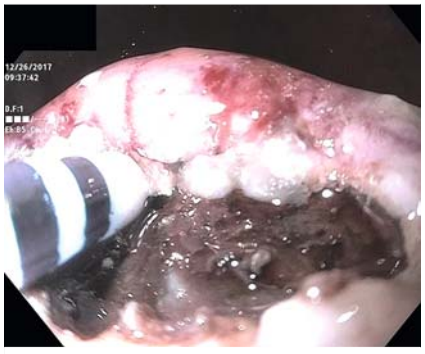
Robotic-assisted endoscopic full-thickness resection of a gastrointestinal stromal tumor: the tip of the iceberg

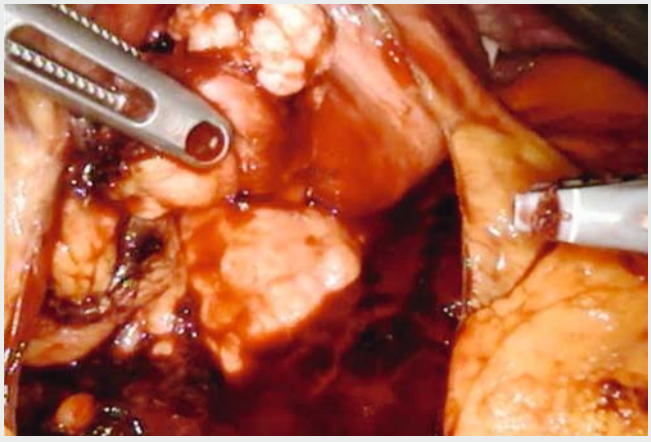
A 56-year-old woman presented for evaluation of a gastric body submucosal nodule. She underwent endoscopic ultrasound, which revealed a hypoechoic lesion arising from the muscularis propria that measured 21.8 × 17.9 mm in diameter. Fine-needle aspiration demonstrated spindle cells positive for C-KIT and DOG-1, consistent with gastrointestinal stromal tumor (GIST).

For management of the lesion, she elected to undergo an endoscopic full-thickness resection (EFTR). The borders of the lesion were marked circumferentially. After injection to create a submucosal space, the mucosa was incised using a hybrid knife. The submucosa was exposed to identify the lesion. EFTR was performed after the lesion was fully exposed (▶ **Fig. 1**, ▶ **Video 1**). As dissection continued, multiple large blood vessels were seen encasing the lesion. There was significant bleeding, which was controlled using coagulation grasper forceps and hemostatic clips. Although hemostasis was achieved, a decision was made to complete the procedure via surgical resection given the multiple blood vessels encasing the lesion.

The procedure was converted to a robotic-assisted EFTR (▶ **Video 1**). The lesion was identified via robotic exposure. The GIST and previously placed clips were excised with the aid of upper endoscopy and a vessel sealer. The lesion was placed in the stomach, removed endoscopically, and the gastric defect was closed. The final lesion measured 4.5 × 3.2 cm, which was larger than the size predicted initially by endosonography.



▶ **Fig. 1** Accessing the submucosal space for endoscopic full-thickness resection.



Video 1 Robotic-assisted endoscopic full-thickness resection with inversion of lesion into the stomach for removal.

EFTR has been described for management of subepithelial gastric tumors [1, 2]. Bleeding during resection has been reported in up to 38.7 % of cases [3]. Endoscopic hemostasis is typically successful. However, gastroenterologists who undertake EFTR must always be prepared for complicated procedures, which occasionally require conversion to surgical resection. Laparoscopy has been previously demonstrated to assist EFTR [4]. We demonstrate a successful case of robotic-assisted EFTR of a GIST.

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Competing interests

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All other authors have no conflicts of interest to report.

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