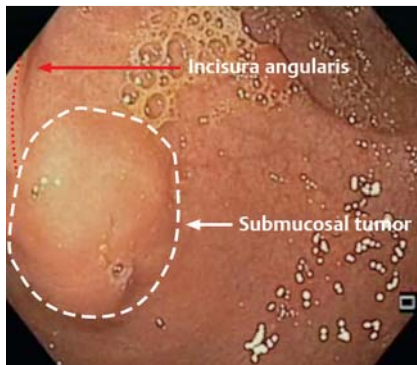


## Conversion to laparoscopy in gastric endoscopic full-thickness resection: adverse event or routine step-up approach?



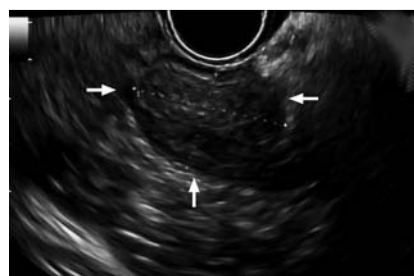
► **Fig. 1** Endoscopic view showing submucosal tumor (white dashed line) located in the anterior wall of the gastric antrum, proximal to the incisura angularis (red dashed line).

A 25-year-old woman was referred to our institute for evaluation of an incidental gastric submucosal tumor (SMT) located in the anterior wall of the antrum, proximal to the incisura angularis (► **Fig. 1**). Endoscopic ultrasound (EUS) showed an inhomogeneous hypoechoic lesion with regular margins arising from the muscularis propria (► **Fig. 2**). EUS-guided fine-needle biopsy with a 20-gauge needle (EchoTip ProCore, Cook Medical, Limerick, Ireland) was performed. Cytohistological examination was inconclusive. The patient refused long-term endoscopic surveillance. Therefore, after multidisciplinary evaluation, it was decided to perform free-hand endoscopic full-thickness resection (EFTR) with gastric defect closure using the OverStitch suturing device (Apollo Endosurgery, Austin, Texas, USA) (► **Video 1**).

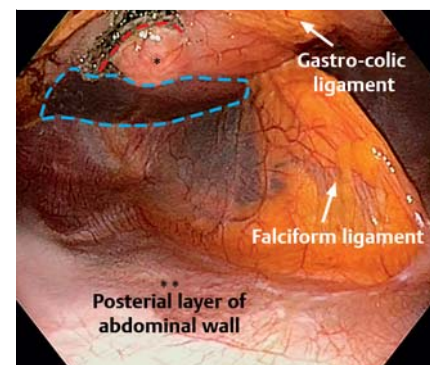
The patient was informed that in case of failure of EFTR, the standard laparoscopic approach would be performed during the same general anesthesia. After 75% of the resection, completion of the EFTR appeared technically unfeasible. Endoscopic peritoneal exploration showed the gastric SMT to have an extraluminal growth pattern and to be in close contact with the left liver lobe (► **Fig. 3**).



► **Video 1** Conversion to laparoscopy in gastric endoscopic full-thickness resection as a possible and effective step-up approach.



► **Fig. 2** B-mode endoscopic ultrasound view showing an inhomogeneous hypoechoic lesion (white arrows), 15 × 18 mm in diameter, originating from the muscularis propria layer.

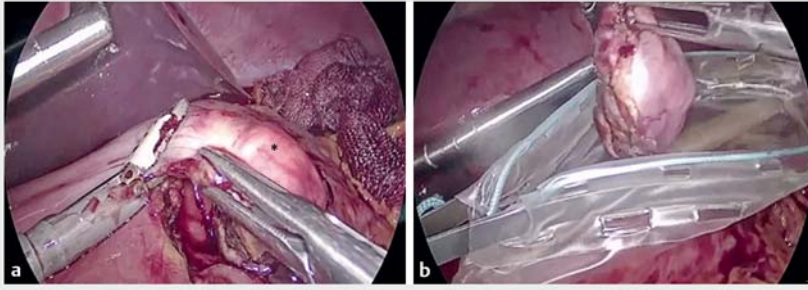


► **Fig. 3** Endoscopic peritoneal exploration revealed an extraluminal growth pattern of the tumor (asterisk: lesion; red dashed line: free-hand cutting line) and its close contact with the left liver lobe (blue dashed line). The endoscope retroflexed position allowed complete delineation of anatomic structures: gastro-colic ligament, falciform ligament, and the posterior layer of the abdominal wall (double asterisk).

Attempts at countertraction were not effective in obtaining successful triangulation. Thus, conversion to laparoscopy was decided.

The patient was promptly transferred to the operating room, and laparoscopic wedge resection was successfully performed during the same anesthesia (► **Fig. 4**). No severe complications occurred, and the patient was discharged on Day 7. Final histology revealed complete resection of an ectopic pancreas.

The laparoscopic approach is the gold standard for the management of SMTs but EFTR has demonstrated a good efficacy and safety profile in resection of deep gastric SMTs [1]. Few cases of con-



► **Fig. 4** Conversion to laparoscopic surgery. **a** Laparoscopic view showing completion of tumor (asterisk) resection using linear stapler. **b** Laparoscopic view of specimen removal using endoscopic bag.

version to laparoscopy in gastric EFTR have been reported [2–5]. A step-up approach consisting of standard EFTR followed, if necessary, by laparoscopic resection or laparoscopy-assisted EFTR within the same operative session appears promising in the management of selected cases of gastric SMT.

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### Competing interests

None

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