Ulcerative colitis is a chronic inflammatory bowel disorder associated with a high risk of colorectal cancer [1]. Endoscopic diagnosis of early ulcerative colitis-associated colorectal cancer or precancerous lesions is very difficult [2–4]. We report three cases with early-stage colorectal cancer or dysplasia examined with conventional endoscopy, magnified endoscopy and/or endoscopic ultrasonography (EUS).

Case 1 (Fig. 1) was a 48-year-old woman with the total colitis type ulcerative colitis; the disease duration was 29 years. Through conventional endoscopy, the cancerous lesion was detected as a villous, flat elevation. In the examination using EUS, the cancerous lesion was observed as a hypoechoic area. Because the hypoechoic area included the cancer itself and concomitant inflammatory cell invasions and fibrosis, the borderline between the neoplastic and non-neoplastic lesion was unclear, making it difficult to evaluate the invasion depth. Histopathologic diagnosis was well-to-moderately differentiated adenocarcinoma and the invasion extended to the muscularis propria.

Case 2 (Fig. 2 a–d) was a 55-year-old man with the left-sided colitis type of ulcerative colitis; the disease duration was 20 years. Through conventional endoscopy, the cancerous lesion was detected as a flat elevation with capillarectasia; the cancer was located in the rectum. b, c Using magnified endoscopy, the Vn pit patterns in the Kudo classification were mainly observed in the cancerous lesion (c), and the capillarectasia was emphasized (b). d In the examination with endoscopic ultrasound, a hypoechoic area was observed.

Useful endoscopic findings for early diagnosis of ulcerative colitis associated colorectal cancer

Fig. 1 Conventional endoscopy (Indigo carmine dye spraying) in case 1. The cancer was located in the rectum. Through conventional endoscopy, the cancerous lesion was detected as a villous, flat elevation.

Fig. 2 Case 2 results. a Through conventional endoscopy, the cancerous lesion was detected as a flat elevation with capillarectasia; the cancer was located in the rectum. b, c Using magnified endoscopy, the Vn pit patterns in the Kudo classification were mainly observed in the cancerous lesion (c), and the capillarectasia was emphasized (b). d In the examination with endoscopic ultrasound, a hypoechoic area was observed.
Case 3 (Fig. 3) was a 67-year-old man with the total colitis type of ulcerative colitis; the disease duration was 9 years. Through conventional endoscopy, the lesion was detected as a flat elevation with remarkable redness. Through magnified endoscopy $V_N$ or $V_I$ pit patterns in the central area of the flat elevation and IV pit patterns in the surrounding area were observed. Histopathologic diagnosis was low-grade dysplasia.

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