

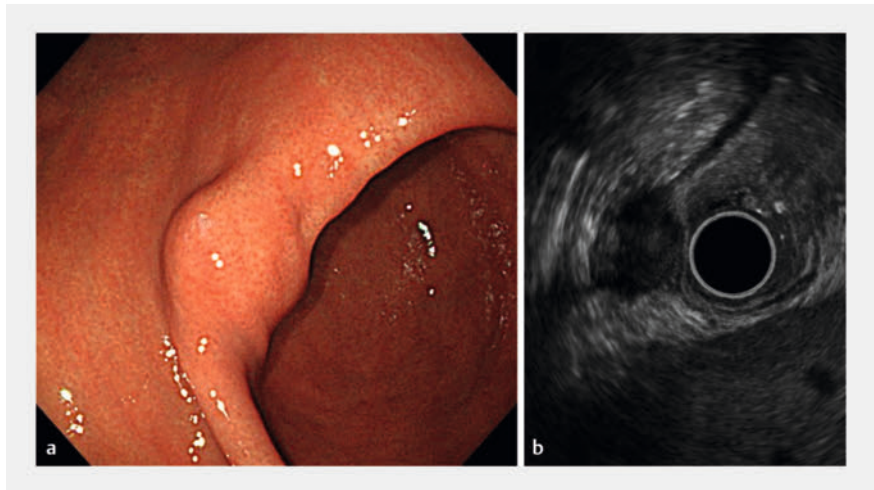
Successful closure of gastric wall defect after endoscopic full-thickness resection using novel anchor pronged clips: a case report

OPEN
ACCESS

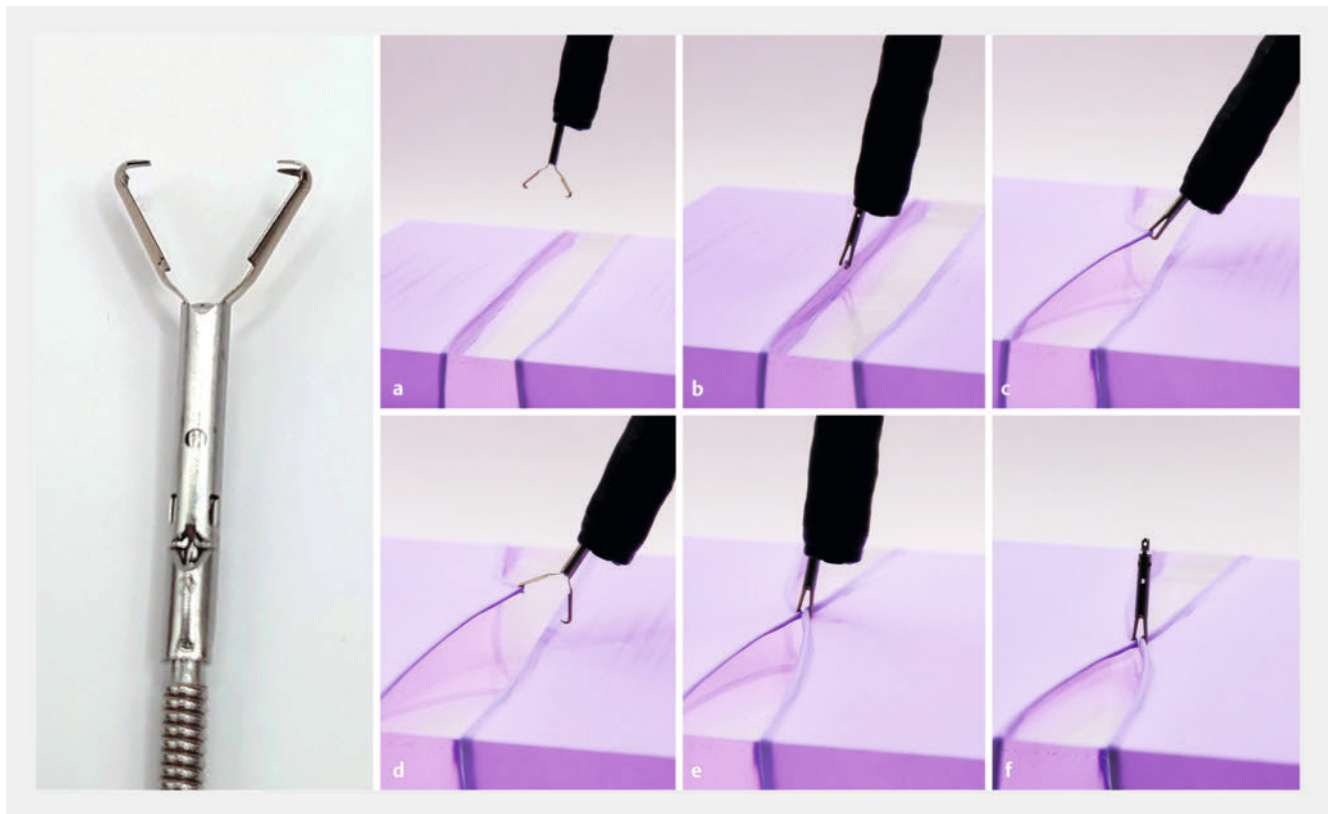
We present the case of a 52-year-old woman who underwent endoscopic full-thickness resection (EFTR) with one port placement for a 20-mm large gastric submucosal tumor originating from the muscularis propria layer (► **Fig. 1**).

EFTR was initiated with a mucosal incision around the entire circumference of the lesion using a DualKnife J (KD-655Q; Olympus, Tokyo, Japan), followed by a full-thickness resection using an ITknife2 (KD-611L; Olympus) in combination with traction provided by a multi-loop traction device (Boston Scientific, Marlborough, Massachusetts, USA) [1].

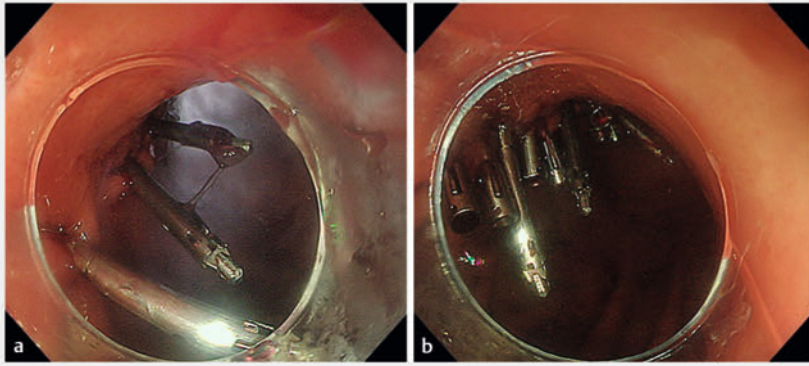
After resection, we employed novel anchor pronged clips (MANTIS Clip; Boston Scientific) to close the large transmural



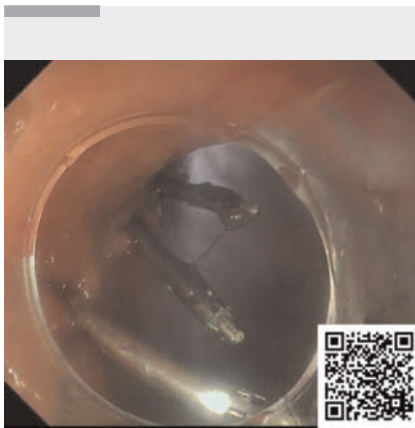
► **Fig. 1** Imaging for the submucosal tumor at the lesser curvature of the gastric angle, originating from the muscularis propria layer. **a** Endoscopic image. **b** Endoscopic ultrasound image.



► **Fig. 2** Closure using novel anchor pronged clips (MANTIS Clips; Boston Scientific, Marlborough, Massachusetts, USA). **a–c** The MANTIS Clip is used to grasp one edge of the defect and pull it toward the opposite edge. **d–f** After tissue approximation, the clip is reopened and then closed over the opposite edge before complete deployment.



► **Fig. 3** Closure of the defect. **a** The large defect after endoscopic full-thickness resection was initially closed by three MANTIS Clips (Boston Scientific, Marlborough, Massachusetts, USA). **b** Complete closure was achieved by reinforcement with re-openable clips.



► **Video 1** Closure of a gastric wall defect after endoscopic full-thickness resection using novel anchor pronged clips.

defect (► **Fig. 2**). The MANTIS Clip was used to grasp one edge of the defect and pull it toward the opposite edge by endoscope manipulation. The anchor prong at the tip of the clip arm prevented the pulled tissue from slipping out when the clip was reopened, allowing it to close over the contralateral edge. We applied three MANTIS Clips for initial closure and reinforced this with re-openable clips to achieve complete closure (► **Fig. 3**, ► **Video 1**). No post-operative complications were observed, and histopathological examination confirmed the diagnosis of schwannoma with R0 resection.

While reports exist on the endoloop-assisted closure method [2] and the over-the-scope clip system (OTSC; Ovesco Endoscopy AG, Tübingen, Germany) [3] for defect closure after EFTR, these methods require a dual-channel endoscope, reinsertion of the endoscope, or some special manipulation. OverStitch (Apollo Endosurgery, Austin, Texas, USA) is expected to provide robust full-thickness sutures, but its use requires technical training [4]. The MANTIS Clip, which functions similarly to a conventional through-the-scope clip, offers simple and effective closure with robust grasping force and tissue apposition capability. This novel closure device can be a viable and effective option for defect closure after EFTR.

Endoscopy_UCTN_Code_TTT_1AO_2AI

Conflict of Interest

Department of Next-Generation Endoscopic Computer Vision is an endowment department, supported with an unrestricted grant from AI Medical Service Inc.

The authors

Hiroya Mizutani¹, Yosuke Tsuji¹, Hiroyuki Hisada², Yoshiyuki Miwa³, Koichi Yagi³, Yasuyuki Seto³, Mitsuhiro Fujishiro²

1 Department of Gastroenterology/
Department of Next-Generation Endoscopic
Computer Vision, Graduate School of
Medicine, The University of Tokyo, Tokyo,
Japan

2 Department of Gastroenterology, Graduate
School of Medicine, The University of Tokyo,
Tokyo, Japan
3 Department of Gastrointestinal Surgery,
Graduate School of Medicine, The University
of Tokyo, Tokyo, Japan

Corresponding author

Yosuke Tsuji, MD

Department of Gastroenterology/
Department of Next-Generation Endoscopic
Computer Vision, Graduate School of
Medicine, The University of Tokyo, Hongo 7-
3-1,
113-8655 Tokyo, Japan
ytsujitky@g.ecc.u-tokyo.ac.jp

References

- [1] Jinushi R, Tashima T, Terada R et al. Effectiveness of a multi-loop traction device for colorectal endoscopic submucosal dissection performed by trainees: a pilot study. *Sci Rep* 2022; 12: 10197. doi:10.1038/s41598-022-14407-3
- [2] Shi Q, Chen T, Zhong YS et al. Complete closure of large gastric defects after endoscopic full-thickness resection, using endoloop and metallic clip interrupted suture. *Endoscopy* 2013; 45: 329–334. doi:10.1055/s-0032-1326214
- [3] Guo J, Liu Z, Sun S et al. Endoscopic full-thickness resection with defect closure using an over-the-scope clip for gastric subepithelial tumors originating from the muscularis propria. *Surg Endosc* 2015; 29: 3356–3362
- [4] Pawlak KM, Raiter A, Kozłowska-Petriczko K et al. Optimal endoscopic resection technique for selected gastric GISTs. The endoscopic suturing system combined with ESD – a new alternative? *J Clin Med* 2020; 9: 1776

Bibliography

Endoscopy 2023; 55: E1234–E1235

DOI 10.1055/a-2209-0076

ISSN 0013-726X

© 2023. The Author(s).

This is an open access article published by Thieme under the terms of the Creative Commons Attribution License, permitting unrestricted use, distribution, and reproduction so long as the original work is properly cited.
(<https://creativecommons.org/licenses/by/4.0/>)

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

