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Entire traction using clip-and-nylon ring to facilitate endoscopic submucosal dissection of a laterally spreading tumor with fibrosis in the rectum

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**Abbreviations list:**
endoscopic submucosal dissection (ESD)
laterally spreading tumor (LST)

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**Author contributions:** WD: Roles/Writing - original draft
MW: Roles/Writing - original draft
XZ: Project administration and supervision
ZD: Project administration and supervision
Abstract

A 78-year-old woman with hematochezia underwent a colonoscopy and found a 2 × 2-cm laterally spreading tumor (LST) in the rectum, 3 cm from the anus. Because of the risk related to anus preservation and the potential operative trauma, the patient refused surgery and was referred for ESD treatment. Here, we applied a novel entire traction method to deal with this subset of tumors.

Dear Editor,

Rectal neoplasm with submucosal fibrosis is an extremely challenging target for endoscopic submucosal dissection (ESD). It is the major causative factor for incomplete resection and adverse events (1, 2), which is attributable to the impossible separation of submucosa from muscularis and hence inaccurate identification of the dissection line (3, 4). Here, we applied a novel entire traction method to deal with this subset of tumors.

A 78-year-old woman with a 2 × 2-cm laterally spreading tumor (LST) in the rectum, 3 cm from the anus (Figure 1a) was referred for ESD treatment. The patient refused surgery because of the risk related to anus preservation and the potential operative trauma. Accordingly, a submucosal injection was administered under the lesion, and the elevation sign in the middle portion of the lesion was found to be negative (Figure 1b). After circumferentially incising the mucosa, submucosal adhesion became evident, and the submucosal dissection was extremely difficult (Figure 1c). Therefore, a remedial entire traction method was applied, wherein a nylon ring was inserted into the rectum and fixed to the mucosal flaps with four clips oriented in different directions. As the nylon ring was tightened, the lesion was completely everted (Figure 1d). On fully exposing the submucosa, the lesion was efficiently resected, and the resulting wound was perfect (Figure 1e). After removing the clips from the lesion, the specimen was intact (Figure 1f).
The conventional traction methods only expose the submucosa locally from a single or several points (5, 6). Our entire traction method provides omnidirectional tension, facilitating the full exposure of the submucosa. Moreover, the tightness of the nylon ring was adjustable or customizable to avoid excessive muscle-lifting effect that can cause injury or even perforation. Considering that no special equipment were required for this procedure, the entire traction strategy used presently was simple, efficient, and safe for ESD.

References
Figure legends

Figure 1. Endoscopic views of the entire traction-assisted ESD using a combination of clips and nylon ring.

a. A 2 × 2-cm laterally spreading tumor (LST) in the rectum, 3 cm from the patient’s anus.

b. The middle portion of the lesion was difficult to uplift via submucosal injection.

c. After circumferential incision of the lesion, it was difficult to get into the submucosa owing to the evident adhesion of the submucosa.

d. When the nylon ring was fixed to the mucosal flap and tightened along using four clips by gathering them together, the submucosal layer was clearly exposed in virtue of the valgus mucosal flap.

e. The postoperative wound was displayed, showing an intact muscularis propria.

f. The completely excised specimen.