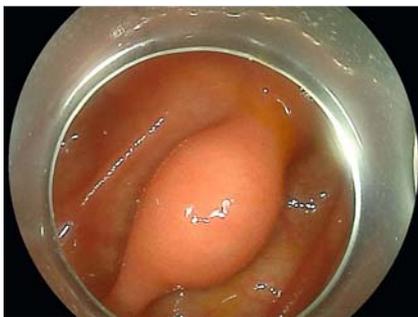


Traction-assisted endoscopic full-thickness resection for a colonic submucosal tumor

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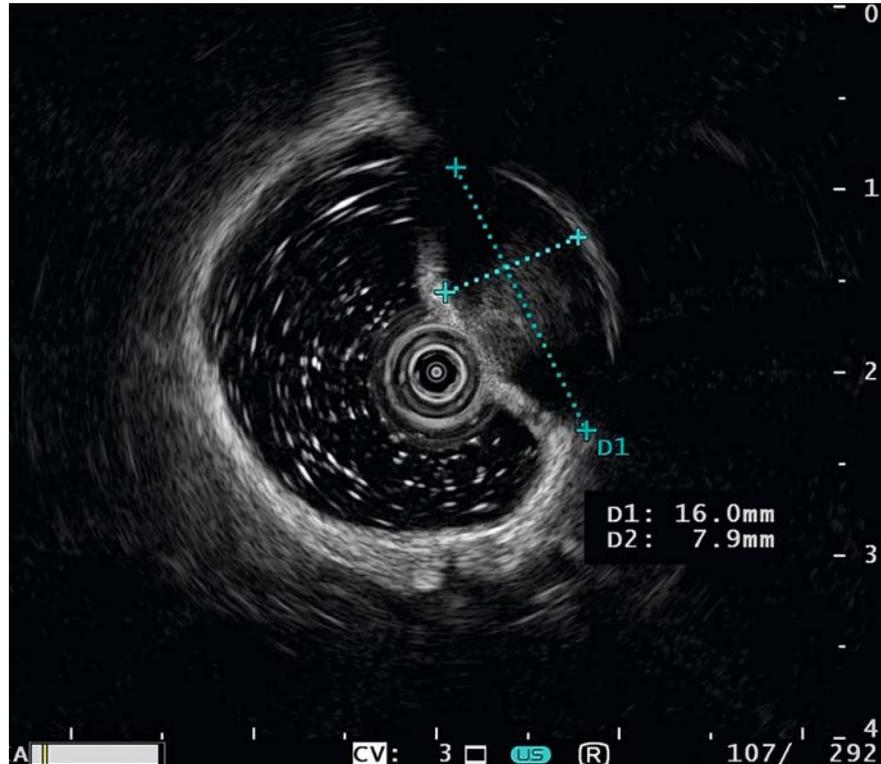


► **Fig. 1** Photograph of the novel clip-with-spring device, which consists of a metal clip and a spring fixed between the two claws.



► **Fig. 2** Endoscopic view of the protruding lesion in the cecum.

Endoscopic full-thickness resection (EFTR) has been demonstrated to be feasible and safe in treating colonic submucosal tumors [1]; however, the EFTR procedure is challenging. Adequate tension and good exposure of the tumor and the deep seromuscular layer are very important for safe and effective resection during colonic EFTR. Here we introduce a novel clip-with-spring device for internal traction during colonic EFTR. The device consists of a metal clip with a spring fixed between the claws (► **Fig. 1**).



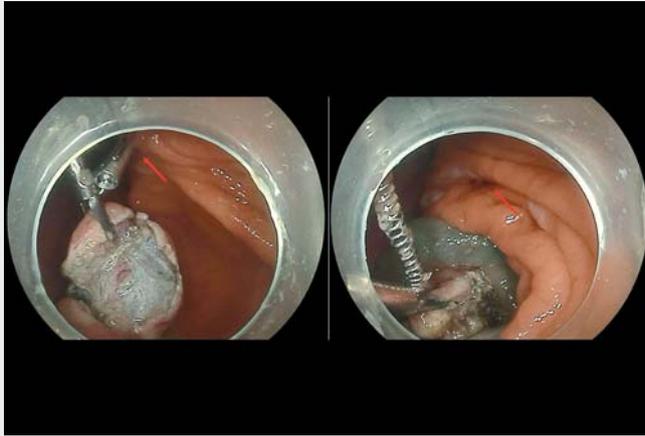
► **Fig. 3** Endoscopic ultrasound image showing a hypoechoic mass, measuring 16.0×7.9 mm, originating from the third layer.

This can be easily inserted through the channel and used at any location. The traction direction can be adjusted intraoperatively without withdrawing the endoscope.

A 48-year-old man presented with an oval protruding lesion in the cecum (► **Fig. 2**). Endoscopic ultrasound revealed a hypoechoic mass, measuring 16.0×7.9 mm, originating from the third layer (► **Fig. 3**). During EFTR, the clip-with-spring was anchored to the lesion surface after mucosal incision. Traction was first applied in the proximal direction to facilitate the resection of the distal edge. As the procedure was progressing, resection of the proximal edge became difficult again. The ring was removed from the first site and re-anchored to a distal site (► **Video 1**), consequently

making the resection of the proximal edge easy and enabling successful en bloc resection (► **Fig. 4**). The defect was closed by the purse-string method. The patient was discharged after 5 days, without experiencing any complications. The lesion was histologically confirmed as being a schwannoma (► **Fig. 5**).

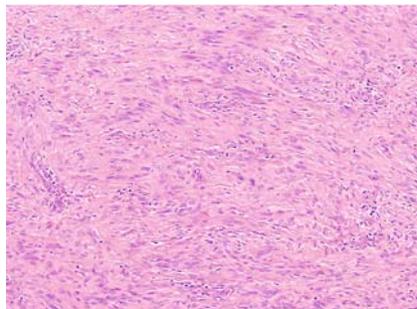
Several traction methods have been reported to provide assistance with endoscopic submucosal dissection for colonic superficial neoplasms [2]; however, there have been no reports of a traction strategy in EFTR for colonic submucosal tumors. To the best of our knowledge, this is the first report of internal traction for colonic EFTR, particularly with adjustable countertraction. The novel device may offer good prospects in improving the safety and efficacy of colonic EFTR.



▶ Video 1 The procedure of endoscopic full-thickness resection of a cecal submucosal tumor assisted by the novel clip-with-spring device (red arrows indicate the first anchoring site).



▶ Fig. 4 Macroscopic appearance of the completely resected specimen.



▶ Fig. 5 Histological appearance showing spindle cells within a neurofibrillary background, consistent with a schwannoma.

Bibliography

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Competing interests

The authors declare that they have no conflict of interest.

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