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Big Issues on Small Polyps: An Ideal Device, But Is It for an Ideal Indication?

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See “Dedicated Cold Snare vs. Traditional Snare for Polypectomy of Diminutive and Small Lesions in a Porcine Model: A Research Group for Endoscopic Instruments and Stents (REIS) Study” by Han Hee Lee, Bo-In Lee, Jung-Wook Kim et al., on page 390-396.

Colorectal cancer (CRC) is the third most common cancer in men and the second most common cancer in women worldwide.¹ Colonoscopy plays an essential role in the prevention of the development of CRC and death.² Most polyps identified at colonoscopy do not cause harm to patients. In most cases, the adenoma-carcinoma sequence progresses slowly. However, the malignant potential of individual polyps is unknown, and even small/diminutive polyps can occasionally harbor cancer. Therefore, all polyps (even diminutive rectal polyps) should be removed. Although colorectal polypectomy has few adverse events, post-polypectomy bleeding and perforation pose a serious risk to the patient. Owing to the prophylactic nature of most polypectomies, the risk-benefit ratio is not well balanced should an adverse event occur after the procedure. Cold snare polypectomy (CSP), a polypectomy method that does not use electrocautery, has rapidly gained popularity in recent years because of its safety.³

Since CSP does not involve electrocautery, the risk of residual polyps has been a concern—that it would increase residual polyps compared to conventional resection methods. Matsuu-
ra et al. reported that additional endoscopic mucosal resection

(EMR) of the mucosal defect after CSP did not show many residual polyps even when polyp involvement was inconclusive for the evaluation of the specimen.⁴ Kawamura et al. reported the non-inferiority of CSP to the conventional methods regarding residual polyps in a multicenter randomized controlled trial.⁵ Horiuchi et al. reported that dedicated snares for CSP performed better than the traditional snares and concluded that dedicated snares should be used for CSP.⁶

In this issue of *Clinical Endoscopy*, Lee et al.⁷ conducted experiments on a living mini-pig under the best possible conditions. They reported that a dedicated snare performed better than a conventional snare in terms of technical success (complete amputation of the trapped tissue by CSP) and complete resection (complete removal of a pseudo-lesion including demarcations). In addition, the dedicated snare showed a shorter procedure time, fewer snare stalls, more irregular uneven resection margins at the polypectomy site, and fewer adverse events, including immediate bleeding, perforation, and retrieval failure than the conventional snare. Horiuchi et al. reported the superiority of a dedicated snare in a randomized controlled trial in humans, and it might be reasonable to compare the two snares under better and fairer conditions, such as an animal study. A dedicated snare for CSP showed better performance, and they concluded that the use of a dedicated snare is recommended with priority for CSP of lesions larger than 5 mm.

In this *in vivo* animal experiment with pseudo-polyps, polypectomy with a dedicated snare proved to be better than polypectomy with a conventional snare regarding removability for the lateral margin, but the removability for the vertical margin was not investigated. As CSP uses physical pressure to

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cut tissue, the polyp is removed in the layer of least resistance in the entrapped tissue. Shichijo et al. reported that cold snare defect protrusion (CSDP), which was present in 36% of the cases, was a good indicator of incomplete mucosal resection; 57% of the muscularis mucosa, even in non-CSDP polypectomies, was not removed completely.⁸ Therefore, we can say that the cutting plane of the CSP is superficial, and CSP may not remove all of the mucosal layers, while conventional EMR can remove the deep submucosal layer. An adenoma is a lesion that remains in the epithelium, and it is not a problem to leave the muscularis mucosa behind. However, high-grade dysplasia (HGD) or intramucosal cancer sometimes invades the muscularis mucosa, and occasionally, even small polyps. CSP can result in the incomplete removal of such lesions, and CSP can carry residual dysplastic tissue in the wound. Therefore, CSP should be used for intra-epithelial low-grade adenoma with careful pretreatment evaluation. It is generally known that the frequency of HGD or cancer increases as the polyp size increases, and Sakamoto et al. reported that when the lesion is larger than 10 mm, the incidence of HGD is significantly high.⁹ It is generally accepted that the current indication for CSP is an endoscopically predicted LGD of < 10 mm.

In Lee's study⁷ perforation was found in two lesions, which may be noteworthy. Of course, this study was conducted on a living pig, not a human, and this fact cannot be ignored. However, considering that there was no perforation with the conventional snare, a dedicated snare could remove a deep layer of the colonic wall. If CSP using this dedicated snare can resect deeper layers than CSP using conventional snares, it may exceed the limitations of conventional CSP and expand the indications for conventional lesions. There have been several reports on CSP for lesions larger than 10 mm in recent years, but these studies do not adequately consider histological factors such as HGD and cancer.¹⁰ Therefore, this dedicated snare may be the key to opening the door to a new world that supports these next CSP possibilities. Let us examine what happens in the future.

Conflicts of Interest

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