Endoscopic full-thickness resection of a stomach gastrointestinal stromal tumor using a dedicated full-thickness resection device

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Endoscopic full-thickness resection (EFTR) is increasingly performed for the removal of GI subepithelial lesions (SELs). EFTR is minimally invasive compared with surgery but still can procure an adequate specimen for histologic assessment. A dedicated EFTR device (Ovesco Endoscopy, Tübingen, Germany) has been developed for the management of colorectal lesions.[1] Data on its safety and efficacy for lesions in the upper GI tract are limited.[2,3] In this case, we share our experience with the off-label use of a dedicated EFTR device for the removal of a GI stromal tumor (GIST) in the stomach.

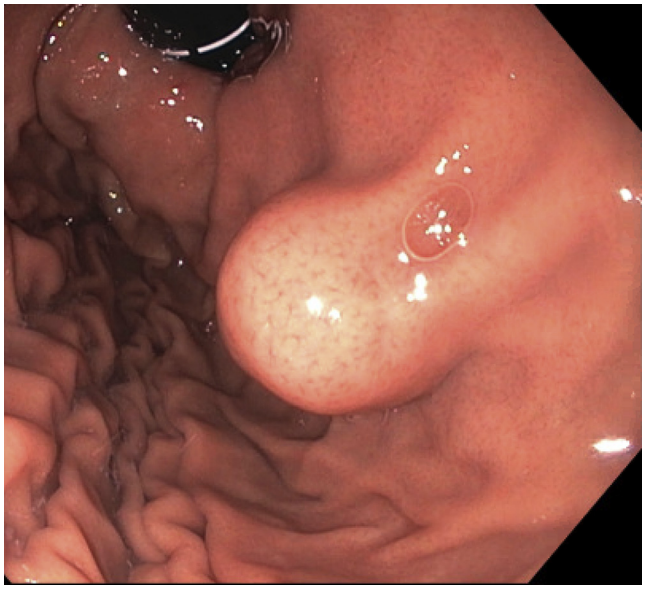

Figure 1. Subepithelial lesion identified in the fundus of the stomach during endoscopy.

Figure 2. Round homogenous hypoechoic lesion located within the submucosa (layer 3) on EUS.

A 60-year-old man who underwent EGD for gastroesophageal reflux symptoms was incidentally noted to have a 15-mm SEL in the fundus of the stomach (Fig. 1). EUS demonstrated a hypoechoic lesion within the submucosa (layer 3) (Fig. 2). EUS-guided fine-needle biopsy results confirmed the SEL to be a GIST, but the tissue sample was not sufficient for determination of mitotic count and Ki-67 index. After discussing these findings with the patient, he opted for endoscopic resection over surveillance.

The procedure was performed with a colonoscope (PCF-HD190; Olympus America, Center Valley, Pa, USA) with the patient under general anesthesia (Video 1, available online at www.VideoGIE.org). A guidewire (Cook Medical, Bloomington, Ind, USA) was

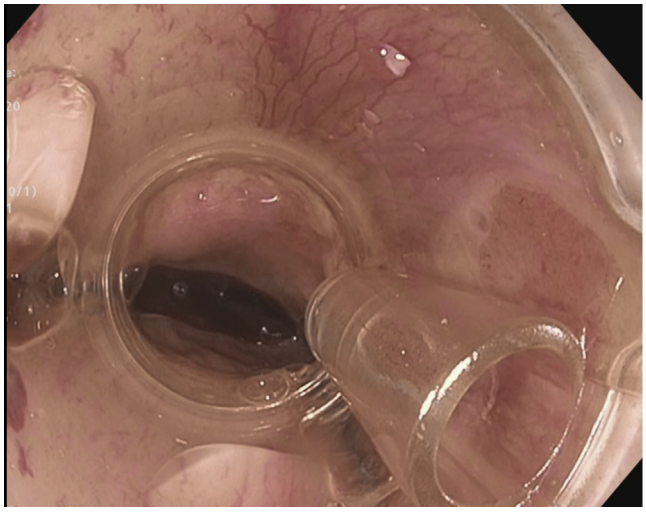

Figure 3. Insertion of the endoscopic full-thickness resection "sizing" cap into the esophageal lumen to estimate fit before use of the device.

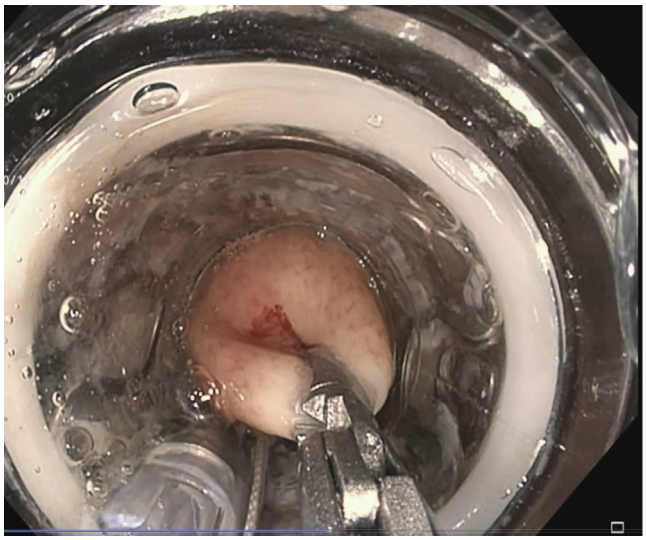

Figure 4. Retraction of the target tissue into the endoscopic full-thickness resection cap with the use of a grasping forceps.

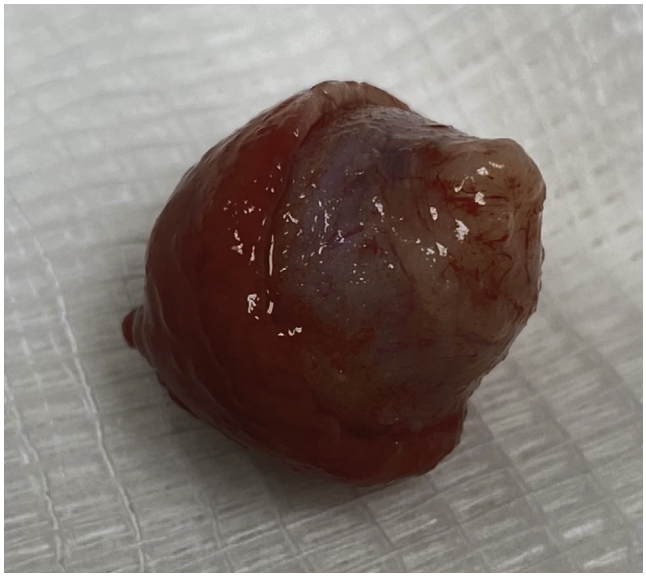

Figure 5. En bloc resected specimen.

coiled in the stomach, and the colonoscope was retrieved. Using the indwelling wire as a guide, we inserted the colonoscope with the "sizing" distal cap to confirm that the EFTR device could be advanced into the esophageal lumen (Fig. 3). The sizing cap was subsequently exchanged for the EFTR device, and this was readvanced into the stomach. The SEL was retracted into the EFTR cap with the assistance of a grasping forceps (Cook Medical) (Fig. 4). The modified over-the-scope clip then was deployed, with simultaneous en bloc resection above the clip using the premounted electrosurgical snare (Fig. 5). Bleeding was identified on inspection of the resection site and was successfully treated with a coagulation grasper (Olympus America; SOFT COAG mode, 80W Effect 4; ERBE Electromedizin, Tübingen, Germany) (Fig. 6). Histopathology results confirmed the lesion to be a low-grade G1 GIST (mitotic rate 1/5 mm^2) with negative lateral but positive deep resection margins (Fig. 7). Based on these findings, the patient was enrolled in an EUS surveillance program.

There are advantages to using a dedicated device for EFTR. The preloaded snare facilitates a single-step "close and cut" approach, which limits exposure of the peritoneal cavity to bowel contents. Conversely, the main drawback is the potential difficulty of inserting the EFTR device into the esophagus. Strategies to overcome this issue may include dilating the upper esophagus sphincter before insertion[2] or, as in our case, using the sizing cap and a wire to estimate feasibility and guide insertion. Of note, the EFTR site should be carefully inspected after resection because bleeding may still occur even after deployment of the over-the-scope clip. Furthermore, it should be highlighted that successful incorporation of the entire lesion into the cap may be more challenging in the upper GI tract, given the thicker and less-pliable stomach wall, compared with the colon. This, in turn, can affect the size of the lesions that can be adequately resected. Finally, use of the current EFTR device in the upper GI tract is an off-label indication and thus should be discussed on a case-by-case basis or as part of clinical trials. Future studies are needed to define the potential role of dedicated EFTR devices for the management of SELs in the upper GI tract.

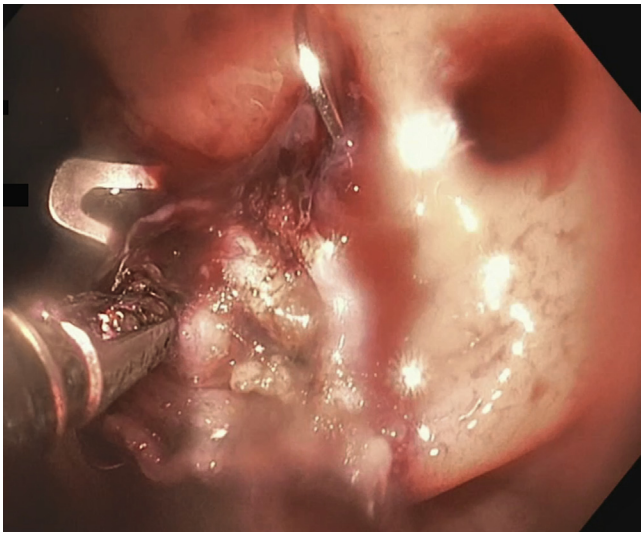

Figure 6. Hemostasis at the resection site using the coagulation grasper.

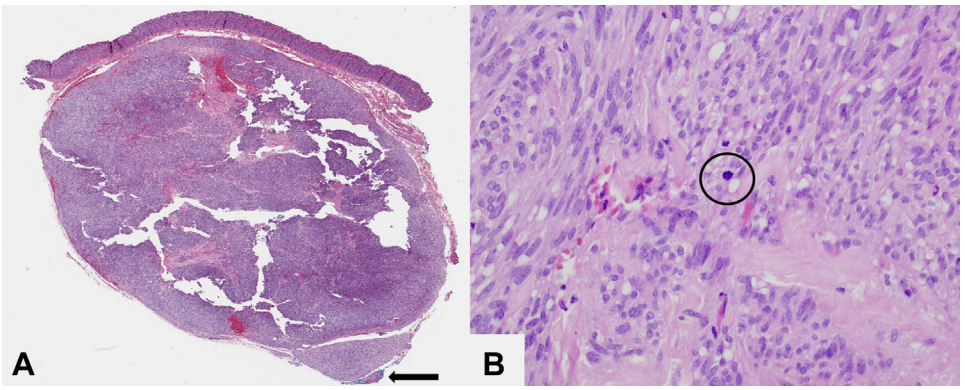

Figure 7. Pathology testing (hematoxylin and eosin stain) showing a circumscribed submucosal spindle cell lesion consistent with a GI stromal tumor. **A,** The lesion is surrounded by a thin rim of benign loose connective tissue, but tumor is focally present in the deep resection margin *(arrow)* (R1 resection). **B,** The lesion is composed of monotonous spindle cells with rare mitosis *(circle)* identified (1 mitoses/5 mm^2) (orig. mag. ×400).

DISCLOSURE

Dr Draganov is a consultant for Olympus, Lumendi, Boston Scientific, Cook Medical, and Microtech. Dr Yang is a consultant for Steris, Boston Scientific, and Lumendi. All other authors disclosed no financial relationships.

Abbreviations: EFTR, endoscopic full thickness resection; GIST, gastrointestinal stromal tumor; SEL, subepithelial lesion.

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