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Complete resection of residual rectal dysplasia in a patient with ulcerative colitis using the pocket-creation method

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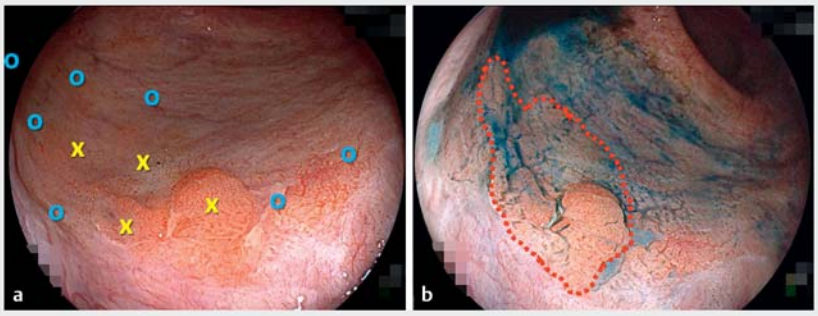
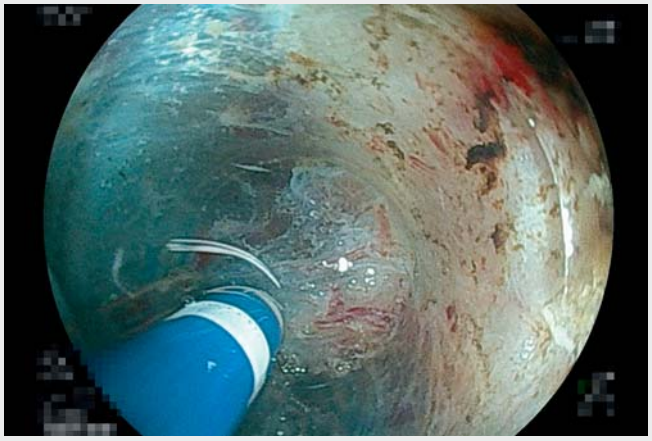
Formerly, when ulcerative colitis-associated neoplasia (UCAN) was identified, total colectomy was required to prevent future colorectal cancers. Since the introduction of the SCENIC guideline (2015) [1], endoscopic resection of UCAN is gradually being accepted. UCANs are however obscurely demarcated and have severe submucosal fibrosis, which makes endoscopic R0 resection challenging. Although multiple biopsies can be helpful to demarcate UCAN, they make the resection more challenging. The pocket-creation method (PCM) of endoscopic submucosal dissection (ESD) is good for resecting fibrotic submucosa, such as that under nongranular laterally spreading tumors [2] or after endoscopic interventions including biopsies. We illustrate the complete endoscopic resection of an area of rectal dysplasia in a patient with UC using the PCM.

The patient was a 67-year-old man who had an 18-year history of UC. Although he had undergone endoscopic mucosal resection (EMR) of an adenoma in the distal rectum 3 years previously, the resection margin was pathologically positive, and a surveillance colonoscopy 2 years after the resection revealed residual dysplasia. He was referred to our hospital because he wanted to undergo endoscopic local resection instead of total colectomy. After he had received 3 months of concurrent treatment with 5-aminosalicylic acid enemas for the still inflamed rectum, along with oral 5-aminosalicylic acid and vedolizumab, a slightly red elevated lesion was identified (▶ **Fig. 1**). Multiple biopsies were taken from this elevated area and also from the surrounding mucosa to determine the extent of the dysplasia, with the outermost biopsies being found to be negative for dysplasia.

The PCM was performed after the area of dysplasia had been demarcated by reference to the surrounding negative biopsies (▶ **Video 1**). Despite severe submucosal fibrosis caused by chronic inflammation, the previous EMR, and the multiple biopsies (▶ **Fig. 2**), en bloc resection was achieved, without any adverse events. Pathologic evaluation revealed a low grade dysplastic lesion, with a negative margin (▶ **Fig. 3**).



▶ **Fig. 1** Endoscopic images showing the elevated rectal lesion: **a** on magnifying colonoscopy (EC-760ZP-W/M, Fujifilm, Tokyo, Japan), which revealed a 10-mm red slightly elevated lesion close to the dentate line ("X" indicates a biopsy that was pathologically positive for dysplasia; "O" indicates a biopsy that was pathologically negative for dysplasia); **b** following indigo carmine spraying, which enhanced the area surrounding the lesion (red dotted line indicates the area identified as dysplasia on biopsy results).



Video 1 Complete resection of residual rectal dysplasia after endoscopic mucosal resection in a patient with ulcerative colitis using the pocket-creation method of endoscopic submucosal dissection.

This patient demonstrates that rectal dysplasia with severe submucosal fibrosis due to UC and previous multiple endoscopic interventions can be safely and completely resected using the PCM.

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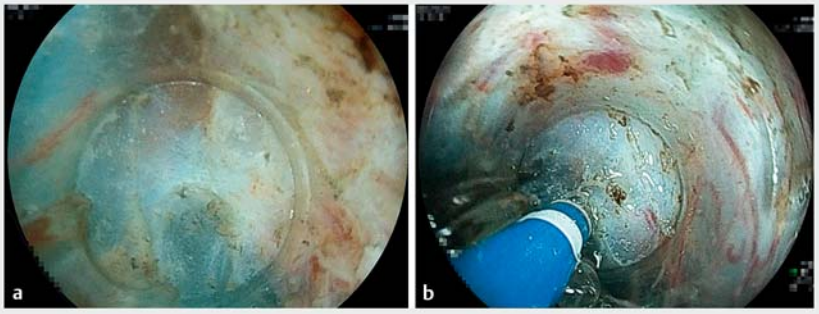
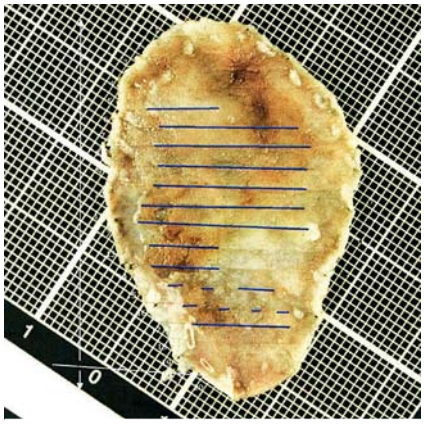


▶ **Fig. 2** Images during performance of the pocket-creation method of endoscopic submucosal dissection using a therapeutic gastroscope (EG-L580RD, Fujifilm), 1.5-mm ORISE Proknife (Boston Scientific, Marlborough, Massachusetts, USA), ST hood (DH-33GR, Fujifilm), and VIO 3 (ERBE Elektromedizin, Tübingen, Germany) showing: **a** severe focal submucosal fibrosis on entering the submucosal pocket, which was likely caused by the endoscopic mucosal resection 3 years previously; **b** fibrosis of the entire submucosa due to chronic inflammation from ulcerative colitis and the previous multiple biopsies.



▶ **Fig. 3** Macroscopic appearance of the resected specimen after formalin fixation (the left side is distal), which was shown to be low grade dysplasia with a negative margin (blue lines indicate the dysplasia). All pathological specimens showed negative p53 immunostaining, consistent with this being sporadic dysplasia or ulcerative colitis-associated neoplasia with null mutant of the p53 gene.

Competing interests

H. Yamamoto is a consultant for Fujifilm Corporation and has received honoraria, a grant and royalties from the company. The remaining authors declare that they have no conflict of interest.

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