

An elastic traction device for facilitating endoscopic submucosal dissection of a submucosal tumor at the cardia

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A common challenge encountered during endoscopic submucosal dissection (ESD) is the lack of traction required to achieve an adequate submucosal view of the dissection area and to avoid mucosal and muscle layer injury, perforation, and bleeding [1, 2]. It is even more challeng-

ing to perform ESD for tumors located at the cardia of the stomach. Herein, we report a case in which an elastic traction device (Micro-tech, Nanjing, China), consisting of a rotatable tissue clip and an elastic band in the shape of a figure 8 attached to the arm of the clip, was used to improve the intraoperative view and facilitate submucosal tumor (SMT) resection at the cardia. We call this device an “8-shaped band” (► Fig. 1).

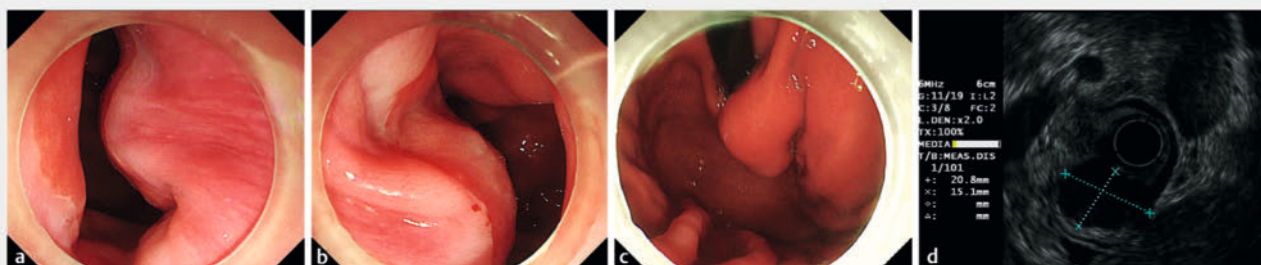
A 55-year-old man underwent ESD for an SMT located at the cardia (► Fig. 2, ► Video 1). Following submucosal injection, the proximal mucosa at the tumor edge was dissected and standard submucosal dissection was performed with an insulated-tip knife (Olympus, Tokyo, Japan). With further dissection, it was difficult to determine the relationship

between the tumor root, surface mucosa, and muscular layer (► Fig. 3). Therefore, the clip-ring traction device was attached to the tumor root. Then, another clip was hooked to the second loop of the 8-shaped band and was in turn attached to the anterior wall of the gastric corpus. Finally, the target tumor was pulled, and an adequate view of the tumor root was achieved (► Fig. 4). En bloc resection was achieved without adverse events (► Fig. 5). The clip-ring was removed with forceps to retrieve the resected tumor.

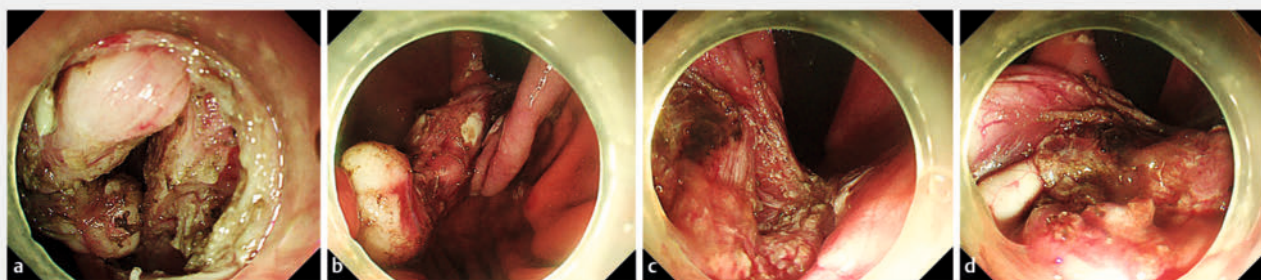
During the late stage of ESD for an SMT, the mucosa begins to shrivel and the tumor is displaced. The presented 8-shaped band enables traction to be applied in any direction and repeated. Furthermore, traction strength can be adjusted using a



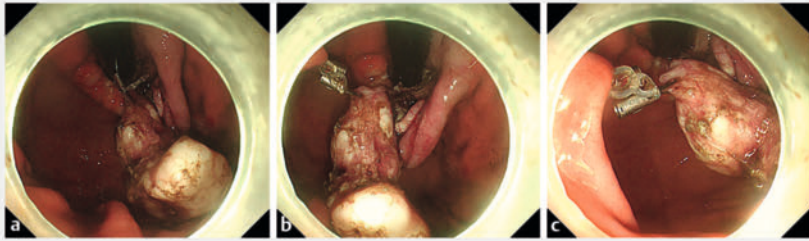
► Fig. 1 The “8-shaped band”.



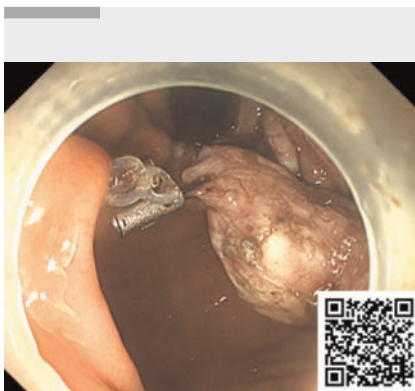
► Fig. 2 Submucosal tumor located at the cardia. **a** Submucosal lesion causing protrusion at the 3 o'clock position of the cardia. **b** Smooth mucosal surface of the lesion, consistent with normal gastric mucosa. **c** The lesion was observed under a retroflexed view of the gastroscope. **d** Endoscopic ultrasound image of the 20.8 × 15.1-mm lesion, which originated from the muscularis propria and demonstrated a uniform hypoechoic appearance.



► Fig. 3 With continuing dissection, adequate traction was difficult to maintain.



► **Fig. 4** The target tumor was pulled and an adequate view of the tumor was achieved following the deployment of the 8-shaped band device. **a** The clip-ring traction device was attached to the tumor root. **b** Another clip hooked the second loop of the band and was then attached to the anterior wall of the gastric corpus. **c** The target tumor was pulled, and an adequate view of the tumor root was achieved.



► **Video 1** Endoscopic submucosal dissection (ESD) for an irregularly shaped leiomyoma located at the cardia was performed using an elastic 8-shaped traction device.

gas control without the need for endoscope reinsertion. In conclusion, this novel elastic traction device can facilitate ESD for SMTs, especially for tumors located at the cardia.

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Conflict of Interest

The authors declare that they have no conflict of interest.

‡ Contributed equally to this article

The authors

Yaxuan Cheng^{1‡}, Enqiang Linghu^{1‡}, Bi Ya-Wei¹, Song Su¹, Ningli Chai¹

¹ Gastroenterology, Chinese PLA General Hospital First Medical Center, Beijing, China

Corresponding author

Ningli Chai, MD

Department of Gastroenterology, First Medical Center, Chinese PLA General Hospital, 100853 Beijing, China
chainingli@vip.163.com

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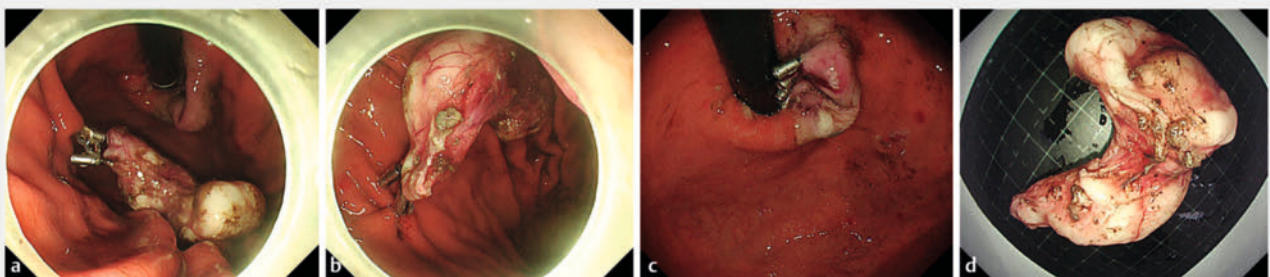
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► **Fig. 5** En bloc resection was performed. **a** The clip-ring was cut with forceps to retrieve the resected specimen. **b** The specimen was resected completely, and the resected specimen was kept temporarily in the stomach cavity. **c** Closure of the mucosal defect using endoscopic clips. **d** Macroscopic appearance of the intact specimen.