Underwater endoscopic papillectomy using double-balloon endoscopy

A 70-year-old woman with familial adenomatous polyposis (FAP), who had undergone proctocolectomy for FAP and laparoscopic total gastrectomy with Roux-en-Y reconstruction for multiple early gastric cancers, underwent double-balloon endoscopy (DBE) for duodenal adenoma screening. DBE revealed an ampullary tumor, diagnosed as a tubular adenoma by biopsy (► **Fig. 1 a**). For resection of the ampullary tumor, we planned an underwater endoscopic papillectomy. We used a short-type double-balloon endoscope (EI-580BT; Fujifilm, Tokyo, Japan), equipped with an auxiliary water-jet injection cap (Water Please AF-WP1; Forte Grow Medical Co. Ltd., Tochigi, Japan) to allow irrigation while leaving the operative channel free. We performed underwater papillectomy using a single-use snare (Captivator II; Boston Scientific, Tokyo, Japan) without submucosal injection (► **Fig. 1 b, c**). A 5-Fr plastic stent (Geenen pancreatic stent; Cook Medical, Tokyo, Japan) was placed into the main pancreatic duct to prevent post-papillectomy pancreatitis and the mucosal defect was closed with clips (QuickClip Pro; Olympus, Tokyo, Japan) (► **Fig. 1 d**).

The patient did not experience any early adverse events and was discharged on postoperative day 7. The pathological diagnosis of the resected tumor confirmed it to be a tubular adenoma and the resection margins were free of dysplasia. Endoscopic papillectomy (EP) is a less invasive treatment for localized ampullary tumors; however, the procedure is not standardized, and severe adverse events such as pancreatitis, perforation, bleeding, and cholangitis may occur after the procedure [1, 2]. Underwater endoscopic mucosal resection (EMR) has been reported as a novel approach for the treatment of small duodenal adenomas (≤ 20 mm) [3], but the efficacy of the procedure and its safety for ampullary tumors are unclear. In this case, we applied the underwater EMR technique to an en-

► **Fig. 1** Endoscopic images showing: **a** an adenoma of the papilla of Vater; **b** the ensnared papilla during underwater papillectomy (underwater view); **c** the appearance following underwater papillectomy (underwater view); **d** insertion of a pancreatic stent into the main pancreatic duct (MPD) and closure of the mucosal defect with clips.

doscopic papillectomy procedure using DBE. The underwater EMR technique has been similarly reported to be a safe and novel treatment approach for an ampullary tumor in a patient with altered gastrointestinal anatomy [4].

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Competing interests

None

The authors

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Video 1 Underwater endoscopic papillectomy of an adenoma of the papilla of Vater.

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