Double-tunnel method for treatment of colorectal lesions with severe fibrosis with endoscopic submucosal dissection

Endoscopic submucosal dissection (ESD) for gastrointestinal lesions enables en bloc resection with tumor-free margins and is not limited by the lesion size or location. However, en bloc removal of colorectal lesions with severe fibrosis is difficult and requires a longer time [1, 2]. We report the successful resection of an early rectal tumor by colorectal ESD with a new method: double-tunnel ESD.

A 68-year-old man was referred to our hospital for treatment of a large sub-protruded rectal lesion measuring about 60 mm in diameter (Fig. 1a). He underwent ESD, which was performed using a dual knife (KD-650U; Olympus, Tokyo, Japan), with the patient under deep sedation.

Our plan to achieve en bloc resection of this large sub-protruded lesion, a type of lesion that often has severe fibrosis or displays the muscle-retracting sign during ESD [3], was first to open two different tunnels on each side of the severe fibrosis from the anal side of the lesion (Fig. 1b). This technique allows good traction to be maintained and an appropriate dissection line to be identified, even in the presence of severe fibrosis. Subsequently, the two tunnels were connected (Video 1). Finally, mucosal and submucosal dissections were performed from both sides to open the lesion from the lower side against gravity (Fig. 1c). After this, the lesion was completely resected en bloc without any complications (Fig. 1d).

The opened specimen revealed submucosally invasive carcinoma, with negative margins, measuring 59 × 50 mm (Fig. 2).

Endoscopy using the double-tunnel method can achieve reliably efficient and safe resection of colorectal lesions with severe fibrosis or displaying the muscle-retracting sign.

Competing interests

None

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Colorectal endoscopic submucosal dissection with the double-tunnel method is used to resect a lesion with severe fibrosis efficiently and safely because good traction is maintained and an appropriate dissection line can be identified.