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Traction by dental floss loop for adequate submucosal dissection depth in a rectal neuroendocrine tumor

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The European Society of Gastrointestinal Endoscopy (ESGE) recommends modified EMR (mEMR) as the first option for removing rectal neuroendocrine tumors (rNETs), since mEMR was shown to be superior to endoscopic submucosal dissection (ESD) for histological complete resection [1,2]. In rNETs, deep mucosa and submucosa are involved, and therefore adequate submucosal dissection depth is essential to achieve complete resection. A loop of dental floss has been previously reported to enable proper access to the submucosal layer and could potentially be useful for achieving deeper resection in ESD [3]. We present a case of a small rNET successfully treated by loop-traction-assisted ESD (▶ **Video 1**).

A subepithelial lesion 4 mm in size was detected in the lower rectum of a 38-year-old woman. ESD was decided on based on the suspected diagnosis of neuroendocrine tumor. After circumferential mucosal incision, a loop made from dental floss was fixed to the anal edge of the resected lesion and to the opposite rectal wall using clips to provide traction. Dissection close to the muscularis propria was achieved without complications. Histological analysis showed a neuroendocrine tumor (grade 1) with tumor-free lateral and vertical margins (▶ **Fig. 1**). Adequate submucosal dissection depth was achieved with a 710-µm distance from the lesion edge to the vertical resection margin.

To achieve adequate submucosal resection depth, EMR with ligation utilizes suction, which has poor control on horizontal and vertical margins; where submucosal fibrosis is substantial, it may fail. Hybrid ESD is like conventional ESD: circumferential incision and trimming are still needed, and the resection depth would not be improved over traditional EMR unless proper traction is used [4]. We have described how loop traction could be useful in improving the dissection depth of ESD, which could in turn improve the outcome of patients with rNETs.

In conclusion, traction-assisted ESD which enables deeper dissection could be effective in the management of rNETs. Further comparative studies are warranted.

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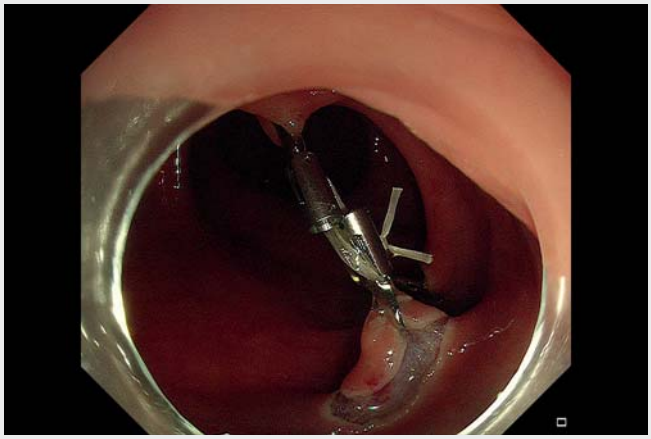
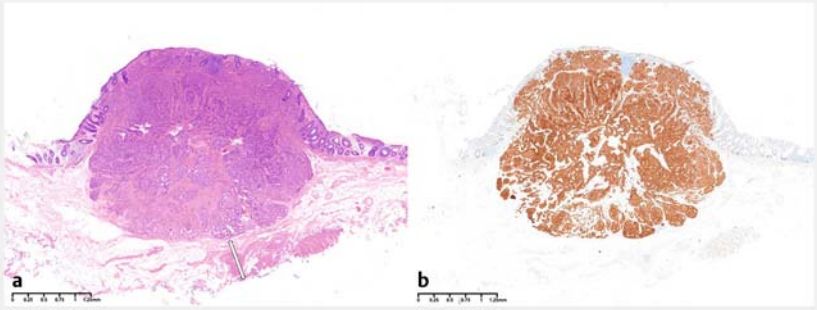


Video 1 Traction-assisted endoscopic submucosal dissection using a dental floss loop for the removal of a small rectal neuroendocrine tumor.



▶ **Fig. 1** Small rectal neuroendocrine tumor in a 38-year-old woman: histological assessment of specimen resected by loop-traction-assisted endoscopic submucosal dissection. **a** The resected specimen showed a tumor-free horizontal and vertical margin with a distance of 710 µm from the lesion edge to the vertical resection margin. **b** Tumor tissue was outlined by immunohistochemical staining using synaptophysin.

Competing interests

The authors declare that they have no conflict of interest.

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