Gastric endoscopic full-thickness resection (EFTR) requires secure full-thickness defect closure [1]. Here, we report a successful case of EFTR with endoscopic hand suturing that provided a double-layer closure [2–4].

A 72-year-old woman was referred to our department with a 20-mm gastric subepithelial tumor on the lesser curvature of the middle body of the stomach, which was histologically diagnosed as a gastrointestinal stromal tumor (GIST). EFTR was considered preferable because the neural-vascular network in the lesser omentum was preserved. With the patient under general anesthesia, a single port was placed for a 5-mm laparoscope for security. After the overtube had been placed, the lesion was removed en bloc in a full-thickness fashion and was transorally retrieved (▶Fig. 1 a, b; ▶Video 1). Subsequently, double-layer suturing was performed by endoscopic hand suturing (▶Fig. 1 c–e). In a retroflexed view, continuous suturing with a flexible needle holder (Olympus, Tokyo, Japan) was first initiated for the muscular layer with a V-loc absorbable barbed suture (Covidien, Mansfield, Massachusetts, USA). After the muscular layer had been tightly sutured, the remnant suture was cut with scissors forceps (Olympus) and transorally retrieved. Subsequently, the mucosal layer was sutured similarly to the muscular layer.

The procedure duration was 112 minutes, including the resection and suturing times of 34 and 66 minutes, respectively. The patient resumed her diet on postoperative day 3 and was discharged without experiencing any adverse events on postoperative day 10. Histology showed complete resection of a low risk GIST.

Endoscopy_UCTN_Code_TTT_1AO_2AG
Video 1 Full-thickness resection of a gastric gastrointestinal stromal tumor is performed, which is followed by double-layer suturing of the defect using the endoscopic hand suturing technique to continuously suture first the muscular layer and then the mucosa.

Competing interests
The flexible needle holder and the scissor forceps that were used for the endoscopic hand suturing were provided complimentarily by Olympus Co., Ltd.

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Endoscopy
DOI 10.1055/a-1884-0065
ISSN 0013-726X
published online 2022
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Georg Thieme Verlag KG, Rüdigerstraße 14, 70469 Stuttgart, Germany

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