

## Use of a traction device facilitates opening of the pocket during the pocket-creation method of gastric endoscopic submucosal dissection

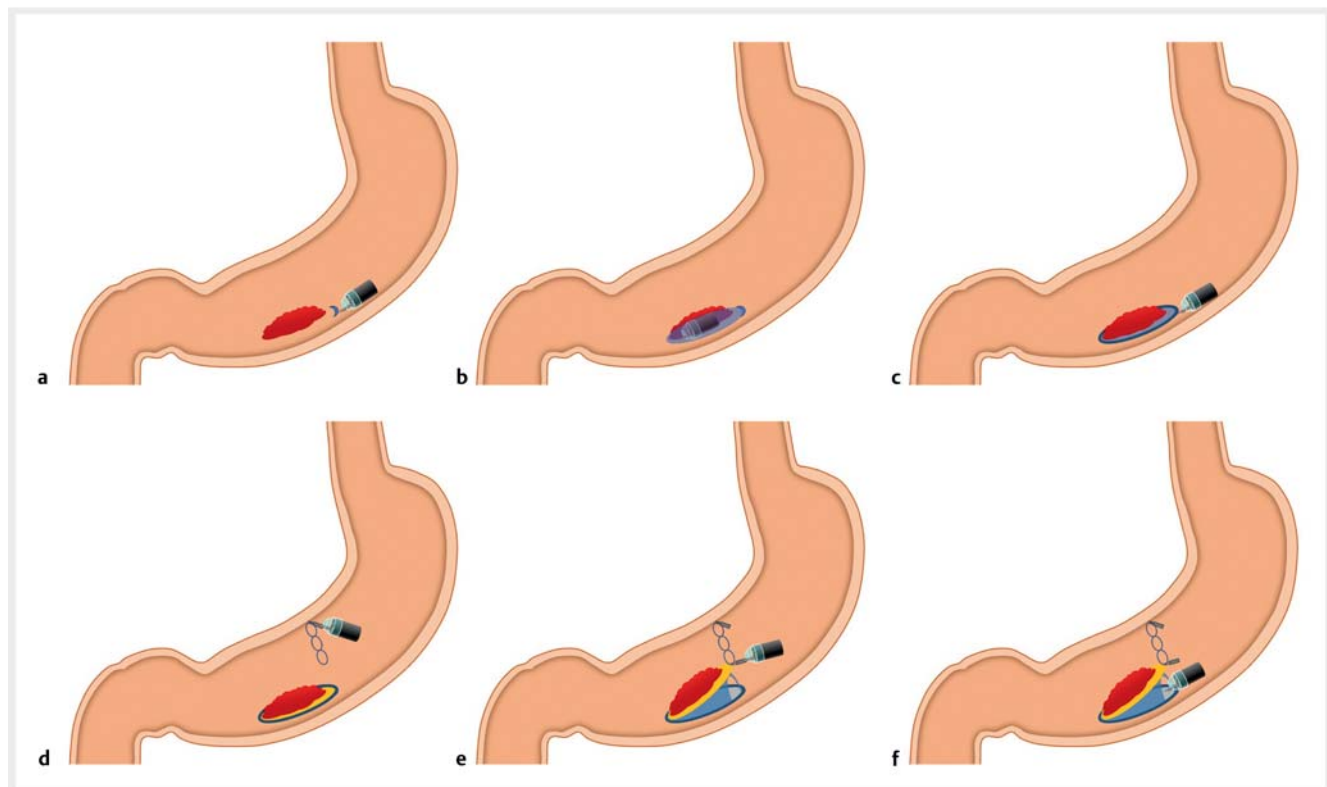


The pocket-creation method (PCM) is a strategy to achieve safe and high quality endoscopic submucosal dissection (ESD) throughout the alimentary tract [1–4]. While the pocket is being created, the PCM enables endoscopists to effectively apply traction and countertraction using the tip of the hood alone. In this phase, the PCM can be considered a traction method; however, because stabilization of the endoscope tip and traction force gradually reduces while the pocket is being opened, it may become difficult and time-consuming. Particularly during gastric ESD, it is difficult to change the patient's position and, as a result, it may

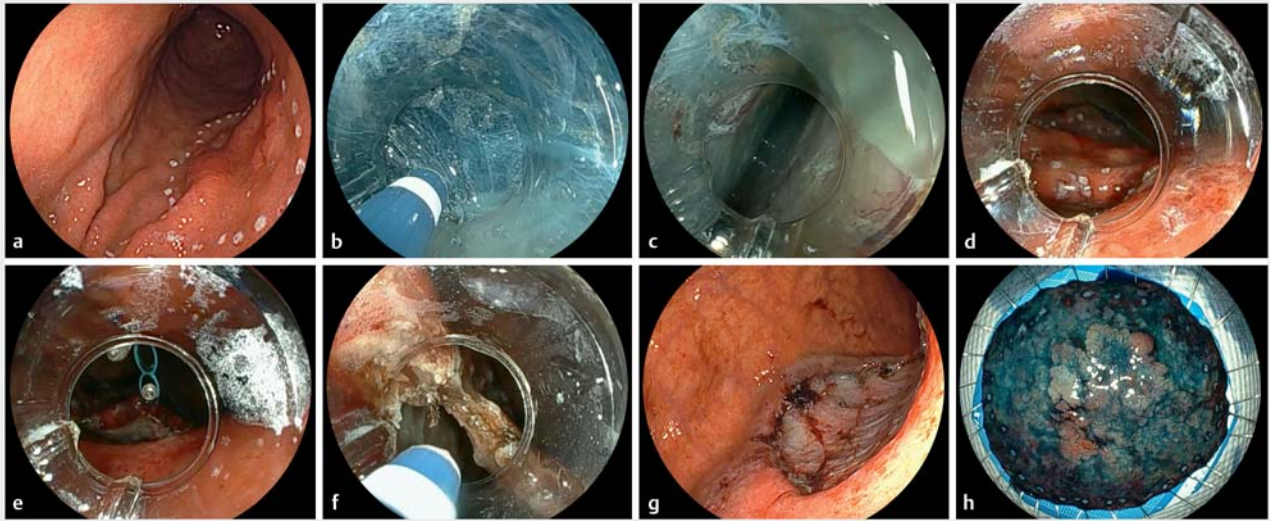
not be possible to use gravity effectively, depending on the location of the lesion. We devised a new strategy for the PCM using traction devices when opening the pocket during gastric ESD (► **Fig. 1**), as we have reported in the past for colorectal ESD [5].

A 52-mm elevated lesion on the greater curvature of the middle gastric body was resected using the PCM with traction devices (► **Fig. 2**; ► **Video 1**). After submucosal dissection under the tumor had been completed, as in the standard method of PCM, a complete circumferential mucosal incision was performed. A multi-loop traction device (Boston Scientific,

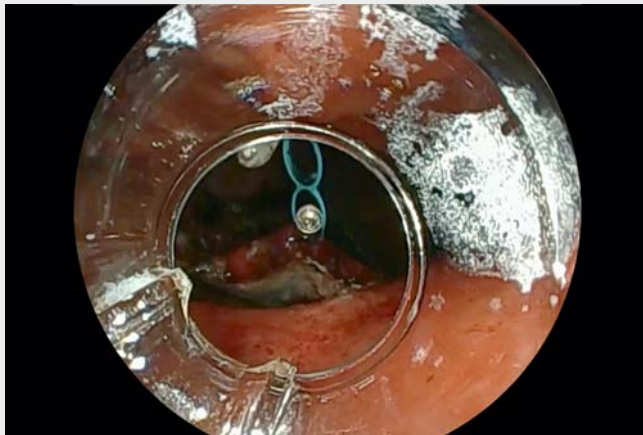
Marlborough, Massachusetts, USA) was used to pull the flap on the proximal edge of the partially resected lesion toward the opposite gastric wall. Although, depending on the location, the thread-traction method may also be useful to apply traction while opening the pocket, this device allows the direction of traction to be changed freely and is considered beneficial, especially in the stomach, with its large lumen. The remaining submucosal layer on both sides of the pocket was stretched, and the complete resection was performed easily and safely. In conclusion, the use of traction devices during the opening phase of the PCM



► **Fig. 1** Schematic of the stages in the pocket-creation method (PCM) with a traction device in gastric endoscopic submucosal dissection: **a, b** a submucosal pocket is created under the tumor as in the standard PCM; **c** a complete circumferential mucosal incision is performed around the lesion; **d** a multi-loop traction device is attached to the gastric wall contralateral to the lesion; **e** the other end of the multi-loop traction device is attached to the flap on the proximal edge of the lesion; **f** the remaining submucosal layer on both sides of the pocket is stretched, and the complete resection can be performed easily and safely.



► **Fig. 2** Images of the pocket-creation method with a traction device being used for an early gastric cancer showing: **a** a 52-mm elevated lesion on the greater curvature of the middle gastric body; **b** stabilization of the tip of the endoscope and clear visualization of the submucosal layer in the pocket, which enables the dissection level to be selected by facilitating the recognition of blood vessels and the muscularis; **c** completion of submucosal dissection under the tumor; **d** a complete circumferential mucosal incision around the lesion; **e** a multi-loop traction device being used to pull the flap on the proximal edge of the partially resected lesion toward the opposite gastric wall; **f** the remaining submucosal layer on both sides of the pocket being stretched, so that complete resection can be performed easily and safely; **g** the mucosal defect observed from above; **h** the macroscopic appearance of the resected specimen, which was 75 × 67 mm in size and subsequently found to be a well-differentiated submucosal invasive cancer, with negative margins.



► **Video 1** Procedure for the pocket-creation method with a traction device for early gastric cancer. Source for microscopic image of the pathological specimen: Mio Sakaguchi.

## Competing interests

H. Yamamoto has provided consultancy to and received honoraria, grants, and royalties from Fujifilm Corporation. Y. Miura has received honoraria from Fujifilm Corporation. M. Kitamura, H. Fukada, H. Takahashi, Y. Ino, and A. K. Lefor declare that they have no conflict of interest.

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facilitates complete resection while maintaining the advantages of the PCM in gastric ESD.

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## References

- [1] Hayashi Y, Sunada K, Takahashi H et al. Pocket-creation method of endoscopic submucosal dissection to achieve en bloc resection of giant colorectal subpedunculated neoplastic lesions. *Endoscopy* 2014; 46: E421–E422
- [2] 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
- [3] Miura Y, Shinozaki S, Hayashi Y et al. Duodenal endoscopic submucosal dissection is feasible using the pocket-creation method. *Endoscopy* 2017; 49: 8–14
- [4] Kitamura M, Miura Y, Shinozaki S et al. The pocket-creation method facilitates endoscopic submucosal dissection of gastric neoplasms involving the pyloric ring. *Endosc Int Open* 2021; 9: E1062–E1069
- [5] Nomura T, Hayashi Y, Morikawa T et al. Colorectal endoscopic submucosal dissection using the pocket-creation method with single clip traction: a feasibility study. *Endosc Int Open* 2021; 9: E653–E658

## Bibliography

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