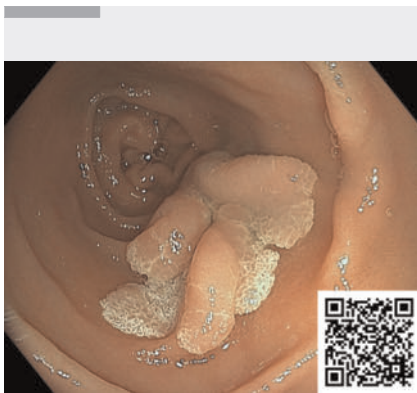


Endoscopic submucosal dissection with dental floss traction for the treatment of a superficial tumor in the horizontal part of the duodenum

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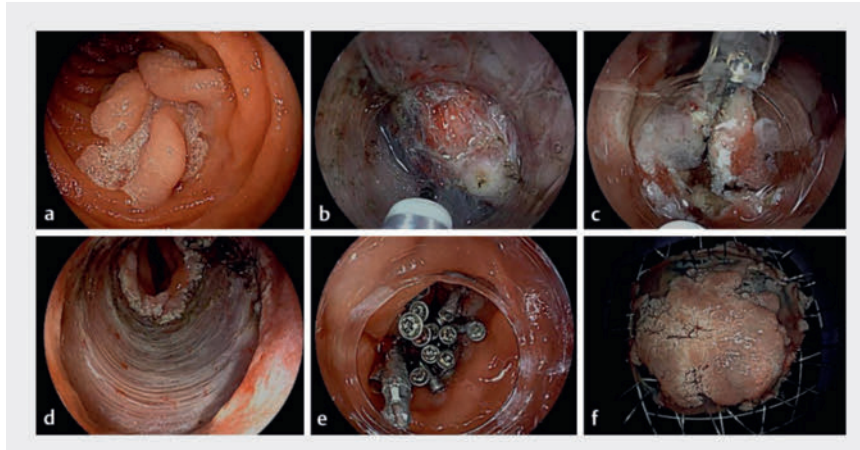


► **Fig. 1** Enhanced computed tomography showing thickening of the duodenal horizontal wall.



► **Video 1** Endoscopic submucosal dissection with dental floss traction for the treatment of a superficial tumor in the horizontal part of the duodenum in a 55-year-old man. WLE, white-light endoscopy; LCI, linked color imaging; BLI, blue light imaging.

A 55-year-old man, during a routine screening gastroscopic examination, was found to be harboring an incipient neoplasm on the horizontal part of the duodenum. The lesion measured approximately 40×35 mm. Its surface morphology exhibited irregularity and a villous-like appearance under linked color imaging or blue light imaging, with uneven distribution and marginalization of white

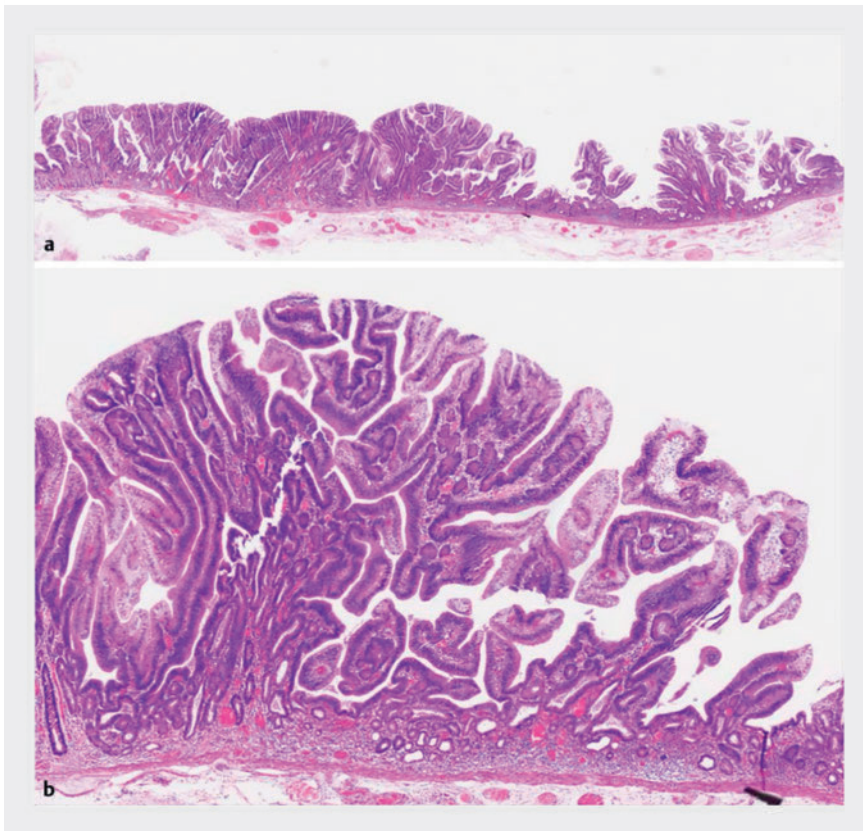


► **Fig. 2** Endoscopic submucosal dissection. **a** Superficial tumor in the horizontal part of the duodenum. **b** Submucosal dissection. **c** Dental floss traction. **d** Postoperative defect. **e** Closure of the defect with metal clips. **f** Resected tumor.

opaque substance. Abdominal enhanced computed tomography showed no lymphatic or organ metastasis (► **Fig. 1**). The patient was admitted as an inpatient and underwent endoscopic submucosal dissection (ESD) under general anesthesia (► **Video 1**). Significant challenges were encountered during this procedure, specifically during the circumferential mucosal incision, and particularly on the anal side of the lesion. To overcome the difficulty, we employed a colonoscope (EC-L600ZP7; Fujifilm, Tokyo, Japan) and applied abdominal pressure, which enhanced endoscope stability and allowed the circumferential incision to be successfully completed. We then used clips and dental floss for traction on the oral side of the lesion. This improved visualization of the submucosal layer and facilitated continuous pulling towards the oral side, aiding the approach of the endoscope's tip. We transitioned to a gastroscop (EG-601WR; Fujifilm, Tokyo, Japan) to complete dissection in the submucosal layer. The procedure was completed in

285 minutes (► **Fig. 2**). After surgery, no complications such as perforation, hemorrhage, or pyrexia occurred. Histopathological analysis showed complete excision of the villous tubular adenoma, with R0 resection achieved (► **Fig. 3**). Given the rarity of duodenal tumors, reports on superficial tumors within the horizontal part of duodenum are scarce [1]. The duodenum's distinctive anatomical characteristics, with a small lumen and a C-shaped cavity, give rise to challenges in carrying out ESD [2]. Instances of dental floss traction in ESD interventions for superficial duodenal tumors have been documented [3]. To our knowledge, this is the first report of the employment of both a gastroscop and a colonoscope, together with the application of dental floss traction, to address the challenges encountered during ESD for a superficial tumor situated in the horizontal segment of the duodenum.

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► **Fig. 3** Histopathological analysis demonstrating villous tubular adenoma. **a** Low-power field. **b** High-power field.

Bibliography

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Conflict of Interest

The authors declare that they have no conflict of interest.

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