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Magnifying endoscopy with narrow-band imaging and salvage endoscopic submucosal dissection of a locally advanced rectal adenocarcinoma after neoadjuvant chemoradiotherapy

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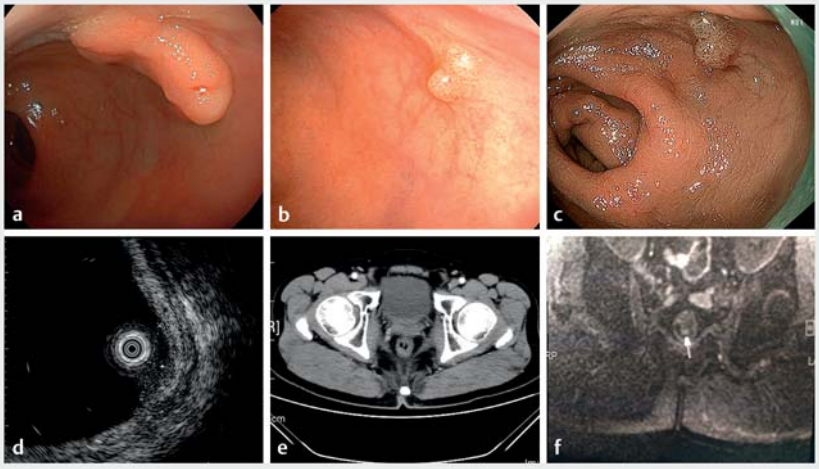
A 61-year-old man underwent colonoscopy because of bloody stools. Colonoscopy showed an elevated lesion of 25 × 15 mm about 3 cm from the anus (▶ **Fig. 1 a**). Histological examination of the biopsy indicated that this was an adenocarcinoma. Endoscopic ultrasound (EUS) showed that the lesion was involving the muscularis propria. Computed tomography (CT) and rectal magnetic resonance imaging (MRI) resulted in a staging classification of T2N0M0.

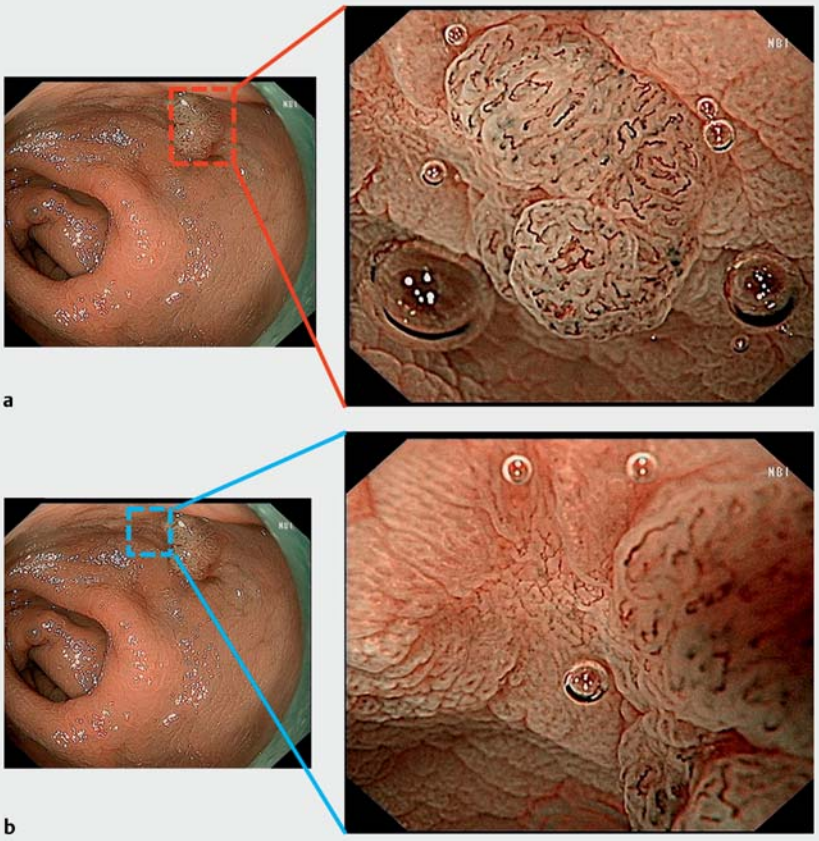
The patient had a strong desire for his anus to be preserved, so neoadjuvant chemoradiotherapy (nCRT) was carried out first. The patient received 45 Gy of radiotherapy in 25 fractions to the pelvic lymph node drainage area and 50.4 Gy in three fractions to the rectal tumor. He then took capecitabine orally. Follow-up colonoscopy 4 months later showed that the tumor had regressed significantly. The residual tumor appeared to be a 0-IIa lesion of 6 × 8 mm with a white scar (▶ **Fig. 1 b, c**). Under magnifying endoscopy with narrow-band imaging (ME-NBI), the surface and vascular patterns looked like type 2B on JNET typing (▶ **Fig. 2**; ▶ **Video 1**). EUS revealed that the lesion was located within the mucosa (▶ **Fig. 1 d**). There was no evidence of metastasis on CT imaging (▶ **Fig. 1 e**). Rectal MRI showed that the lower segment of the rectum was slightly thickened, but no suspicious lymph nodes were seen (▶ **Fig. 1 f**). With the signs indicating tumor downstaging, the patient still declined surgery. It was agreed that he would undergo salvage endoscopic submucosal dissection (ESD) to assess the pathologic response.

Although the lesion was locally scarred, salvage ESD was performed successfully (▶ **Fig. 3**) and was not as difficult as expected. The pathological results showed that the residual adenocarcinoma was confined within the mucosa (▶ **Fig. 4**) and that the lateral and vertical margins were negative, meaning partial pathological complete response and an R0 resection. After further discussion with surgeons and oncologists, the patient chose follow-up and observation and, 4 months later, rectal MRI showed no signs of residual disease or recurrence (▶ **Fig. 5**). The patient is still being closely followed up.

Video 1 Endoscopic features and salvage endoscopic submucosal dissection procedure for a locally advanced rectal adenocarcinoma that had been treated with neoadjuvant chemoradiotherapy.



▶ **Fig. 1** Images of a locally advanced rectal adenocarcinoma: **a** shown endoscopically before neoadjuvant chemoradiotherapy; **b–f** after neoadjuvant chemoradiotherapy, shown on: **b, c** white-light endoscopy; **d** endoscopic ultrasound; **e** computed tomography; **f** magnetic resonance imaging.



▶ **Fig. 2** View of the residual tumor on narrow-band imaging with magnification consistent with a JNET type 2B lesion.

Salvage ESD for locally advanced rectal cancer after nCRT is technically feasible [1, 2]. There should be a diagnostic role for salvage ESD in assessing the pathologic response to nCRT and a possible therapeutic role in resecting residual lesions, with the potential to avoid surgery.

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Competing interests

The authors declare that they have no conflict of interest.

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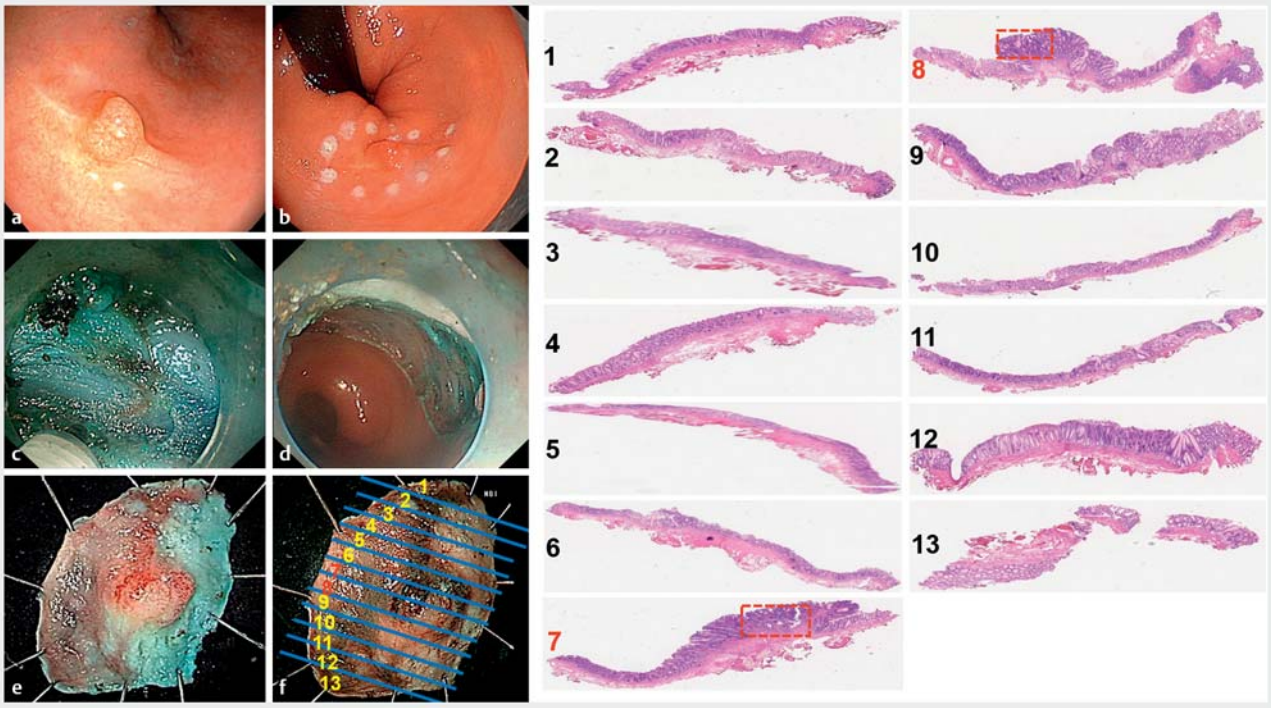
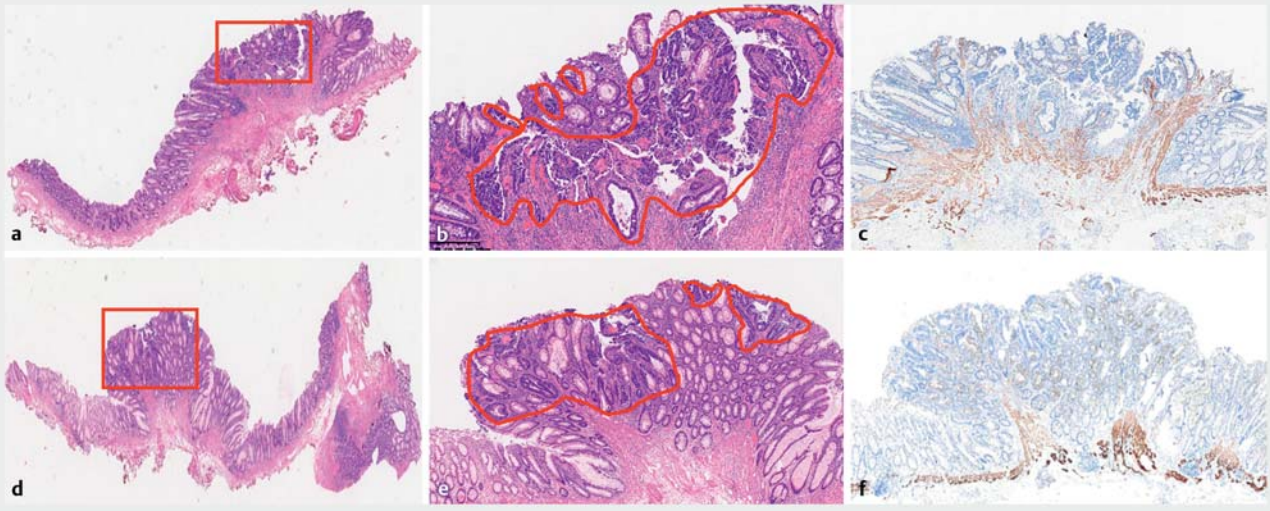
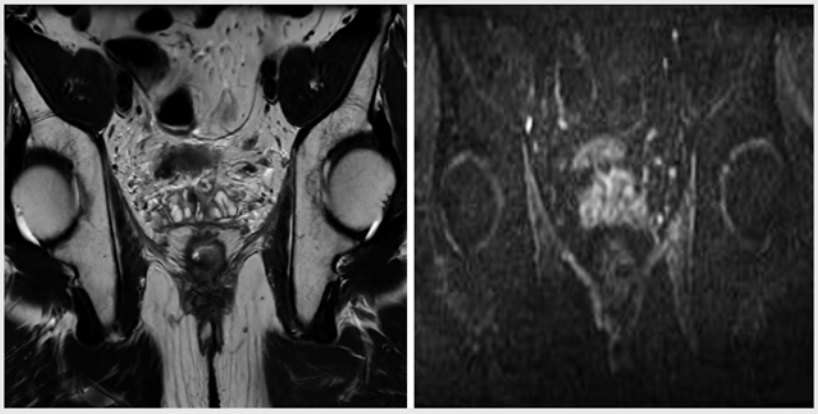


▶ **Fig. 3** Images showing: **a–d** the salvage endoscopic submucosal dissection procedure; **e, f** macroscopic appearance of the specimen and the 13 hematoxylin and eosin-stained histological sections, as indicated in image **f**.



▶ **Fig. 4** Histological appearance of the: **a–c** 7th tissue strip from the resected specimen; **d–f** 8th tissue strip; stained with: **a, b, d, e** hematoxylin and eosin; **c, f** desmin.



▶ **Fig. 5** Enhanced rectal magnetic resonance imaging 4 months after the salvage endoscopic submucosal dissection procedure with no signs of residual disease or recurrence.

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