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Pre-traction-assisted endoscopic submucosal dissection of a rectal neuroendocrine tumor

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Abstract

Conventional ESD may not ensure complete resection of submucosal tumors, as the dissecting layer behind the tumor is difficult to see. To conquer this dilemma, we present a novel pre-traction strategy using clips and rubber-band, which facilitate ESD removal of rectal NETs.

Title page

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Written informed consent was obtained from the patient to publish this report in accordance with the journal's patient consent policy.

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Author's contribution:

Qin, Lu put forward the idea and wrote the manuscript. Wei-hui, Liu performed the ESD and revised the manuscript.

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Text

Endoscopic submucosal dissection (ESD) is an effective treatment for rectal neuroendocrine tumors (NETs)[1] , but conventional ESD may not ensure complete resection of these submucosal tumors, as the dissecting

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layer behind the tumor is difficult to see [2]. To conquer this dilemma, we present a novel pre-traction strategy using clips and rubber-band, which facilitate ESD removal of rectal NETs (Video.1).

A 34-year-old male was diagnosed with a 6-mm NET in the rectum via colonoscopy (Fig.1a) and endoscopic ultrasound (Fig.1b) and referred for endoscopic treatment. As a small submucosal tumor invading into the deep submucosa, it might be difficult to make mucosal flap and get into the submucosal layer for dissection using the conventional ESD. To guarantee R0 resection, we employed the pre-traction device before the ESD. After the first endoclip carrying rubber band was attached to the anal side of the tumor, a second endoclip grasped the rubber band and fixed it to the oral side of the NET (Fig.2a). With the tension provided by the pre-traction device, rapid incision of the mucosa was achieved to establish a beautiful mucosal flap. As the submucosal layer was well exposed, the efficient and safe dissection was performed under clear vision (Fig.2b). Finally, the specimen was retrieved with the foreign body forceps. Both endoscopic en bloc resection and histologic complete resection of the lesion was achieved without complications (Fig.2c,2d).

Different from the traditional traction strategies[3], which are passively used when the ESD encounters the difficulty of unreachable submucosa, the pre-traction technique is actively introduced to permit consistent exposure of the submucosal layer during the whole operation. As the pre-traction method is easy to manipulate and requires no special equipment, it may be applied routinely to facilitate ESD of rectal NETs.

Conflict of Interest

All authors have no conflicts of interest or financial ties to disclose.

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Figure legend

Figure 1. Images of the submucosal lesion in the rectum. **a, b,**Endoscopy and endoscopic ultrasound showed a rectal lesion originating from the submucosa layer (indicated by the arrow).

Figure 2. Brief process of rubber band pre-traction-assisted endoscopic submucosal dissection. **a,** Pre-traction system was formed using the rubber band and two endoclips (arrow). **b,**Efficient incision of the mucosa was achieved by only one cutting under pre-traction provided tension. **c,** Neat postoperative wound was displayed with muscularis propria. **d,** The specimen with negative horizontal and vertical borders was en bloc resected.

Video legend

Video 1. The rectal neuroendocrine tumors develop in a submucosal tumor (SMT)-like way, conventional ESD may not guarantee R0 resection. We employed the pre-traction device before the ESD. Under the great tension from the pre-traction device, a circumferential mucosal incision was efficiently performed, the submucosal surgical space was fully exposed and thick blood vessels could be seen as well. Subsequently, the lesion was quickly dissected underwater just above the muscle layer. Finally, the surgical wound was intact without bleeding or perforation, and the specimen with negative horizontal and vertical borders was en bloc resected.

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