Clinical course after endoscopic submucosal dissection in the rectum leaving a circumferential mucosal defect of 26 cm in length

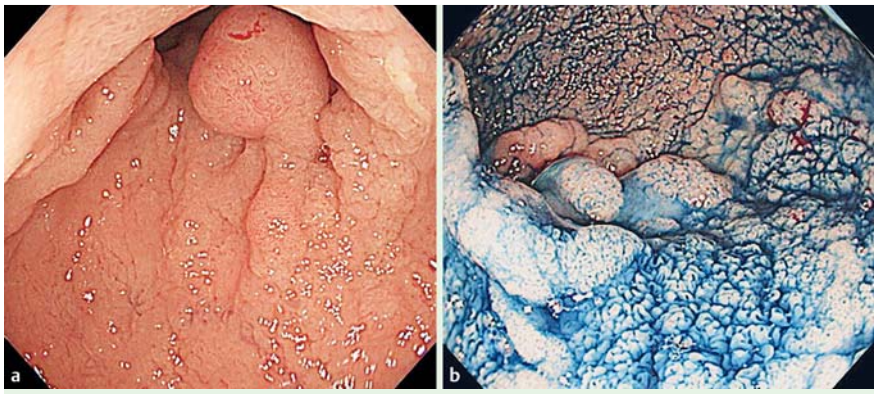

Fig. 1 A long circumferential laterally-spreading granular-type tumor that was occupying nearly the entire rectum seen on: **a** standard endoscopic view; **b** chromoendoscopic view with indigo carmine dye.

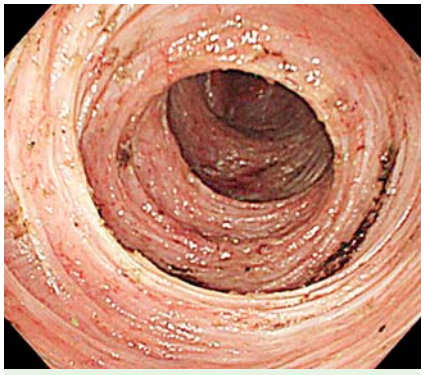

Fig. 2 The artificial ulcer left after endoscopic submucosal dissection (ESD), a circumferential mucosal defect of 26 cm in length that covered the whole rectum and part of distal sigmoid colon.

Fig. 3 Macroscopic view of the resected specimen, which measured 260 × 135 mm.

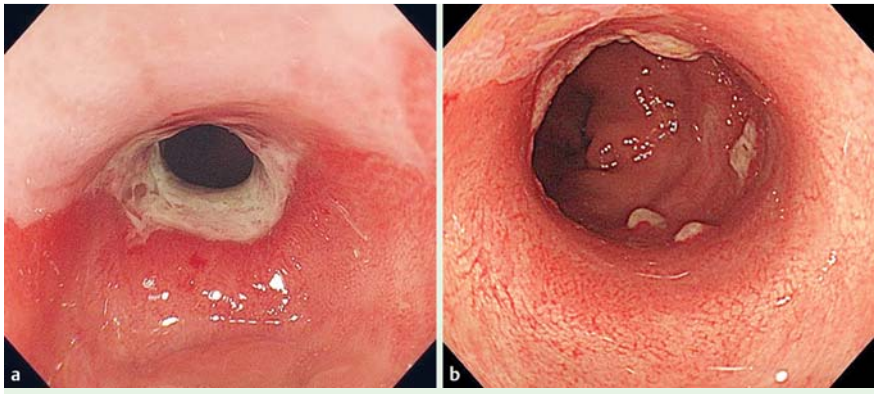

Fig. 4 Endoscopic views during follow-up showing: **a** the stricture that occurred 4 months after the endoscopic submucosal dissection (ESD); **b** almost complete epithelialization of the treatment area 9 months later.

A 70-year-old woman underwent a computed tomography (CT) scan for follow-up of a suspected intraductal papillary mucinous neoplasm, which showed thickening of the rectal wall. She subsequently underwent a colonoscopy, which showed a long circumferential lateral spreading tumor that was occupying nearly the entire rectum (**Fig. 1**). Endoscopic findings in a region with a small nodule indicated the possibility of submucosal tumor invasion; however, the CT scan showed no evidence of tumor metastasis.

Endoscopic submucosal dissection (ESD) was performed with the aim of reducing the invasiveness of her treatment. A Flush knife-BT (FUJIFILM) was used [1] and en bloc resection was achieved (**Fig. 2**), with the total procedure taking 275 minutes. Histopathologic examination showed well-differentiated adenocarcinoma in an adenoma, 250 × 135 mm in size, with 3000-µm submucosal invasion in a 4-mm nodular area without lymphovascular invasion (**Fig. 3**).

The patient did not wish to undergo additional surgery. Betamethasone suppositories (2 mg/day) were administered to prevent postoperative stricture and were tapered off over 4 months. There were no major symptomatic complaints from the patient after she underwent ESD. Follow-up colonoscopies showed slow epithelialization with no evidence 1 month later, approximately 20% progress 2 months later, and 50% coverage 3 months later. After 4 months, a membranous stricture was identified (**Fig. 4a**) and successfully treated with one-time endoscopic balloon dilation (EBD). At the last follow-up 9 months later, healing was progressing with near complete epithelialization seen (**Fig. 4b**).

Previous articles have reported on the usefulness of ESD in large early colorectal tumors [2–4]. We demonstrated that a more than 90% circumferential mucosal resection in the rectum carries the risk of postoperative stricture, which has been reported to occur on average 1 month after ESD [5]. In the present case, the emergence of a stricture and the development of epithelialization were slow, which may have been due to the extreme size of the resected area and to the steroid treatment.

Although the present case, to the best of our knowledge, had the longest circumferential mucosal defect after ESD in the rectum that has so far been reported, this long circumferential mucosal resection resulted in only a membranous stricture, which was easily treated by EBD.

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Competing interests: Takashi Toyonaga invented the standard Flush knife and the ball-tipped Flush knife (Flush knife-BT) in conjunction with Fujifilm Inc., Tokyo, Japan and receives royalties from its sale.

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