



Nonampullary duodenal subepithelial neuroendocrine tumor removed R0 by endoscopic submucosal dissection with double clips and rubber band traction

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We report the case of a 68-year-old man who underwent a gastroscopy for symptoms of GERD. A 10-mm submucosal lesion was detected on the posterior wall of the bulb. Examination of the initial biopsy sample confirmed a well-differentiated neuroendocrine tumor (G1, Ki67 index 1%) with cytokeratine (+), chromogranin (+), and synaptophysin (+). CT octreoscan revealed no metastasis. The patient was referred to our center for further treatment.

After discussion with our oncologist, an endoscopic resection was proposed to the patient.

PROCEDURE

To obtain complete resection with free lateral and deep margins, we decided to perform endoscopic

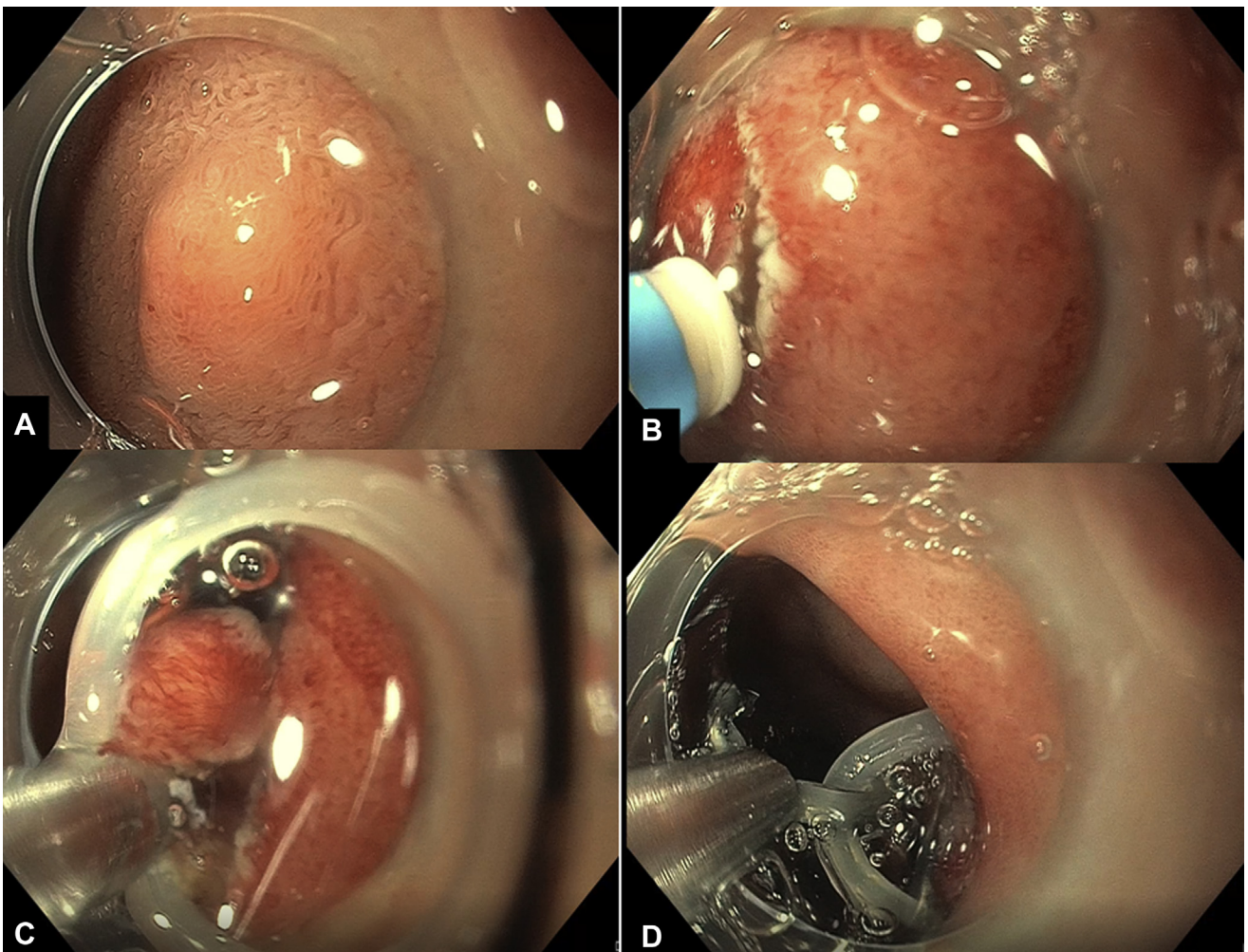


Figure 1. Clip and rubber band strategy to achieve resection of submucosal neuroendocrine tumor (NET) in bulb. **A**, Submucosal NET of bulb. **B**, Incision and trimming. **C**, First clip fixation. **D**, Second clip traction.

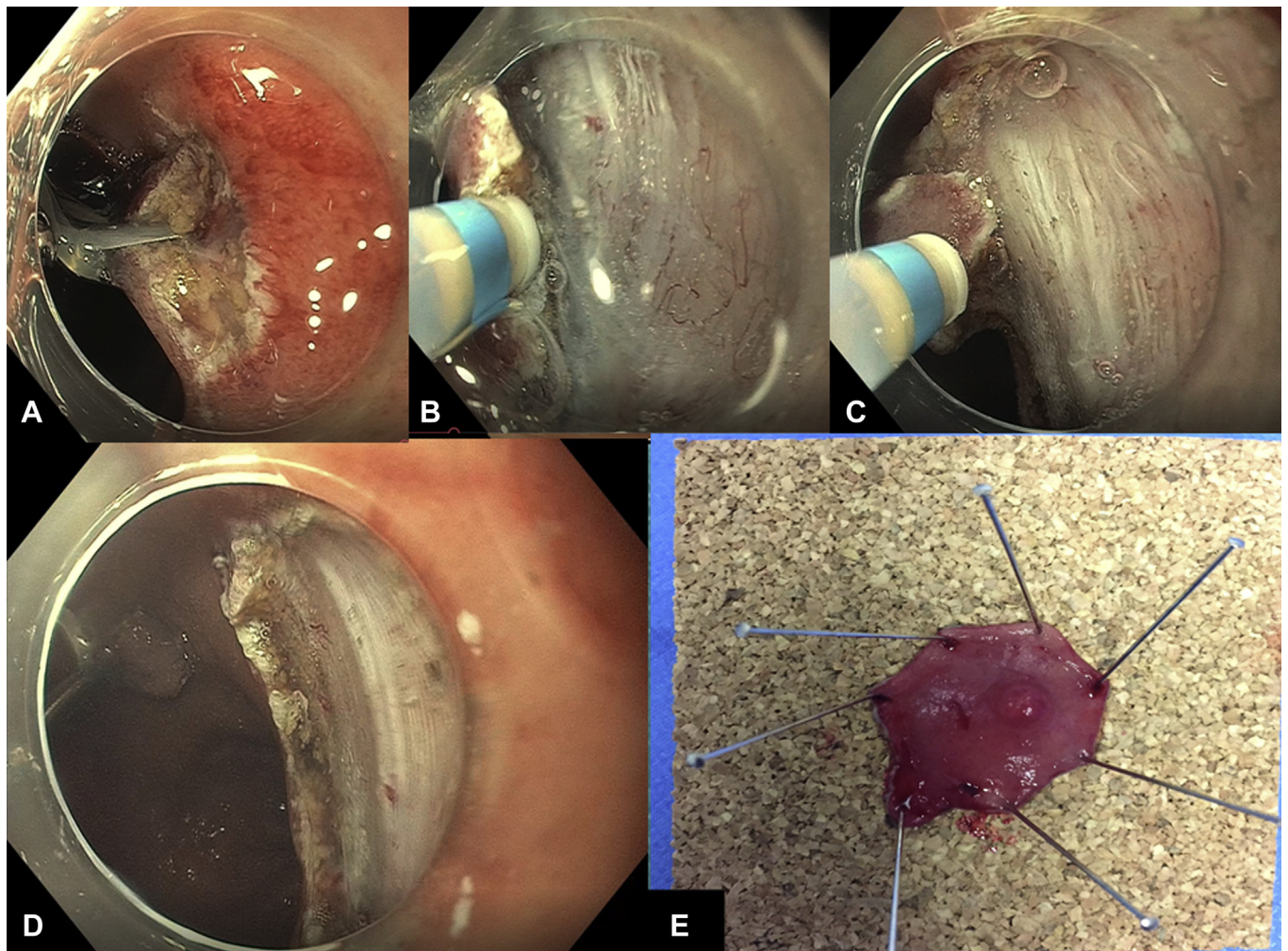


Figure 2. End of dissection and management of resected area. **A**, Traction system. **B**, Endoscopic submucosal dissection under traction. **C**, End of dissection. **D**, Resected area (ulcer bed and resected lesion fixed to clip traction on opposite wall). **E**, Stretched specimen on cork.

submucosal dissection (ESD), despite the small size of the lesion. The patient was given general anesthesia (propofol) with orotracheal intubation to achieve optimal conditions for the procedure. Gastroscopy showed a small subepithelial lesion at the posterior wall of the bulb just behind the pylorus. Owing to the close proximity to the pylorus, we had difficulty in obtaining a stable position in front of the lesion. We decided to perform ESD with double clips and rubber band traction (DCT-ESD) (Figs. 1 and 2; Video 1, available online at www.VideoGIE.org). Hydroxyethylamidon solution mixed with indigo carmine was used for the initial submucosal injection. First, we made a circumferential incision. Exposure of submucosal space was very poor because of the close proximity to the pylorus arch. A mucosal flap was created by trimming at the anterior incision. A first clip attached to a rubber band was inserted through the working channel and fixed on 1 edge of the mucosal flap. A second clip grasped the rubber band and was attached to the opposite wall. Thanks to

our traction system, the exposure of the lesion was improved, the fibrotic submucosal cutting line became more visible, and the position of the endoscope became more stable (Fig. 3). After 28 minutes, en bloc resection of a 20- × 10-mm specimen was accomplished without any adverse events or any coagulation of the muscular propria layer. We used a 10-mm snare to remove the second clip from the bulb wall so as to retrieve the specimen. The specimen was immediately stretched on a cork board and sent to our pathologist.

OUTCOME

The patient was hospitalized in our center for 24 hours after the procedure in a nil per os condition for surveillance for adverse events. He was discharged home 24 hours postoperatively after starting a normal diet without any adverse symptoms. The final pathologic examination showed complete R0 resection of a 4.7-mm, pT1, G1

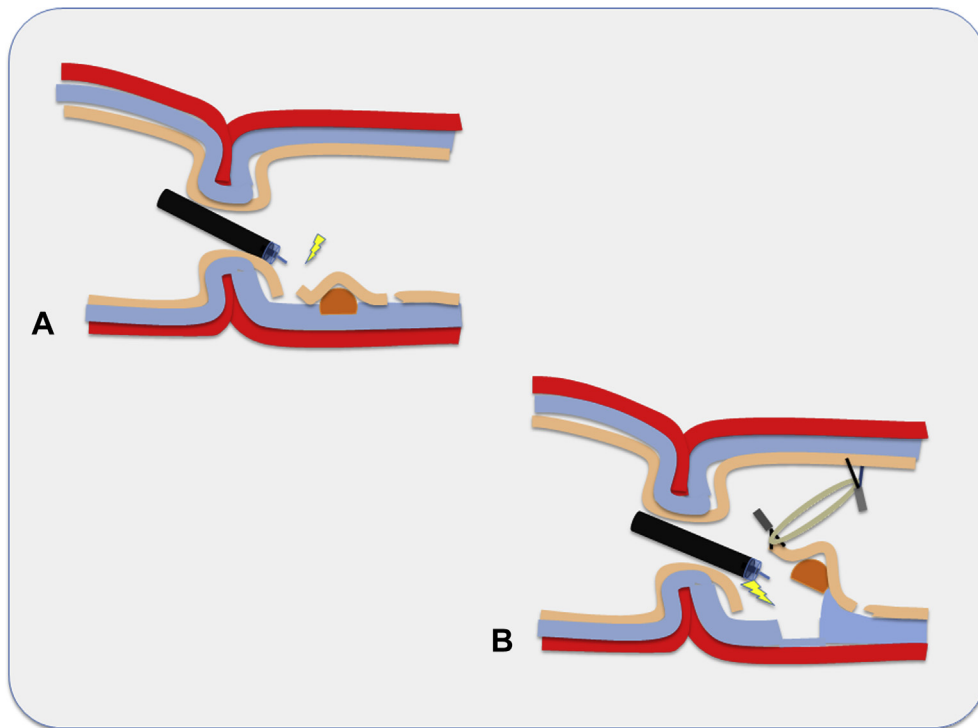


Figure 3. Placement of traction system. **A**, Poor exposure of submucosal plane before traction. **B**, Better view of submucosal space under the lesion.

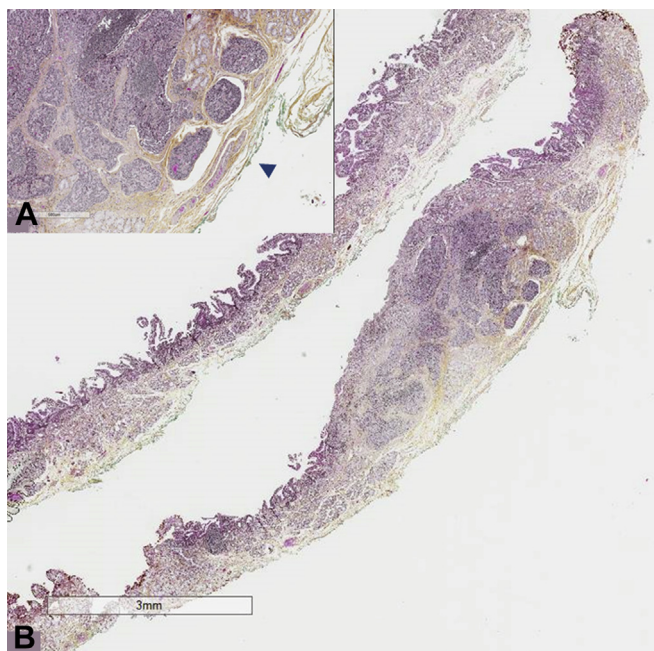


Figure 4. Endoscopic submucosal dissection specimen of submucosal neuroendocrine tumor (19EH06750). **A**, Inset, inked deep margin (G1 orig. mag. $\times 10$). **B**, Larger image showing en bloc pR0 resection (H&E, orig. mag. $\times 10$).

neuroendocrine tumor (Ki67 index 3%) with chromogranin (+) synaptophysin (+) gastrin (+) somatostatin (–) staining (Fig. 4). A curative resection of the nonampullary subepithelial lesion was achieved endoscopically with the help of a traction system. Although duodenal ESD appears challenging because of its high risk of adverse events ($>20\%$ perforation rate) and is not yet recommended,¹ we believe that we can overcome the difficulty with our DCT-ESD strategy because it was previously proved to improve colonic ESD for difficult lesions.² Also, it was shown to be feasible with endoscopic full-thickness resection³ despite the fact that this technique is not yet approved for foregut lesions. Nevertheless, our DCT-ESD procedure is not time consuming and not financially burdensome.

DISCLOSURE

All authors disclosed no financial relationships relevant to this publication.

Abbreviations: DCT, double clips and rubber traction; DCT-ESD, endoscopic submucosal dissection with double clips and rubber band traction; ESD, endoscopic submucosal dissection; NET, neuroendocrine tumor.

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