

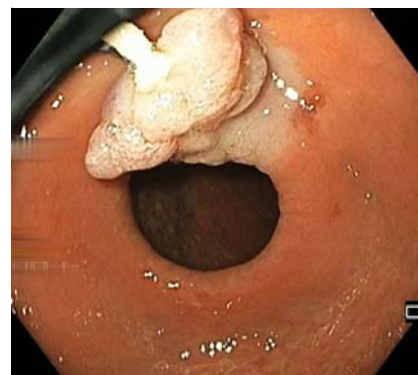
## Traction-assisted endoscopic submucosal dissection for a gastric lesion involving the pyloric ring and duodenal bulb

An 81-year-old woman underwent an upper gastrointestinal endoscopy because of anemia. Two lesions were detected: a 30-mm type 0-Ip located in the lesser curvature of the antrum, and a 25-mm type 0-Is involving the upper hemisphere of the pylorus and the proximal duodenal bulb. Biopsy specimens revealed hyperplastic polyp and adenocarcinoma, respectively. Endoscopic submucosal dissection (ESD) was proposed (► **Video 1**). The procedure was performed using an insulated-tipped knife (IT-knife 2; Olympus, Tokyo, Japan), with the patient under deep sedation. First, a submucosal injection on the distal part was performed and initial approach to the lesion from the duodenal bulb was attempted; however, neither the forward nor retroflexion view allowed a good endoscopic approach to the lesion. Therefore, clip traction was performed using dental floss, pulling the whole lesion into the gastric lumen (► **Fig. 1**). ESD was accomplished from the distal to the proximal side (► **Fig. 2**), achieving en bloc resection of both lesions on the same pathological specimen (► **Fig. 3**). At the end of

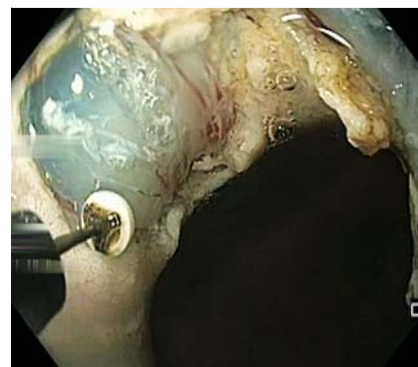
ESD, moderate bleeding was observed from two vessels in the scar, and five hemoclips were applied for successful hemostasis (► **Fig. 4**). Major nonbleeding vessels were coagulated using Coagrasper Hemostatic Forceps (Olympus) to prevent delayed hemorrhage. The procedure time was 60 minutes. The patient did not develop complications and was discharged after 3 days.

Histopathological examination revealed a hyperplastic polyp without dysplasia in the 30-mm lesion, and a moderately differentiated intramucosal adenocarcinoma, without lymphovascular invasion and with negative horizontal margins in the 25-mm lesion (expanded curative criteria).

The pylorus and duodenal bulb have been reported among the most challenging locations for performing ESD, with a greater risk of complications [1–3]. The complete resection rate decreases for tumors that are located in the upper hemisphere, have duodenal extension, and have a large circumferential extent of resection [3]. Different traction systems have been developed to assist ESD.



► **Fig. 1** Traction with dental floss and clip was performed from the duodenal part of the lesion.



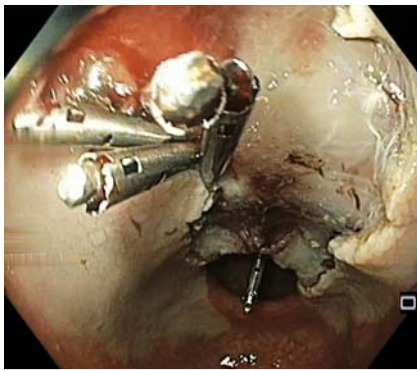
► **Fig. 2** Endoscopic submucosal dissection was performed from the distal to the proximal side.



► **Video 1** Traction-assisted endoscopic submucosal dissection for a gastric lesion involving the pyloric ring and duodenal bulb.



► **Fig. 3** En bloc resection was achieved for both lesions in the same pathological specimen.



► **Fig. 4** After completing the resection, moderate bleeding was observed from two vessels in the scar, and five hemoclips were applied.

Among them, dental floss and clip traction is a simple, feasible, and cost-effective method that allows the procedure time to be shortened while achieving en bloc resection [4, 5].

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### Competing interests

None

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