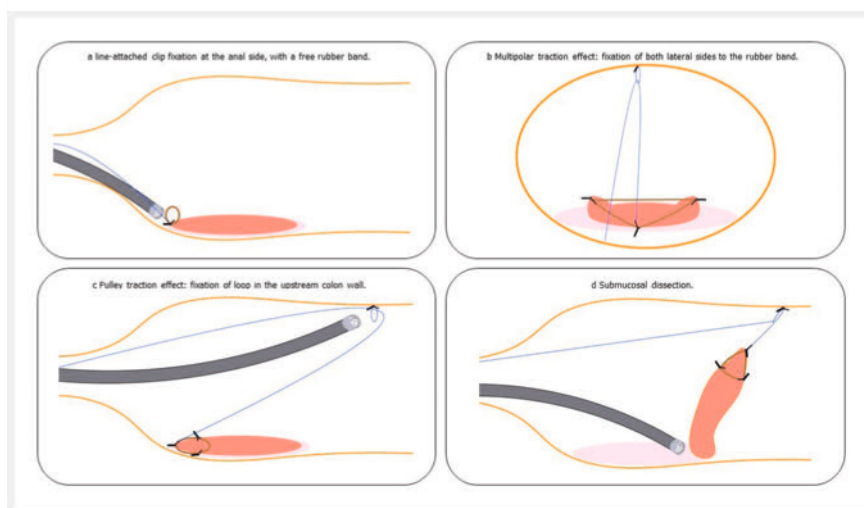


Multipolar traction pulley method combined with underwater endoscopic submucosal dissection for a large rectal laterally spreading tumor



Endoscopic submucosal dissection remains challenging, even with traction [1] to assist the procedure [2]. To overcome the decline in traction force as the dissection proceeds, an adaptive traction device, capable of being tightened to increase traction during the procedure, has shown interesting results [3]. Pulley methods have been described for early-stage gastric cancer [4]. However, since this first evaluation, no further study has been made in rectal and colonic locations.

We report the case of an endoscopic resection in a 73-year-old woman with a giant, rectal, granular mixed-type, laterally spreading tumor. We faced two difficulties. First, keeping good submucosal exposure without moving the patient, who was obese. Second, maintaining effective traction throughout the resection of this long lesion, which measured 10 cm from the oral to anal end. We decided to combine underwater dissection and multipolar traction with the pulley method. As shown in ► **Video 1**, after complete circumferential incision and trimming, we fixed a clip with a line attached and a rubber band to the anal side of the lesion (► **Fig. 1**). The rubber band was then fixed at both lateral sides of the lesion to obtain a multipolar traction effect. A line loop was passed over the original line, grasped with a clip, and fixed in the upstream colonic wall, beyond the oral edge of the lesion to maintain good traction during the entire procedure. Finally, we attached a surgical forceps to the line externally in order to apply constant weight. Dissection was performed with underwater saline immersion to counter unfavorable gravity effects. Pathology analysis revealed complete R0 resection of a 95 × 85 mm adenoma with intramucosal adenocarcinoma. The multipolar traction pulley method combined with underwater resection



► **Fig. 1** Schematic representation of submucosal dissection of a rectal laterally spreading tumor using multipolar traction with the pulley method. **a** Line-attached clip fixation at the anal side, with a free rubber band. **b** Multipolar traction effect: fixation of the rubber band at both lateral sides. **c** Pulley traction effect: fixation of a loop in the upstream colonic wall. **d** Submucosal dissection.

could provide an additional traction tool to facilitate the endoscopic submucosal dissection procedure. Further studies are needed.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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► **Video 1** Multipolar traction pulley method combined with underwater endoscopic submucosal dissection for a large, rectal, laterally spreading tumor.

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