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Successful endoscopic full-thickness resection and hand suturing for rectal subepithelial tumors

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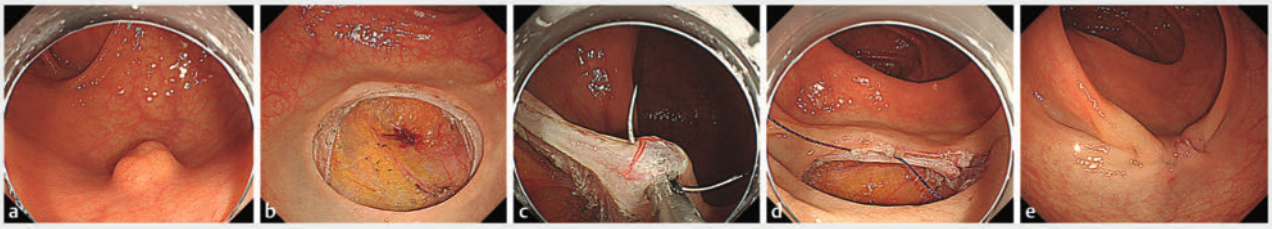


▶ **Fig. 1** Rectal endoscopic full-thickness resection followed by a closure with endoscopic hand suturing (Case 2). **a** The rectal neuroendocrine tumor: Circumferential mucosal incision and submucosal dissection were performed. **b** A full-thickness defect was created. **c** The muscular layers were sutured using the endoscopic hand suturing technique. **d** Muscular layers can be selectively sutured from right to left. The mucosal layers were subsequently continuously sutured from left to right. **e** The full-thickness defect was completely closed.

The efficacy of endoscopic full-thickness resection (EFTR) for a rectal subepithelial tumor is a known fact [1–3]; however, the provision of a secure closure still remains debatable. We report two successful cases of EFTR in which endoscopic hand suturing was employed to close a full-thickness defect.

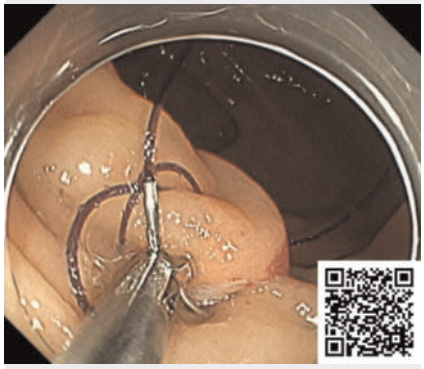
Case 1: A 75-year-old man was referred for the endoscopic diagnosis and treatment of a rectal subepithelial tumor. Endoscopic ultrasonography-assisted fine-needle aspiration revealed a gastrointestinal stromal tumor (GIST). Case 2: A 77-year-old woman with an 8-mm rectal neuroendocrine tumor (NET) was referred to our department (▶ **Fig. 1 a**). EFTR was chosen since endoscopic ultrasonography indicated a suspected continuity between the tumor and the muscularis propria. Removal of lesions from both patients was performed en bloc in a full-thickness fashion (▶ **Video 1**, ▶ **Fig. 1 b**). Subsequently, endoscopic hand suturing was performed using V-loc absorbable barbed sutures (Covidien, Mansfield, Massachusetts, USA) and a flexible needle holder (SutuArt; Olympus, Tokyo, Japan). In Case 1, a mucosal clipping was performed after a muscular-layer suturing by endoscopic hand suturing. In Case 2, a complete muscular-layer suturing was followed by a mucosal suturing in a turned-back fashion due to sufficient residual suture (▶ **Video 1**, ▶ **Fig. 1 c–e**). The procedures required 75 min for excision and 60 min for closure in Case 1; and 19 min for excision and 39 min for closure in Case 2, respectively. Both patients were able to resume their diet on postoperative day 1 and were discharged on postoperative day 3. No postoperative adverse events were observed in either patient. Pathological examination confirmed the complete resection of the low-risk GIST and NET, respectively.

As documented in our report on similar suturing techniques for gastric subepithelial lesions [4], a safe and reliable EFTR for rectal subepithelial tumors is achieved for a full-thickness defect. This technique needs further validation through additional clinical experiences.

Endoscopy_UCTN_Code_TTT_1AQ_2AK

Conflict of Interest

Osamu Goto is tied with Olympus as a paid speaker, and has a history of complimentary use of the flexible needle holder and scissor forceps for research purposes for the said company. Naohiko Akimoto, Yumiko Ishikawa, Eriko Koizumi, Kazutoshi Higuchi, Jun Omori, and Katsuhiko Iwakiri have no COI.



Video 1 Endoscopic hand suturing was performed for the full-thickness defect following the removal of a rectal gastrointestinal stromal tumor (Case 1) and neuroendocrine tumor (Case 2).

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Endoscopy 2024; 56: E864–E865
DOI 10.1055/a-2420-7896
ISSN 0013-726X

Georg Thieme Verlag KG, Rüdigerstraße 14, 70469 Stuttgart, Germany