

Iatrogenic duodenal perforation during underwater ampullectomy: endoscopic repair using polyglycolic acid sheets



Fig. 1 Esophagogastroduodenoscopy in a 45-year-old woman shows a whitish, flat, laterally spreading 30-mm adenoma involving the ampulla of Vater.

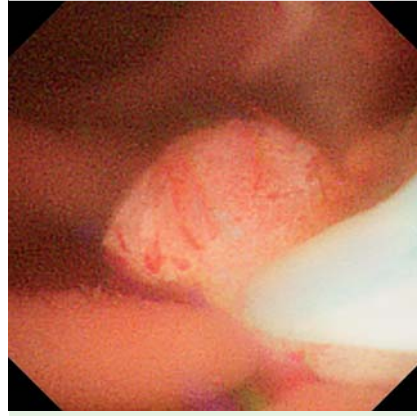


Fig. 2 Endoscopic image during underwater piecemeal ampullectomy.

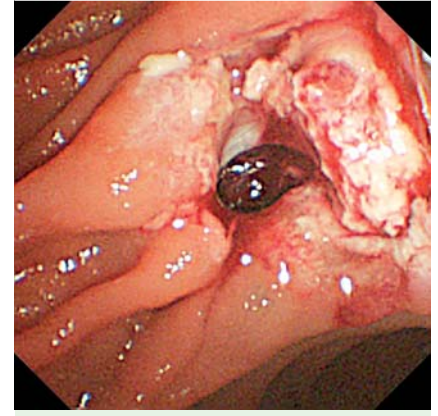


Fig. 3 A 10-mm perforation developed after resection of the third tissue specimen.

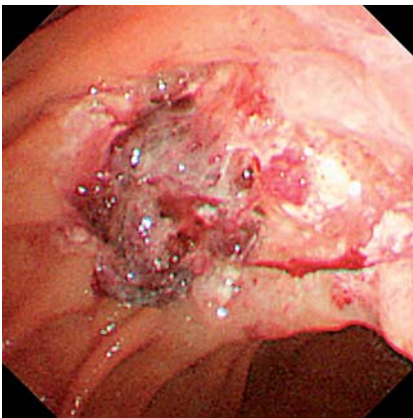


Fig. 4 Application of polyglycolic acid (PGA) sheets to the perforation site was followed by spraying of fibrin glue.

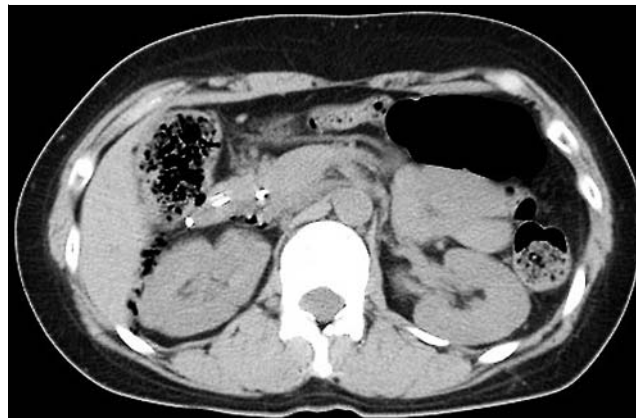


Fig. 5 Computed tomography showed no free air or ascites in the peritoneal cavity, but a small amount of gas was present along the retroperitoneum.



Fig. 6 Endoscopic image of the perforated site on postoperative day 4. The PGA sheets had completely covered the perforation site.

Endoscopic resection is used to treat duodenal lesions [1]. However, the rate of perforation in the duodenum is relatively higher than that in other areas, and such perforation can be fatal [2]. Polyglycolic acid (PGA) sheets can be used to prevent delayed perforation after endoscopic submucosal dissection (ESD) in the duodenum [3], and to cover a delayed perforation after gastric ESD [4]. However, no reports have described the usefulness of PGA sheets for treating immediate iatrogenic duodenal perforation during underwater ampullectomy.

A 45-year-old woman had a whitish, flat, laterally spreading 30-mm adenoma involving the ampulla of Vater (Fig. 1). We decided to remove the lesion using underwater ampullectomy with a side-viewing duodenoscopy [5]. We filled the duode-

num with 0.9% saline to avoid hyponatremia, a major complication of the underwater technique, and performed piecemeal resection with an electrosurgical snare (SnareMaster, SD-210U-25, 25 mm; Olympus, Tokyo, Japan) (Fig. 2). During the piecemeal resection, after removal of three tissue specimens, an approximately 10-mm perforation was observed on the posterior wall of the ampulla (Fig. 3). After completion of the piecemeal resection, we filled the perforation with PGA sheets (Neoveil; Gunze Co., Kyoto, Japan), cut to approximately 20×10 mm, and then sprayed fibrin glue over the site (Beriplast P Combi-Set; CSL Behring Pharma, Tokyo, Japan) (Fig. 4). We then placed nasoduodenal and nasobiliary drainage tubes and a pancreatic duct stent. Computed tomography showed no free air or as-

cites in the peritoneal cavity, but a small amount of gas was present along the retroperitoneum (● Fig. 5). On postoperative day (POD) 1, the patient complained of only mild abdominal and back pain without fever, and the pain disappeared the next day. Esophagogastroduodenoscopy on POD 4 showed that the PGA sheets completely covered the perforation site (● Fig. 6). The patient was discharged on POD 15.

PGA sheets may be useful for treating immediate iatrogenic duodenal perforation and for preventing delayed perforation.

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Competing interests: None

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Bibliography

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