

## Early duodenal cancer successfully treated by endoscopic submucosal dissection with an ultra-thin endoscope in spite of severe esophageal stricture



We report a case of early duodenal cancer successfully treated by endoscopic submucosal dissection (ESD) using an ultra-thin endoscope in a patient with severe stricture caused by photodynamic therapy (PDT) for esophageal cancer.

An 84-year-old man with a history of recurrent esophageal cancer treated by PDT subsequently developed a 10-mm 0-IIc lesion on the anterior wall of the duodenal bulb (► **Fig. 1**). Pathology showed a well-differentiated adenocarcinoma. Esophageal stenosis secondary to PDT was present, requiring more than 10 endoscopic balloon dilations, and conventional scopes could not traverse it (► **Fig. 2**). Thus, to perform resective ESD, we selected an ultra-thin endoscope (EG-L580NW7; Fujifilm, Tokyo, Japan) with a tip attachment originally created from an Argyle universal bubble tube (Covidien, Tokyo, Japan). We also prepared ORISE ProKnife (Boston Scientific Japan, Tokyo, Japan) and Endosaber Fine (Sumitomo Bakelite, Tokyo, Japan) ESD knives, RAICHO hemostatic forceps (Kaneka Medics, Tokyo, Japan), and SAIKEI clips (Kaneka Medics, Tokyo, Japan). After these preparations, we performed duodenal ESD (► **Video 1**).

We initially used a ProKnife, which can generate water flow (► **Fig. 3 a, b**). However, since its sheath was too inflexible for the procedure, we alternated with the Endosaber Fine to complete the ESD (► **Fig. 3 c, d**) and sutured the post-ESD ulcer with SAIKEI clips (► **Fig. 4**). The total procedure time was 75 minutes. Pathology showed a well-differentiated tubular adenocarcinoma localized in the mucosa and a curative resection was obtained.

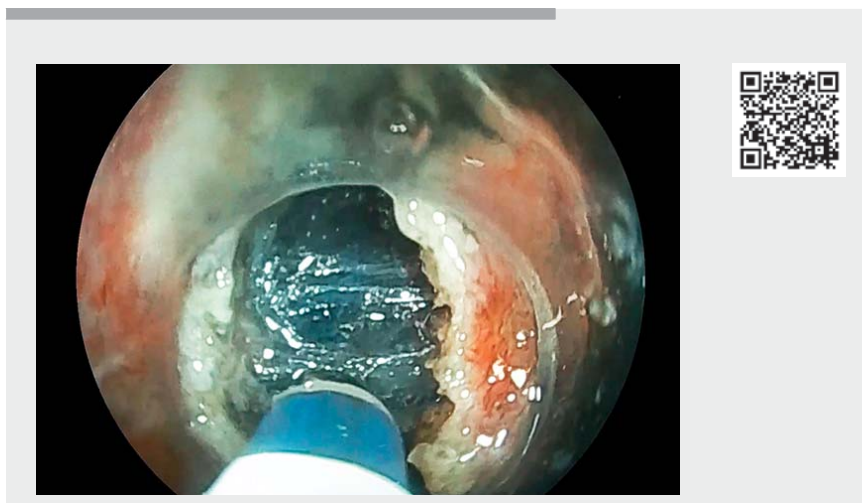
There have been two reports of ESD of the esophagus and stomach with esophageal stenosis using ultra-thin endo-



► **Fig. 1** A 10-mm 0-IIc early duodenal carcinoma is seen on the anterior wall of the duodenal bulb.



► **Fig. 2** Stenosis was observed after photodynamic therapy for recurrent esophageal cancer. The standard scope could not pass.



► **Video 1** How to make a self-made attachment for the ultra-thin endoscope, and endoscopic submucosal dissection for early duodenal cancer with esophageal stricture by photodynamic therapy (video created at 1.5× speed).

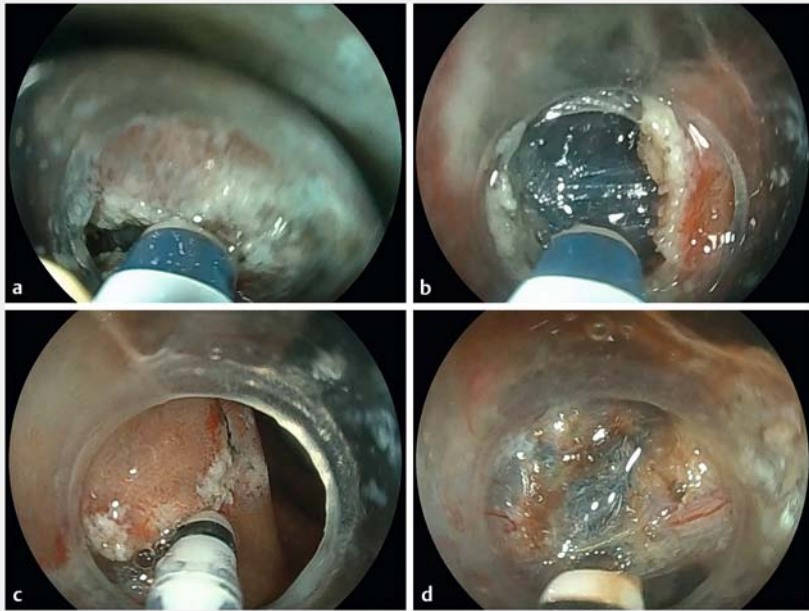


scopes [1, 2] but none of duodenal ESD. We demonstrated the feasibility of ESD with an ultra-thin endoscope for early duodenal cancer in a patient with esophageal stenosis impassable by standard scopes.

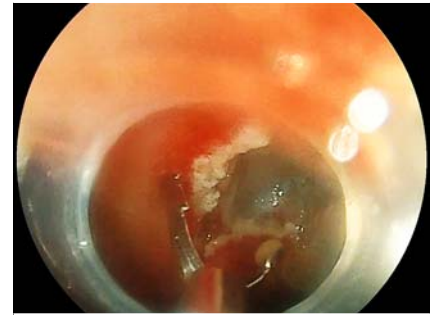
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► **Fig. 3** a Incision with ProKnife. b Dissection with ProKnife. c Incision with Endosaber Fine. d Dissection with Endosaber Fine.



► **Fig. 4** The ulcer after endoscopic submucosal dissection was sutured with 5 SAIKEI clips.

## Competing interests

The authors declare that they have no conflict of interest.

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