

Combination of endoscopic submucosal dissection techniques, a practical solution for difficult cases

Dong-Hoon Yang

Department of Gastroenterology, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea

See “Efficacy of the pocket-creation method with a traction device in endoscopic submucosal dissection for residual or recurrent colorectal lesions” by Daisuke Ide, Tomohiko Richard Ohya, and Mitsuaki Ishioka, et al., on page 655–664.

Endoscopic submucosal dissection (ESD) is an effective procedure for treating large superficial colorectal neoplasia because it provides higher *en bloc* and complete resection rates than conventional endoscopic mucosal resection. However, colorectal ESD is technically challenging and the presence of submucosal fibrosis makes it more difficult. Because locally recurrent or residual colorectal lesions after incomplete endoscopic resection contain submucosal fibrosis in most cases, it is difficult even for experienced endoscopists to perform ESD in such cases. In order to facilitate colorectal ESD or to overcome difficult ESD cases, various modifications of the conventional ESD method have been introduced. The pocket-creation method (PCM) is one such method,¹ which was compared PCM with conventional ESD for colorectal lesions with severe fibrosis in a retrospective study.² In this study, PCM showed a higher *en bloc* resection rate than conventional ESD (95.2% vs. 74.7%, $p < 0.03$). The histological complete resection rate was also higher in the PCM group than in the conventional ESD group (85.7% vs. 54.5%, $p < 0.04$). Nonetheless, the mean procedure time was

shorter in the PCM group than in the conventional ESD group (79.6±26.5 min vs. 118.8±71 min, $p = 0.001$). ESD using traction devices (TDs) provide enhanced exposure of submucosal layers, even in lesions with submucosal fibrosis, and thus can facilitate safe and effective submucosal dissection.^{3,4} According to a study on traction-assisted ESD using double clips and a rubber band, traction-assisted ESD seemed to be a safe and effective treatment for residual or locally recurrent colonic lesions.⁵

Although both PCM and traction-assisted ESD seem to be useful technical variations of conventional ESD, the outcomes of their combination have not yet been well investigated. Interestingly, a recent case report suggested that the combination of PCM and traction-assisted ESD would be useful to remove a recurrent colorectal lesion with severe submucosal fibrosis.⁶ If so, can the combination of these two methods make the difficult ESD cases easier? Ide et al.⁷ answered this question in their study. According to their retrospective data, either PCM with TD or conventional ESD method was applied for the locally recurrent or residual colorectal lesions and more than 60% of the lesions contained severe submucosal fibrosis (65% in PCM with TD group and 63% in the conventional ESD group). Using the PCM with TD method, *en bloc* resection was achieved in all cases; however, the *en bloc* resection rate using the conventional ESD method was 78%. In addition, the histological complete resection rate was higher in the PCM with TD group than in the conventional ESD group (97% vs. 66%, $p < 0.001$). As the submucosal layer was effectively exposed, the dissection speed could be accelerated in the PCM with TD group compared to

Received: June 4, 2022 Revised: August 14, 2022

Accepted: August 19, 2022

Correspondence: Dong-Hoon Yang

Department of Gastroenterology, Asan Medical Center, University of Ulsan College of Medicine, 88 Olympic-ro 43-gil, Songpa-gu, Seoul 05505, Korea

E-mail: dhyang@amc.seoul.kr

© This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0/>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

the conventional ESD (median 13.0 mm²/min vs. 7.9 mm²/min). Moreover, despite improved procedural parameters regarding therapeutic effectiveness, procedure-related complications, such as perforation and bleeding, were not different between the two groups.

Both the PCM and traction methods are relatively easy to apply during ESD and are also known to be useful to less experienced therapeutic endoscopists.^{8,9} Therefore, the combination of these methods may be more useful for non-experts and in more difficult cases. From a practical viewpoint, if any modification of conventional ESD can improve procedure-related outcomes and reduce procedural difficulty, such procedures can be combined in real-world procedures. In addition to PCM and traction-assisted ESD, underwater ESD appears to be a safe and effective modification of conventional ESD.¹⁰ Because PCM, traction-assisted ESD, and underwater ESD are not mutually exclusive procedures, the combination of these three methods may be applied to overcome difficulties in colorectal ESD. Future studies should investigate how to optimize the combination of procedural techniques, to maximize the efficiency and safety of colorectal ESD.

Conflicts of Interest

The author is currently serving as a section editor of *Clinical Endoscopy*; however, he had not involved in the peer reviewer selection, evaluation, or decision process of this article. The author has no potential conflicts of interest.

ORCID

Dong-Hoon Yang <https://orcid.org/0000-0001-7756-2704>

REFERENCES

1. Yamamoto H, Shinozaki S, Hayashi Y, et al. Advanced treatment and imaging in colonoscopy: the pocket-creation method for complete resection and linked color imaging for better detection of early neoplastic lesions by colonoscopy. *Clin Endosc* 2019;52:107–113.
2. Yoshida N, Naito Y, Yasuda R, et al. The efficacy of the pocket-creation method for cases with severe fibrosis in colorectal endoscopic submucosal dissection. *Endosc Int Open* 2018;6:E975–E983.
3. Abe S, Wu SYS, Ego M, et al. Efficacy of current traction techniques for endoscopic submucosal dissection. *Gut Liver* 2020;14:673–684.
4. Tziatzios G, Ebigbo A, Gölder SK, et al. Methods that assist traction during endoscopic submucosal dissection of superficial gastrointestinal cancers: a systematic literature review. *Clin Endosc* 2020;53:286–301.
5. Faller J, Jacques J, Oung B, et al. Endoscopic submucosal dissection with double clip and rubber band traction for residual or locally recurrent colonic lesions after previous endoscopic mucosal resection. *Endoscopy* 2020;52:383–388.
6. Ishida T, Yoshida N, Inoue K, et al. A recurrent lesion with severe fibrosis of colorectal endoscopic submucosal dissection using the combination of pocket-creation method and traction device. *Video-GIE* 2020;5:686–687.
7. Ide D, Ohya TR, Ishioka M, et al. Efficacy of the pocket-creation method with a traction device in endoscopic submucosal dissection for residual or recurrent colorectal lesions. *Clin Endosc* 2022;55:655–664.
8. Takezawa T, Hayashi Y, Shinozaki S, et al. The pocket-creation method facilitates colonic endoscopic submucosal dissection (with video). *Gastrointest Endosc* 2019;89:1045–1053.
9. Bordillon P, Pioche M, Wallenhorst T, et al. Double-clip traction for colonic endoscopic submucosal dissection: a multicenter study of 599 consecutive cases (with video). *Gastrointest Endosc* 2021;94:333–343.
10. Yoshii S, Akasaka T, Hayashi Y, et al. "Underwater" endoscopic submucosal dissection: a novel method for resection in saline with a bipolar needle knife for colorectal epithelial neoplasia. *Surg Endosc* 2018;32:5031–5036.