Miniprobe ultrasonography guidance during endoscopic submucosal dissection of an ampullary duodenal lesion

Endoscopic submucosal dissection (ESD) of ampullary lesions is an alternative to endoscopic papillectomy [1], which has several drawbacks such as a significant perforation rate, bleeding, and a low curative resection rate [2–4]. ESD may overcome these drawbacks, except for the risk of perforation. The sphincter of Oddi often cannot be distinguished from the duodenal muscularis. We report a novel technique using miniprobe ultrasonography to identify the sphincter of Oddi, which facilitates appropriate dissection just above the muscularis propria.

A 51-year-old woman was found to have an ampullary lesion (>2 cm) during screening esophagogastroduodenoscopy (Fig. 1). Biopsy showed a high grade adenoma. Endoscopic ultrasonography revealed no findings suspicious for deep invasion. ESD was therefore attempted aiming to remove the lesion with negative margins (Video 1).

A therapeutic endoscope (H-290T; Olympus, Tokyo, Japan) was used for the procedure and, after submucosal injection, an initial mucosal incision (approximately 15-mm long) was made 10 mm from the proximal side of the tumor using a needle-type knife (FlushKnife BT-S; 1.5 mm; Fujifilm, Tokyo, Japan). Submucosal pockets were created on both lateral sides of the ampulla (Fig. 2). A miniprobe was inserted into the left-sided submucosal pocket. Ultrasonography clearly depicted the sphincter of Oddi and duodenal muscularis, and an appropriate dissection line was identified (Fig. 3). The sphincter of Oddi was dissected from the muscularis using a scissor-type knife (SB Knife Jr. 2; SB KAWASUMI, Kanagawa, Japan) with Endocut I mode (VIO3; effect 1, duration 4, interval 1) to minimize thermal damage to the pancreaticobiliary ducts (Fig. 4). The remaining area was dissected and an en bloc resection was achieved. A duodenoscope was then used during placement of bile and pancreatic duct stents, and the mucosal defect was closed using endoclips (Fig. 5). There were no adverse events. The pathologic diagnosis was a high grade adenoma with a negative cut margin.

Submucosal ultrasonography in the pocket was useful to identify the appropriate dissection line and avoid perforation.

Video 1 Endoscopic submucosal dissection of an ampullary duodenal lesion is performed with microprobe ultrasound guidance.

Competing Interest

The authors declare that they have no conflict of interest.
The authors

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