Effective use of image-enhanced endoscopy and endoscopic submucosal dissection for multiple flat non-polypoid colorectal neoplasms

Non-polypoid colorectal neoplasms are the precursors of post-colonoscopy colorectal cancers (PCCRCs) [1], but can easily be overlooked because of their appearance. Therefore, early detection and treatment of laterally spreading tumors, non-granular type (LST-NGs) and 0-IIb lesions are important for preventing PCCRC. We report the case of a patient with multiple flat non-polypoid colorectal neoplasms, among which a 0-IIb (LST-NG) lesion was appropriately diagnosed with image-enhanced endoscopy and treated with endoscopic submucosal dissection (ESD) [2].

A 58-year-old woman whose mother and uncle had a history of CRC had a positive fecal occult blood test result. Multiple flat non-polypoid colorectal neoplasms with diverse morphologies, including a type 2 lesion, were detected by subsequent colonoscopy (Fig.1). Right hemicolectomy was scheduled for the type 2 lesion in the transverse colon. Another colonoscopy was performed for close examination before surgery.

A 35-mm 0-IIb (LST-NG) lesion, which had an unclear margin on white-light imaging, was detected in the descending colon. The lesion was clearly visualized using narrow-band imaging (NBI) and indigo carmine dye. Magnifying NBI showed a Japan NBI Expert Team (JNET) type 2B pattern [3], and crystal violet staining indicated a type V (non-invasive) pit pattern (Fig.2). The preoperative diagnosis was intramucosal or submucosal superficial invasive cancer (<1000 µm), and the lesion was located outside the right hemicolectomy area. It was therefore resected via ESD, and curative resection was achieved (Fig.3; Video 1). The tumor was intact for the two mismatch repair proteins (MSH6, PMS2) by immunohistochemical staining. No germline pathogenic variant was found in the cancer predisposition genes, including MLH1, MSH2, MSH6, PMS2, PTEN, and TP53 by multigene panel test.

Fig.1 Endoscopic views of the multiple colorectal neoplasms, with a schematic marking where they were identified, showing a 10-mm 0-Ia lesion in the cecum; a 12-mm lesion at the hepatic flexure; a 40-mm type 2 lesion in the transverse colon; a 15-mm 0-IIa lesion in the transverse colon; a 0-IIb lesion in the transverse colon; a 40-mm 0-Ia + IIa lesion in the sigmoid colon; and a 35-mm 0-IIb laterally spreading tumor, non-granular type, in the descending colon.

Fig.2 Endoscopic images showing: a a 35-mm 0-IIb laterally spreading tumor, non-granular type, on white-light endoscopy; b, c the tumor margin demonstrated with: b narrow-band imaging (NBI); c indigo carmine dye; d an irregular distribution of vessels and a visible irregular surface pattern on magnifying NBI; e an uneven and irregular pit pattern without territoriality on crystal violet staining.
ing using peripheral blood. After the ESD had been completed, the type 2 lesion was surgically treated. Appropriate diagnosis and treatment of non-polypoid colorectal neoplasms are crucial for the prevention of postoperative metachronous CRC and PCCRC.

Competing interests

The authors declare that they have no conflict of interest.

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CORRECTION
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In the above-mentioned article, the classification of tumors has been corrected to 0-IIb. This was corrected in the online version on March 24, 2022.

Video 1 Image-enhanced endoscopy and endoscopic submucosal dissection of a 0-IIb lesion in the descending colon.

Fig. 3 Histopathological appearance of the resected lesion showing: a tumor-free horizontal and vertical margins and no evidence of lymphovascular invasion (pink lines represent adenocarcinoma in the mucosal layer; the red line represents adenocarcinoma in the submucosal layer); b the microscopic appearance with a depth of 750 µm indicating invasion into the submucosal layer without lymphovascular invasion, consistent with a curative resection having been achieved.