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A novel entire traction method with clip-anchored nylon ring facilitating endoscopic submucosal dissection (ESD) of early gastric cancer

Running title: A novel entire traction method

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endoscopic submucosal dissection (ESD)

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Dear Editor,

As the primary treatment for early gastrointestinal neoplasms, endoscopic submucosal dissection (ESD) is still technically challenging and may cause severe complications such as bleeding and perforation (1, 2, 3). Adequate submucosal exposure is the most critical technology to reduce complications (4). Here we report a novel entire traction method to facilitate safe and efficient ESD.

A 48-year-old woman with a high-grade intraepithelial neoplasia of the gastric antrum (a) was referred for ESD treatment. After circumferential incision of the mucosal layer, the submucosal dissection was greatly affected because the mucosal flaps contracted and covered the surgical field (b). Thus, the remedial entire traction method was applied to completely expose the submucosal layer. A nylon ring was inserted into the stomach and fixed to the mucosal flaps using four clips in four different directions. As the nylon ring was tightened, the lesion was completely everted (c). With full exposure of the submucosa, the lesion was very efficiently resected within 4 minutes and the wound was perfect (d). The resect specimen was retracted with nylon ring and clips in place (e). As the clips were carefully removed from the lesion, the specimen was presented intact with complete marking dots (f).

Although many conventional traction methods can assist in exposing the submucosal layer (5), these strategies only locally expose the submucosa from single or a few points (6). In contrast, the entire traction technique can comprehensively expose the submucosa thus providing clear global surgical field especially for large lesions. In addition, the tightness of the nylon ring can be adjusted flexibly according to the procedure in order to avoid excessive muscle lifting effect causing injury even perforation. The entire traction strategy is easy and safe independent of special equipment, which greatly simplifies the operation and improves the efficiency and safety of ESD.
References


Figure 1. Endoscopic views of the entire traction-assisted ESD with clips combined with nylon ring.

a. A 2.0×1.0cm IIa lesion in the lesser curvature of the gastric antrum.

b. After circumferential incision of the lesion, it was hard to get into the submucosa due to the contraction of the mucosal flap.

c. With the nylon ring being fixed to the mucosal flap using four clips, when the nylon ring was tightened along with four clips gathering together, the submucosal layer was clearly exposed in virtue of the valgus mucosal flap.

d. Postoperative wound.

e. The resected specimen linked with nylon ring and clips.

f. The unfolded specimen with complete marking dots.