

A novel endoscopic technique for closure of a large esophageal perforation using the clip-and-snare method with the prelooping technique

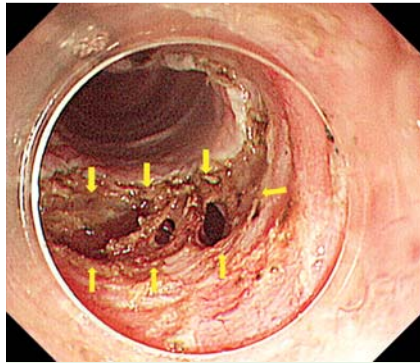


Fig. 1 Endoscopic view showing a large perforation (yellow arrowheads) in the cervical esophagus during endoscopic submucosal dissection.

It is sometimes difficult to close a large perforation using endoclips and over-the-scope clips, and surgery may be required [1]. We report a novel endoscopic technique for closure of a large perforation using the clip-and-snare method with the prelooping technique.

A 76-year-old man with a metachronous esophageal cancer, which developed at a scar in the cervical esophagus that resulted from a previous endoscopic submucosal dissection (ESD), underwent a second ESD. A large perforation occurred during submucosal dissection because of severe fibrosis associated with the previous ESD (Fig. 1). Closure of the perforation could not be achieved by endoscopic clip placement because of its large size. Therefore, we endoscopically closed the perforation using an endoclip with the clip-and-snare method and prelooping technique, as has been applied in the traction method for ESD [2,3].

First, a snare (SD-210L-15; Olympus, Tokyo, Japan) was prelooped around the transparent hood (D-201-11804; Olympus) attached to a single-channel upper gastrointestinal endoscope (GIF-Q260J; Olympus) (Fig. 2a), which was then advanced towards the mucosal defect. The anal side of the mucosal perforation was grasped using an endoclip (HX-610-090; Olympus) passed through the scope channel and was not released. Subsequently, the prelooped snare was loosened from the transparent hood (Fig. 2b), and the

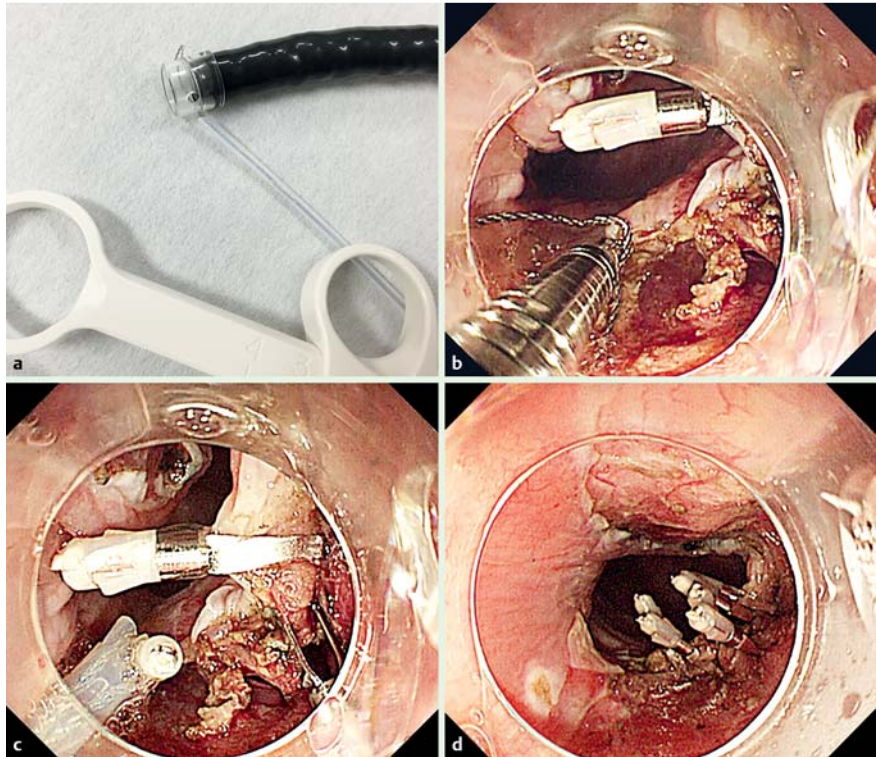
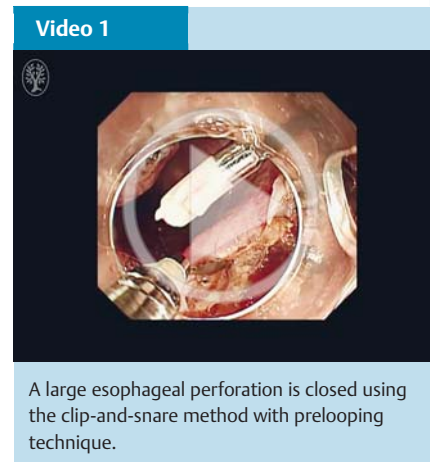


Fig. 2 The clip-and-snare method with prelooping technique. **a** A snare was prelooped around the transparent hood attached to a single-channel upper gastrointestinal endoscope. **b** The prelooped snare was loosened from the transparent hood. **c** The endoclip that had previously been used to grasp the anal side of the mucosal perforation was grasped with the snare. **d** Endoscopic view showing successful closure of the perforation.



Fig. 3 Endoscopic view 2 months later showing an ulcer scar.

endoclip was grasped with the snare and released from the forceps (Fig. 2c). The snare was pulled from the mouth, resulting in narrowing of the perforation, which could then be closed using endoclips (Fig. 2d; Video 1).



A large esophageal perforation is closed using the clip-and-snare method with prelooping technique.

Following this procedure, the patient developed no symptoms, except for a slight fever and elevation of the C-reactive protein (CRP) level. An ulcer scar was observed 2 months post-ESD (Fig. 3).

This novel technique involving a device that is routinely used for endoscopic therapy may be a helpful and easy procedure for closure of a large perforation in the digestive tract.

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References

- 1 Verlaan T, Voermans RP, van Berge Henegouwen MI et al. Endoscopic closure of acute perforations of the GI tract: a systematic review of the literature. *Gastrointest Endosc* 2015; 82: 618–628 e615
- 2 Yamada S, Doyama H, Ota R et al. Impact of the clip and snare method using the pre-looping technique for colorectal endoscopic submucosal dissection. *Endoscopy* 2016; 48: 281–285
- 3 Yoshida N, Doyama H, Ota R et al. The clip-and-snare method with a pre-looping technique during gastric endoscopic submucosal dissection. *Endoscopy* 2014; 46 (Suppl. 01): E611–E612

Bibliography

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