

The effect of making one plus one greater than two: endoscopic double snare resection of an esophageal leiomyoma ▶

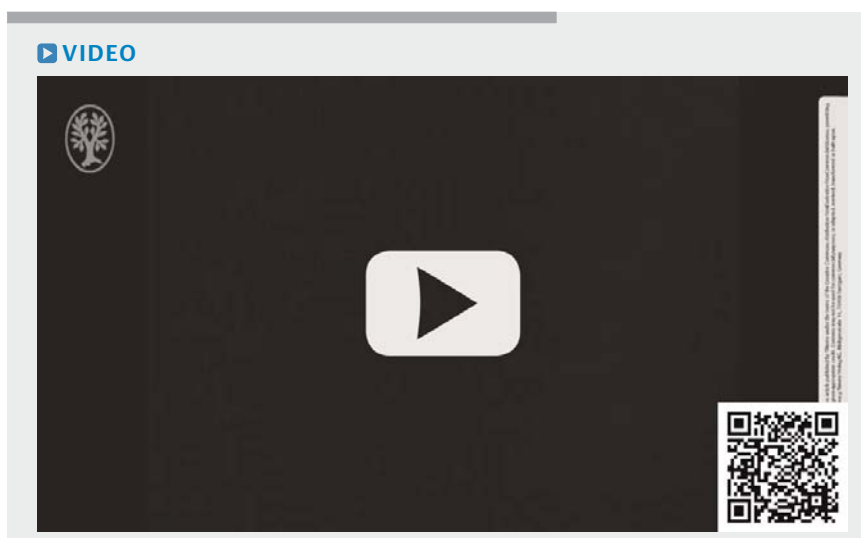


Introduction

Endoscopic submucosal dissection (ESD) is established as the standard en bloc resection method for superficial esophageal tumor, including leiomyoma [1, 2]. However, it comes with the drawback of significant technical requirements, long procedure times, and potential adverse complications [3]. Because of this, we established a novel double snare resection (DSR) technique to effectively accomplish en bloc resection of a small esophageal leiomyoma (▶ **Video 1**).

Case report

A 39-year-old man was referred for endoscopic treatment of a submucosal tumor in the lower esophagus. The tumor, which had a hemispherical appearance (▶ **Fig. 1a**), was found on endoscopic ultrasound to originate from the mucosal muscularis (▶ **Fig. 1b**). As the transparent cap covered endoscope holding a pre-anchored snare entered the esophagus, another snare was inserted through the scope's channel in order to grasp the tumor (▶ **Fig. 1c**). After the tumor was lifted and shaped into a "pedicle poly" with the inner snare, the outer pre-anchored snare was released from the scope and completely enveloped the base of the shaped tumor beneath the inner snare (▶ **Fig. 1d**). As the outer snare gradually tightened and firmly curbed the root, the tumor was fully excised using an electrosurgical current in several seconds, leaving a clean surgical wound containing undamaged submucosal vessels (▶ **Fig. 1e**). The tumor being held by the inner snare during the whole procedure was easily retracted and shown to be intact (▶ **Fig. 1f**). Histology confirmed that the resected specimen was a leiomyoma (▶ **Fig. 2**).



▶ **Video 1** Double snare resection (DSR) technique for complete removal of an esophageal leiomyoma. The in vitro demonstration of sequential assembly of two snares outer and inner the endoscope respectively. A snare was inserted through single-channel endoscope to precisely capture the tumor and shape it into a "pedicle poly" in the esophagus. Another snare being pre-anchored over the transparent cap's head was promptly released from the scope to firmly curbed the tumor from its root. As the outer snare being energized, the tumor was fully resected by electrocautery in several seconds. After the specimen inside the inner snare was easily retracted, a clean surgical wound with smooth submucosal layer was displayed.

Conclusions

With the DSR technique, the inner snare was placed in a polypoid shape, facilitating complete resection of the tumor with the outer snare. Unlike traditional endoscopic submucosal dissection, which requires accurate submucosal injection and complex dissecting skills [4], the DSR technique is simple, rapid, and safe. Nevertheless, this technique may be suitable only for superficial lesions without muscle invasion or irregular branches.

Competing interests

The authors declare that they have no conflict of interest.

The authors

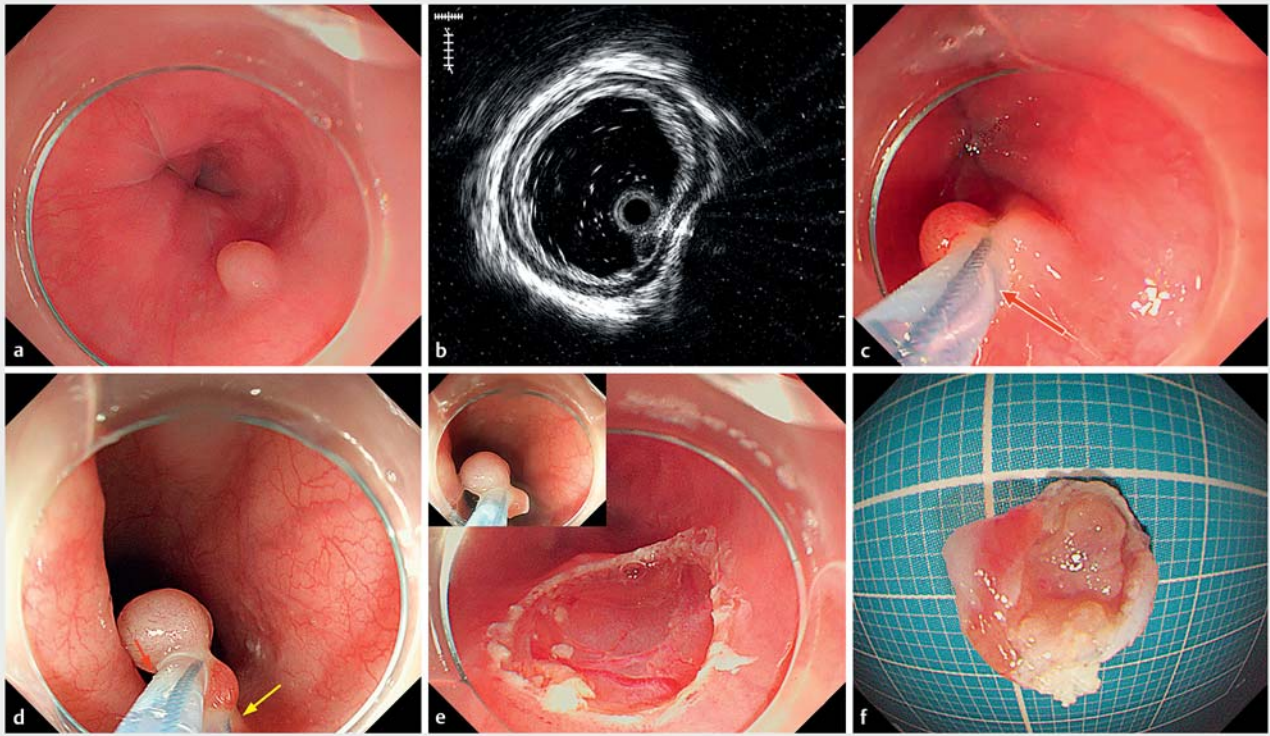
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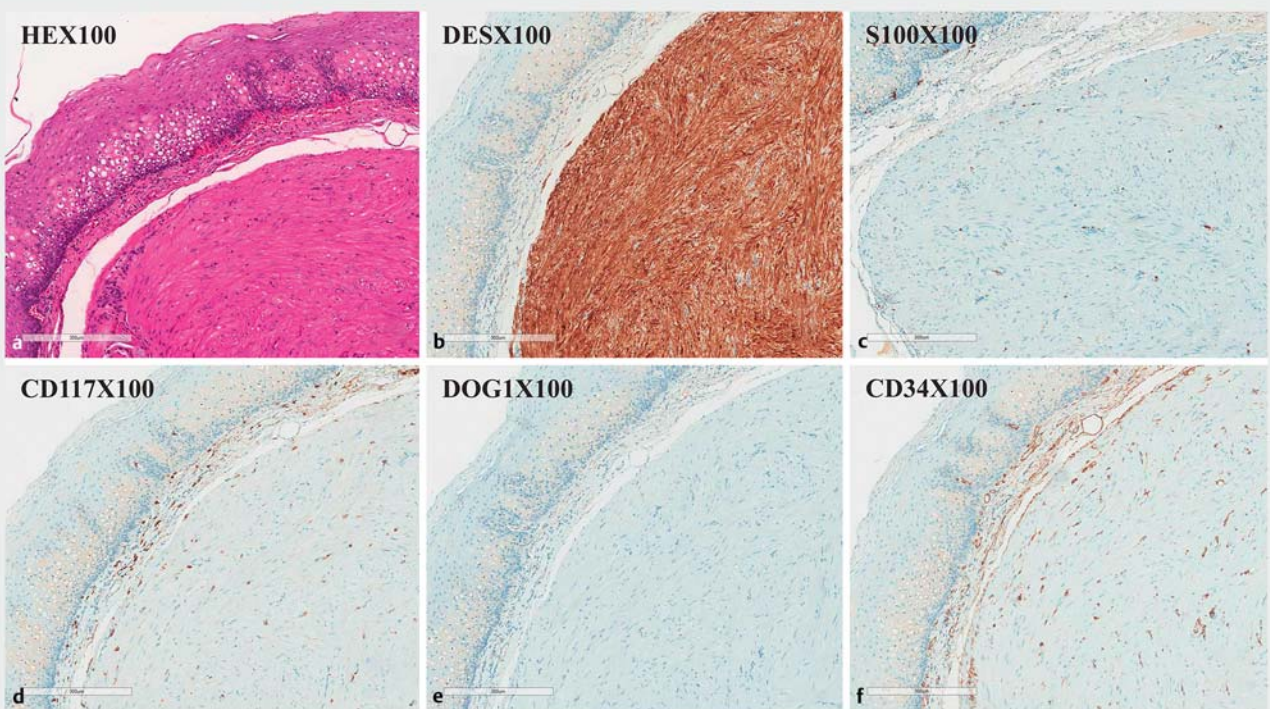
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► **Fig. 1** Endoscopic treatment of an esophageal leiomyoma using a novel double snare resection (DSR) technique. **a** Gastroscopy revealed a hemispherical submucosal lesion (arrow) in the lower esophagus 38 cm from the incisor. **b** The tumor originated from the muscularis propria and had a homogeneous hypoechoic appearance. **c** A snare (red arrow) was advanced from the endoscopic channel to capture and precisely shape the tumor. **d** Another pre-anchored outer snare (yellow arrow) tightly and completely enveloped the root of the leiomyoma. **e** A clean surgical wound containing intact submucosal vessels. **f** The resected lesions with complete capsule.



► **Fig. 2** Histologic images confirming that the resected lesion was a leiomyoma.

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