



Endoscopic full-thickness resection of gastric ulceration with persistent low-grade dysplasia using full-thickness resection device

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BACKGROUND

Endoscopic mucosal resection and endoscopic submucosal dissection (ESD) are well-established treatment methods for resection of precancerous gastric lesions and early gastric cancers.¹ Ulcerated or scarred gastric lesions are challenging to resect with EMR or ESD because of submucosal fibrosis and scarring, and hence, carry increased risk for perforation.²

Endoscopic full-thickness resection (EFTR) using a full-thickness resection device (FTRD) (OVESCO Endoscopy AG, Tuebingen, Germany) is rapidly gaining popularity for the treatment of upper GI tract lesions.^{3,4} The FTRD can effectively and efficiently resect mucosal lesions measuring up to 2.5 cm and subepithelial lesions measuring up to 1.5 cm in diameter in the upper GI tract. There are currently a small number of case reports and case series demonstrating its use in resection of mucosal and subepithelial gastric and duodenal lesions,^{5,6} but data is limited in the use of FTRD for resection of precancerous gastric lesions and early gastric cancers with overlying ulceration or scarring.

Here, we describe a patient with an ulcerated gastric lesion with persistent low-grade dysplasia who underwent successful resection of the lesion using the FTRD (Video 1, available online at www.giejournal.org).

CASE

A 75-year-old man with a history of diffuse gastric intestinal metaplasia was found to have a 15 mm ulcer in the gastric antrum (Fig. 1). Biopsies of the ulcer demonstrated low-grade dysplasia (LGD), while biopsies from the surrounding gastric antrum and body showed incomplete gastric intestinal metaplasia. The patient was started on a proton pump inhibitor twice daily with a plan to repeat the endoscopy for surveillance.

Subsequent upper endoscopies 12 and 24 months later showed partial healing of the gastric ulcer (Paris classification 0-IIa+c) as shown in Figure 2; however, biopsies showed persistent LGD. Given this, and the possibility of advanced histology beyond LGD within the lesion, treatment was pursued. After a multidisciplinary

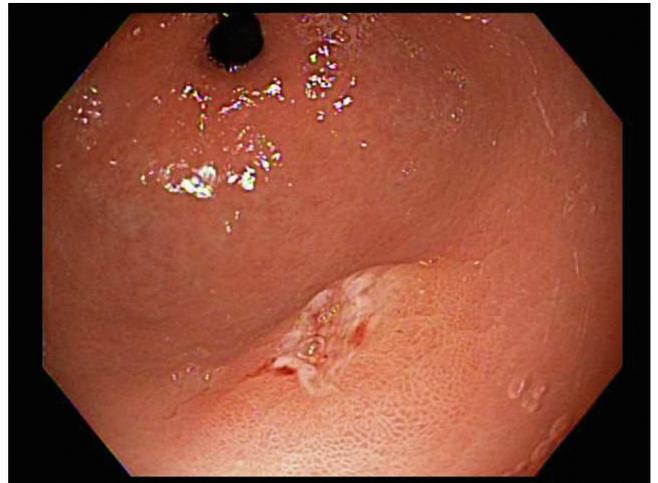


Figure 1. Initial upper endoscopy showing antral gastric ulcer.



Figure 2. Subsequent upper endoscopy showing partial healing of the gastric ulcer.

discussion, the decision was made to pursue endoscopic full-thickness resection using the FTRD for resection of the lesion.

PROCEDURE

An upper endoscopy was performed and a careful examination of the stomach under white light and narrow band imaging revealed a partially healed antral ulcer in the background of diffuse GI metaplasia. The borders of the lesion were marked circumferentially with a marking probe (Fig. 3). The target area for resection measured approximately 15 mm in diameter.

The FTRD was mounted on a modified therapeutic upper endoscope (1T scope, Olympus GIF-1TH190; Center Valley, Pa) and advanced into the stomach. The lesion was identified in the gastric antrum by the surrounding markings.

The grasping forceps were advanced through the working channel of the endoscope and the lesion was grasped and pulled into the FTRD cap. Given the significant fibrosis and scarring of the lesion, intermittent suction through the working channel was used judiciously to completely retract the lesion into the cap. The clip was deployed and the pre-mounted snare on the FTRD was closed and electrocautery was used to resect the lesion. After complete resection, the endoscope and resected specimen (Fig. 4) were withdrawn. The resection site was examined and demonstrated appropriate positioning of the clip, and there was no evidence of bleeding (Fig. 5). Given the proximity of the lesion to the pylorus, the endoscope was advanced to the duodenum documenting luminal patency.

The patient tolerated the procedure well and there were no adverse events within 4 weeks of the procedure. One dose of perioperative ciprofloxacin was used during the procedure. Proton pump inhibitor therapy was continued for 2 months following resection. The final pathology report of the lesion confirmed focal low-grade dysplasia (Fig. 6) with negative resection margins (R0).



Figure 3. Circumferential marking of the lesion.

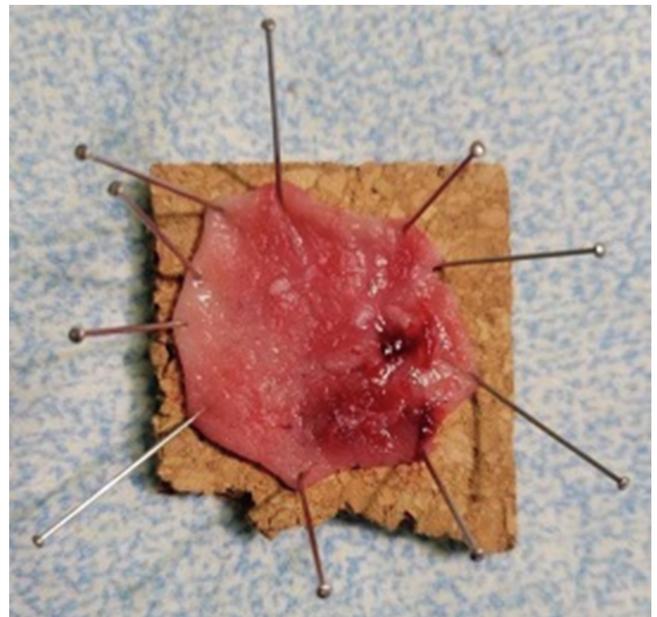


Figure 4. Resected specimen.

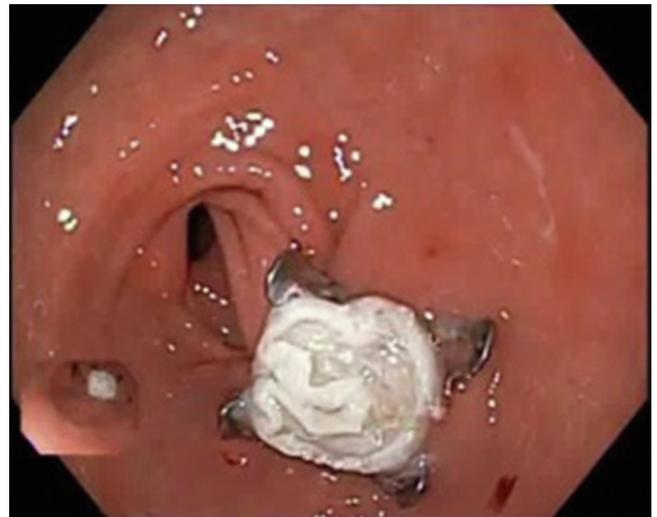


Figure 5. Endoscopic view of the resection site showing good clip position and no evidence of bleeding.

DISCUSSION

EFTR using the FTRD device can offer a safe and effective approach to treat ulcerated or scarred gastric lesions that are not typically amenable to conventional resection techniques. While ESD could have been attempted in this case, it would have been challenging because of the underlying submucosal fibrosis and scarring in the setting of a partially healed ulcer. Further, given the size of the lesion, full-thickness resection with the FTRD was felt to be more efficient and safer in this case.

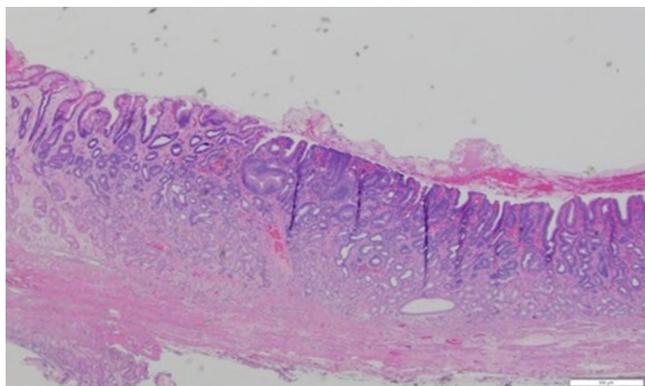


Figure 6. Pathology of the resected lesion showing focal low-grade dysplasia (*right side of image*).

While use of suction is usually not recommended while pulling the lesion into the FTRD cap, for lesions with significant scarring or ulceration, intermittent suction while applying constant backward tension on the grasping forceps might help with an R0 resection. However, suction should be performed cautiously as it carries a risk of entrapment and injury to adjacent structures or incomplete resection from the cap sliding off-target. Moreover, while using a single channel scope, the presence of grasping forceps in the endoscope itself limits the amount of suction that can be applied.

In summary, this report demonstrates that EFTR using the FTRD may offer an alternative approach for resection of ulcerated or scarred gastric lesions in select cases.

DISCLOSURE

All authors disclosed no financial relationships.

Abbreviations: EFTR, endoscopic full-thickness resection; ESD, endoscopic submucosal dissection; FTRD, full-thickness resection device; LGD, low-grade dysplasia; R0, negative resection margins.

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