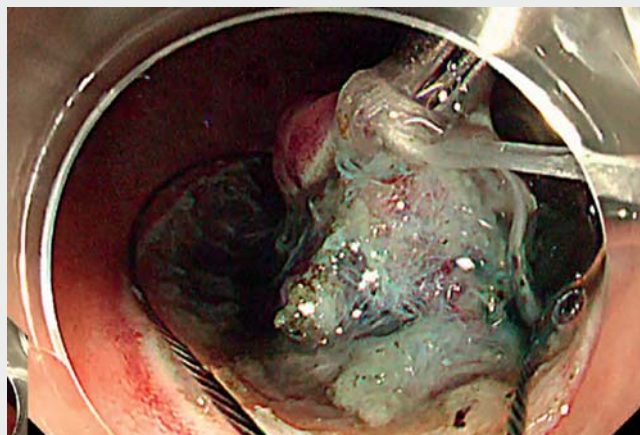
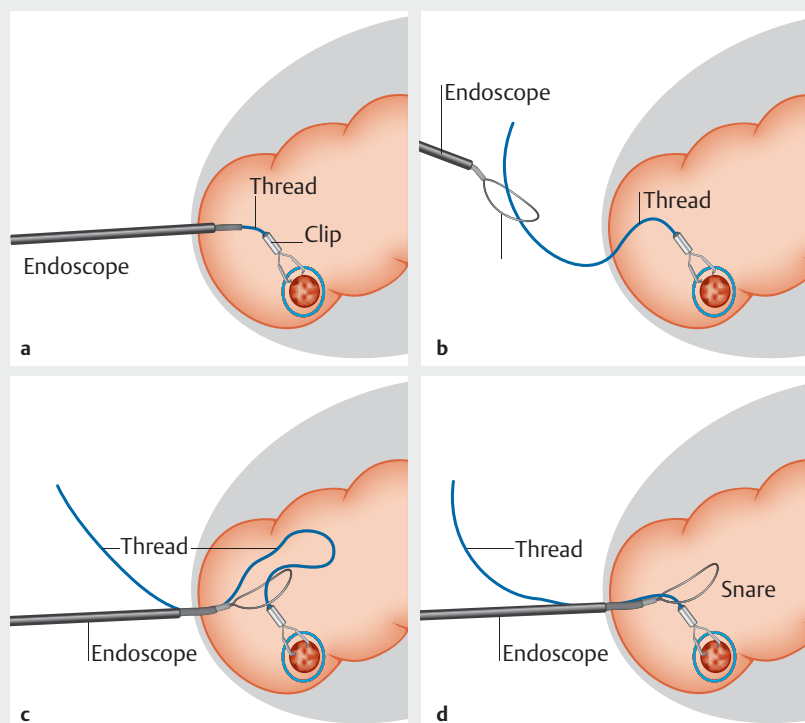


Traction-assisted hybrid endoscopic submucosal dissection for small rectal neuroendocrine tumors

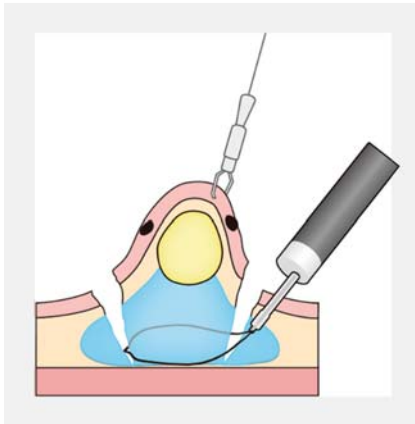
Endoscopic resection is conducted as a first-line treatment for localized small rectal neuroendocrine tumors (NETs) [1–3]. However, NETs involve the deep mucosa and submucosa; a sufficient tumor-free vertical margin is required for R0 resection in endoscopic treatment. Recently, we developed the traction-assisted hybrid endoscopic submucosal dissection (ESD) procedure for gastrointestinal tumors [4]. Herein, we present a case of a small rectal NET successfully treated by traction-assisted hybrid ESD (► **Video 1**). A subepithelial lesion 10 mm in size was detected in the rectum. Endoscopic ultrasonography revealed that the tumor was located within the submucosal layer. Therefore, traction-assisted hybrid ESD using a multifunctional snare (SOUTEN; Kaneka Medix, Tokyo, Japan) was performed for this lesion. Marking dots were made by coagulation with the distal tip of the SOUTEN. Hyaluronic acid was injected into the submucosal layer around the lesion using an injection needle. Thereafter, circumferential mucosal incision and trimming of the submucosal layer were performed using the tip of the SOUTEN [5]. Subsequently, a clip-with-thread was placed at the anal mucosal flap of the lesion (► **Fig. 1 a**). The thread was passed through a ring of the snare inserted through a biopsy channel (► **Fig. 1 b**). After endoscope insertion, the thread was straightened (► **Fig. 1 c, d**). With the snare open, the thread was pulled until the lesion was adequately elevated to snare the deep submucosal layer (► **Fig. 2**). The cutting mode was selected for snare resection to avoid hypercoagulation of the submucosa below the tumor cells. En bloc resection of the lesion was achieved without complications. Histological assessment showed a differentiated NET with tumor-free lateral and vertical margins. There remained an 800- μ m distance from the lesion edge to the vertical resection margin.



► **Video 1** Traction-assisted hybrid endoscopic submucosal dissection for small rectal neuroendocrine tumors. Source for the snare: Kaneka Medix. Source for graphical illustrations: Hiroko Fujisawa.



► **Fig. 1** Schemata showing the step-by-step procedure for traction-assisted hybrid endoscopic submucosal dissection. **a** A clip-with-thread was placed at the anal part of the lesion. **b** A thread was passed through a ring of the snare being inserted through an endoscopic channel. **c** The endoscope was inserted into the rectum. **d** The lesion was elevated by pulling the thread.



► **Fig. 2** Schemata of traction-assisted hybrid endoscopic submucosal dissection for a small rectal neuroendocrine tumor. Source: Hiroko Fujisawa.

Traction-assisted hybrid endoscopic submucosal dissection enables deeper dissection of the submucosa by vertical traction of the lesion, which is effective for rectal NETs involving the submucosal layer.

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Competing interests

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