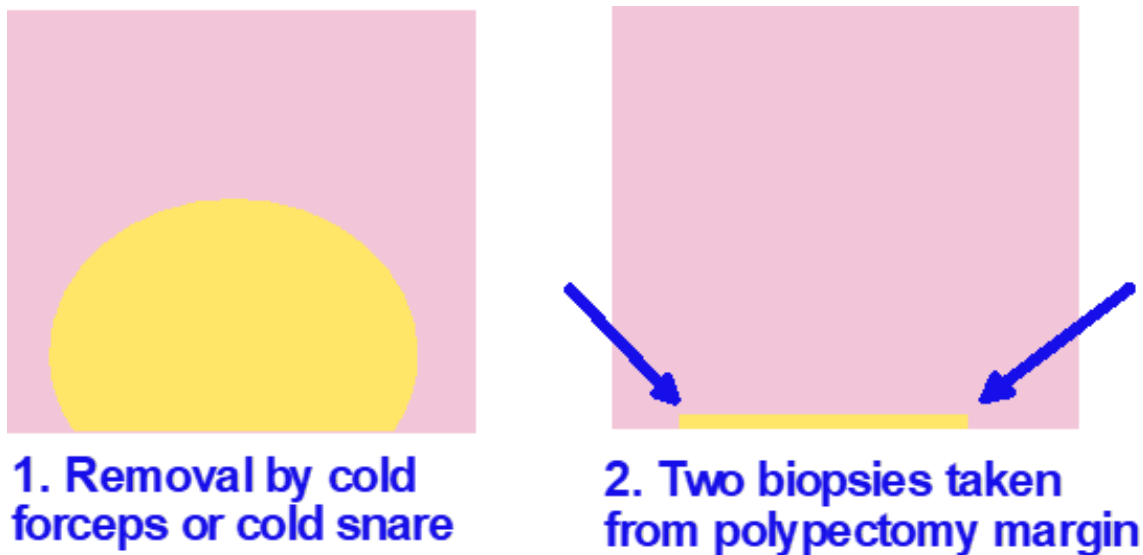


Figure 1: Study procedures

COMMENTARY

Why Is This Important?

Up to 1 in 5 interval cancers can be attributed to incomplete resection of polyps^{1,2}, so complete resection is of the utmost importance. Therefore, the US Multi-Society Task Force on CRC and multiple other professional societies^{3,4} recommend CSP over CFP, especially since CSP facilitates resection of a 2 mm rim of normal mucosa around the polypectomy site and is considered optimal polypectomy technique.

However, sometimes it's technically quite difficult to rotate the scope and place a tiny polyp in the 5 o'clock or 6 o'clock position for CSP. It's simply

faster and easier to do CFP, and CFP ensures that the tissue specimen is retrieved, too. Note that the current US Multi-Society Task Force recommendations do permit CFP for tiny polyps when CSP is technically difficult. Furthermore, multiple non-US studies of "tiny" polyps ≤ 3 mm demonstrate complete resection rate in $>90\%$ with both CFP and CSP.⁵⁻⁸ Unfortunately, these studies assessed very small numbers of tiny polyps, so the performance of this large RCT by the Stanford University/Palo Alto VAHCS group is commendable and helps resolve the potential discrepancy between guideline recommendations and scientific findings for polyps ≤ 3 mm.

Key Study Findings

This well-designed RCT is the largest trial to compare incomplete resection rates for CFP vs CSP in “tiny” polyps ≤ 3 mm.

Incomplete resection, defined as positive margin biopsies for polyp tissue, was rare and occurred in only 1.7% of polypectomies in both groups.

Caution

This is a single center study where 4 experienced endoscopists were aware they were participating in a clinical trial. Regardless, the investigators ensured blinding whenever possible in the study and attempted to objectively measure polyp diameter with snare tip or open biopsy forceps. The non-inferiority design of the study also bears mention. Non-inferiority trials are increasingly common, to demonstrate that a new modality has approximately the same efficacy (“it is not significantly worse”) than an established modality. In general, a smaller sample size is often needed, making these trials more feasible. Given what we know about CSP, it is unlikely that CFP would show superiority when it comes to resection rates. Practically, we just need to know that it achieves complete resection at about the same rate as CSP, making a non-inferiority trial a reasonable study design here. Finally, and most importantly, large-capacity forceps (2.4 mm in diameter) were used, and these results should not be extrapolated to polypectomy per-

formed with standard-size forceps. In fact, there is evidence that standard forceps size (2.2 mm) are inadequate for polypectomy.⁹

My Practice

This study supports my own practice. I rely on CSP for polyps > 3 mm. However, for sessile polyps ≤ 3 mm, I often use jumbo-capacity CFP, taking care to ensure I remove all polypoid tissue, ideally *en bloc* or within one piece. The positioning, retrieval, and actual polypectomy for CFP is often more favorable than CSP. To measure size, I use the forceps jaw. The jumbo-sized forceps we use have a 2.8 mm jaw diameter, ensuring I can appropriately estimate the polyp size and switch to CSP if the polyp is larger than I had initially estimated (sizes may vary by company and product).

For Future Research

As the authors note, while this is the largest trial to date, it is still a single center study performed by 4 experienced endoscopists. Future US based studies should undertake to confirm the findings. Diminutive polyps are not strong risk factors for incomplete resection leading to future malignancy.¹⁰ Accordingly, an emphasis on CSP (with its greater time and technical burdens) may not strongly mitigate future CRC, and could also be explored in future US-based studies. Conversely, it’s also important to educate and incentivize endoscopists to

avoid forceps polypectomy considering that recent retrospective studies show that up to 24% of polyps 5-9 mm in diameter were still being removed with CFP.¹¹

Conflict of Interest

Dr. Shria Kumar reports no conflicts of interest.

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