# Endoscopic intermuscular dissection of early anal cancer

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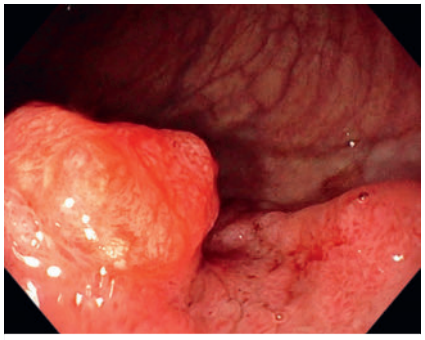
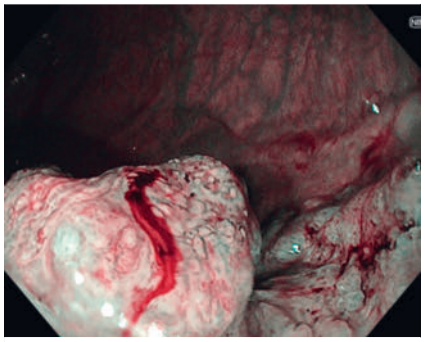
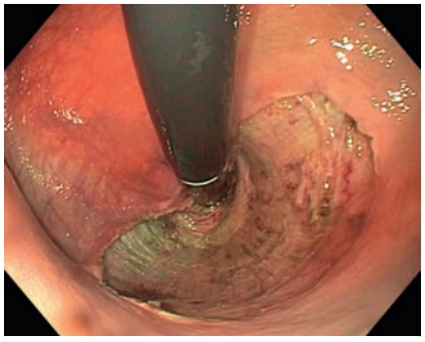


▶ **Fig. 1** White-light imaging of the top of a large anal nodule showing an unusual pit pattern in a 44-year-old woman presenting with rectal blood loss.



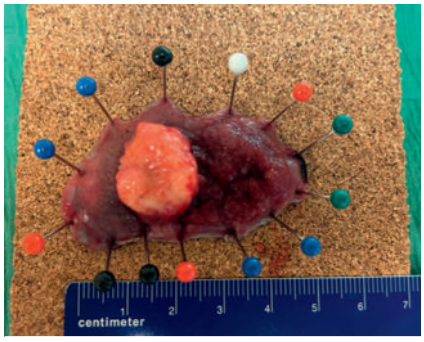
▶ **Fig. 2** Narrow-band imaging of the top of the large nodule showing nonstructured, amorphous pits and nearly avascular and loose microcapillary vessels.



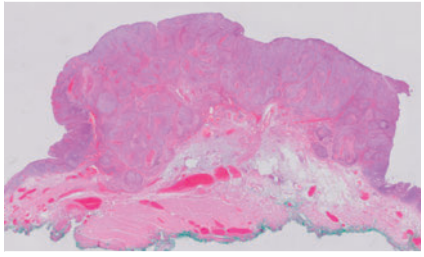
▶ **Fig. 3** Endoscopic view of the resection site after endoscopic intermuscular dissection (EID).

Anal cancer accounts for 0.5 % of all new cancer cases, with an observed annual increase in incidence of up to 2.7 % over the past decade [1]. This increase has closely mirrored the rise in human papillomavirus infections, the most important risk factor for anal cancer. According to international guidelines [2–4], marginal/perianal lesions smaller than 2 cm without lymphatic involvement or metastatic spread can be curatively treated with complete local excision, thereby sparing patients the adverse effects of surgery or chemoradiotherapy. Here, we describe a case of early anal cancer which was successfully treated by endoscopic intermuscular dissection (EID).

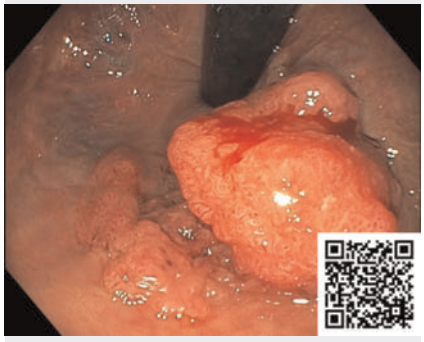
A 44-year-old woman presented with rectal blood loss. Colonoscopy revealed a 30-mm laterally spreading polyp with a large nodule and involvement of the dentate line. Endoscopic assessment showed an unusual pit pattern on the top of the large nodule (▶ **Fig. 1**). Virtual chromoendoscopy showed nonstructured, amorphous pits and nearly avascular and loose microcapillary vessels (▶ **Fig. 2**). As deep submucosal invasion was suspected, EID was performed (see step-by-step explanation in ▶ **Video 1**). We used a conventional video endoscope (GIF-TH190; Olympus, Germany) with a small-caliber-tip transparent hood (DH-28GR; Fujifilm, Japan) fitted to the tip of the endoscope. A FlushKnife BT (DK2618JB-15; Fujifilm, Japan) was used for incision and dissection. For electrical cutting and coagulation, a VIO 300 D electrosurgical generator (Erbe Elektromedizin, Germany) was used. EID was carried out using the tunneling method [5]: an intermuscular tunnel was created from the anal canal to the proximal side in the distal rectum, followed by mobilization of the lateral edges. Complete en bloc resection was achieved (▶ **Fig. 3**, ▶ **Fig. 4**; total proce-




▶ **Fig. 4** Macroscopic view of the resected specimen.



▶ **Fig. 5** Histological analysis of the resected specimen (hematoxylin-eosin stain) showing a T1Sm2 squamous cell carcinoma with free resection margins (>2 mm).



**Video 1** Endoscopic intermuscular dissection of early anal cancer: step-by-step demonstration of the procedure.

dure time 120 min). Histological analysis showed a T1Sm2 squamous cell carcinoma with free resection margins (> 2 mm) and no signs of lymphovascular invasion or high-grade tumor budding (▶ **Fig. 5**). In conclusion, EID is a feasible and potentially curative treatment option for small, localized early-stage anal cancers.

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We would like to thank our expert gastrointestinal pathologist Stijn Crobach (Department of Pathology, Leiden University Medical Center) for examining and providing histological images of the resected specimen.


## Conflict of Interest

The authors declare that they have no conflict of interest.

## The authors


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