A 72-year-old man with an 18-year history of pancolitis had been visiting our hospital regularly for 12 years. He was taking oral mesalamine and mercaptopurine to sustain clinical remission. Surveillance colonoscopy was performed using high-definition endoscopy (CF-HQ290ZI; Olympus, Tokyo, Japan) with an artificial intelligence (AI)-based detection system (EndoBRAIN-EYE; Cybernet Systems, Tokyo, Japan).

The AI-based detection system identified two lesions in the sigmoid colon (▶ Fig. 1 a, b) and indicated them with bounding boxes (▶ Video 1).

Histological examination of the biopsy specimens showed that both of the lesions were characterized by low-grade dysplasia (▶ Fig. 2 a, b).

Patients with longstanding ulcerative colitis (UC) have a higher risk of colorectal cancer than do individuals in the general population [1]. UC-associated dysplasia is often flat with an unclear boundary from the surrounding tissues, making it difficult to detect [2]. AI-based polyp detection systems are used during colonoscopy to increase lesion detection [3]. The EndoBRAIN-EYE system can reportedly identify colorectal lesions with high accuracy in non-UC patients [4, 5]. However, its use for the detection of dysplasia in patients with UC has not been previously reported.

With a target biopsy strategy in UC surveillance, the ability to detect lesions depends on the endoscopist. AI has the potential to help non-expert endoscopists detect dysplasia in patients with UC.
Competing interests

Shin-ei Kudo, Masashi Misawa, and Yuichi Mori received lecture fees from Olympus Corp. Shin-ei Kudo, Masashi Misawa, and Yuichi Mori have patents (Japan Patent JP 6059271 and JP 6580446) licensed to Cybernet systems and Showa University. Kazuo Ohtsuka reports personal fees and nonfinancial support from Olympus outside the submitted work. Kensaku Mori received a grant from Cybernet Systems.

The authors

Yasuharu Maeda1, Shin-ei Kudo1, Noriyuki Ogata1, Masashi Misawa1, Yuichi Mori1, Kensaku Mori2, Kazuo Ohtsuka3
1 Digestive Disease Center, Showa University Northern Yokohama Hospital, Yokohama, Kanagawa, Japan
2 Graduate School of Informatics, Nagoya University, Nagoya, Japan
3 Endoscopy Department, Tokyo Medical and Dental University, Tokyo, Japan

Corresponding author

Yasuharu Maeda, MD
Digestive Disease Center, Showa University Northern Yokohama Hospital, 35-1 Chigasaki-chuo, Tsuzuki, Yokohama 224-8503, Japan
Fax: +81-45-949-7000
yasuharumaeda610@hotmail.com

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