

An effective technique for delivery of polyglycolic acid sheet after endoscopic submucosal dissection of the esophagus: the clip and pull method

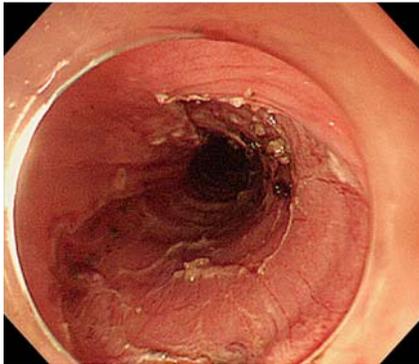


Fig. 1 After en bloc endoscopic submucosal dissection of two lesions that were more than 3 cm in diameter, an artificial ulcer extended more than three-quarters of the circumference and was 8 cm in longitudinal length.

Endoscopic submucosal dissection (ESD) is currently accepted as an established method of treatment for esophageal superficial neoplasms, although it is associated with some complications [1]. Polyglycolic acid (PGA) sheet (Neoveil; Gunze Co., Kyoto, Japan) is an absorbable reinforcement material that has been used for reinforcing the surgical suture to prevent leakage [2]. It has also been reported to be effective in shielding the artificial ulcer after ESD thus preventing perforation or bleeding [3,4]. However, shielding artificial ulcers is technically difficult especially in the esophagus due to its narrowness. This report describes a novel technique that enables rapid and easy shielding of the esophageal artificial ulcer. A 69-year-old man underwent ESD for two large neighboring lesions in the middle part of the esophagus. Because the post-ESD artificial ulcer extended to over three-quarters of the circumference and was over 8 cm in longitudinal length (● Fig. 1), we decided to shield it with a large PGA sheet using a novel delivery and deployment technique – the “clip and pull method” (● Fig. 2 and ● Fig. 3). After successful deployment of the PGA sheet over the artificial ulcer, the procedure was completed by spraying the area with fibrin glue (Beriplast P combi-set; CSL Behring Pharma, Tokyo, Japan), resulting in an artificial ulcer that was totally shielded in PGA sheet (● Fig. 4). The patient recovered well after curative ESD without any complications, including

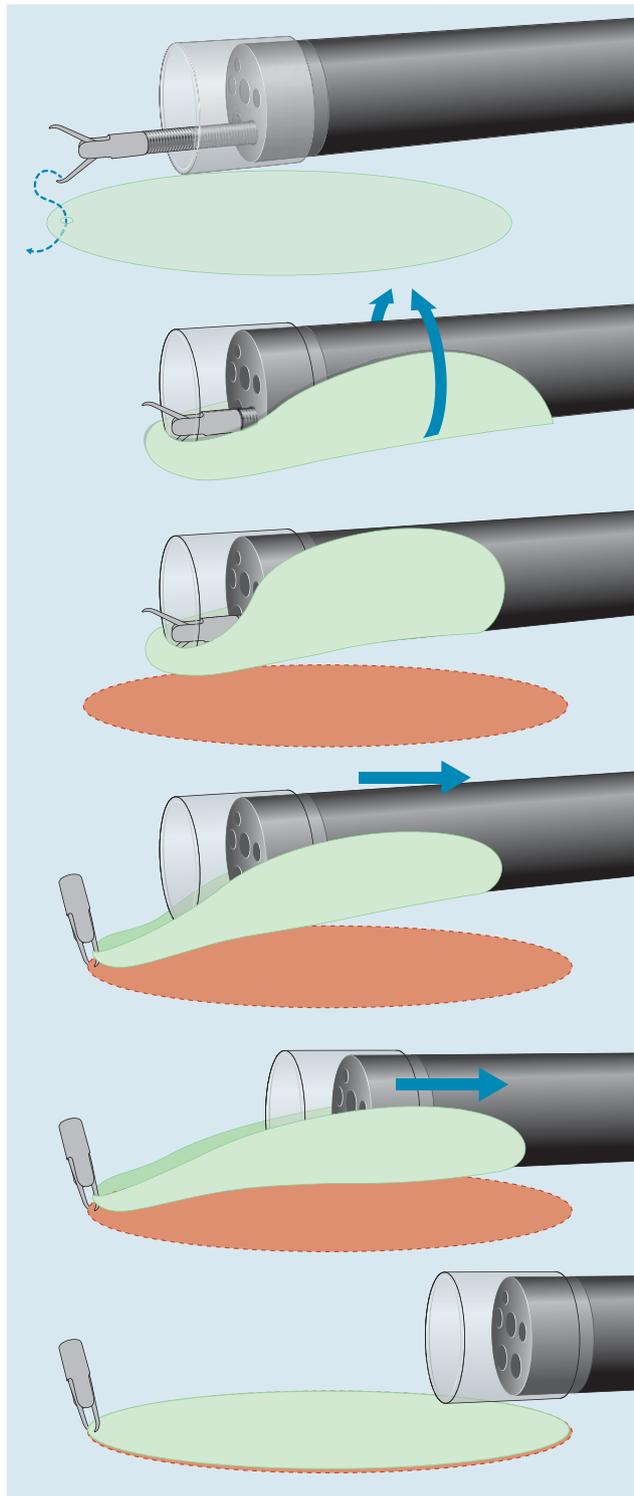


Fig. 2 Schema of the “clip and pull method.” At first, the size of the artificial ulcer was measured and a sheet of polyglycolic acid (PGA) of the same size was prepared. Prior to insertion of the endoscope, a clip was placed inside the transparent attachment. A pinhole was made in the PGA sheet and the sheet was hooked to an arm of the clip. The PGA sheet was then wrapped around the endoscope. The endoscope, wrapped with the PGA sheet, was transorally inserted to the location of the artificial ulcer. The clip was then closed, anchoring the anal side of the PGA sheet to the anal side of the artificial ulcer. The endoscope was then simply pulled while firmly and carefully pressing the PGA sheet to the esophageal wall to deploy the PGA sheet over the ulcer.

bleeding or perforation, and was discharged on the 7th day. Although he underwent balloon dilation at follow-up endoscopy on the 22nd day after ESD because

an endoscope did not pass through a mild stricture, he had not complained of any symptoms of dysphagia until the follow-up endoscopy. The artificial ulcer had

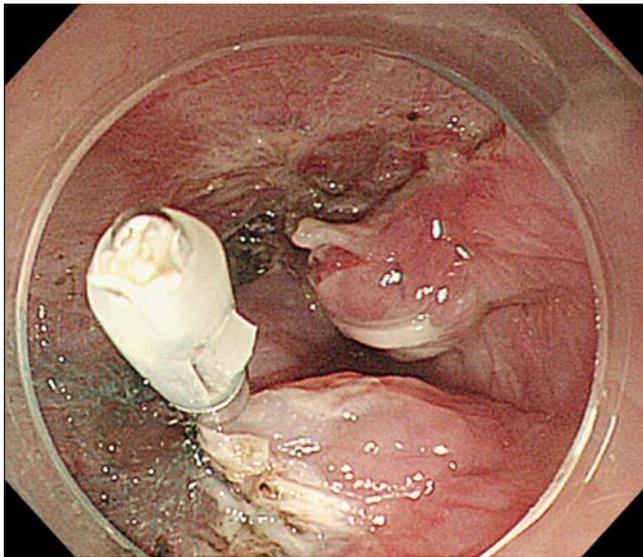


Fig. 3 Clipping the anal side mucosa of the artificial ulcer and the anal edge of the polyglycolic acid (PGA) sheet together to anchor the PGA sheet.

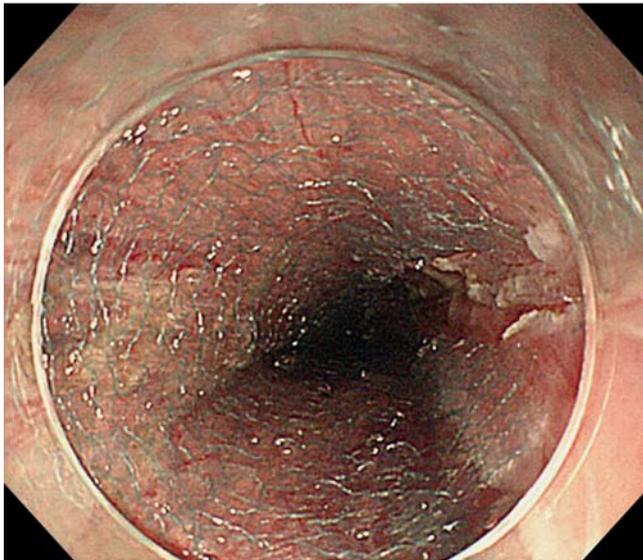


Fig. 4 After using the "clip and pull method," the polyglycolic acid sheet shielded the whole artificial ulcer, which was more than three-quarters of the circumferential extension.

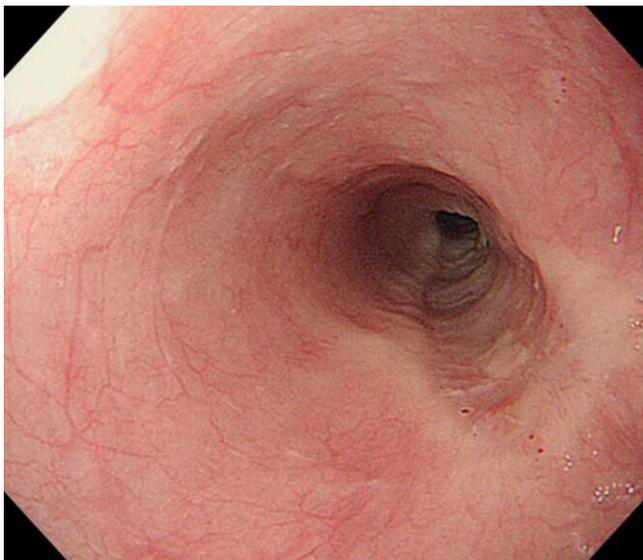


Fig. 5 The follow-up endoscopy revealed re-epithelialized artificial ulcer with little reduction in size of the ulcer bed.

been re-epithelialized with little reduction in the size of the ulcer bed (▶ Fig. 5). This simple and effective method can be useful in shielding esophageal artificial

ulcers in order to prevent complications including bleeding, perforation, and, potentially, postoperative stricture.

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