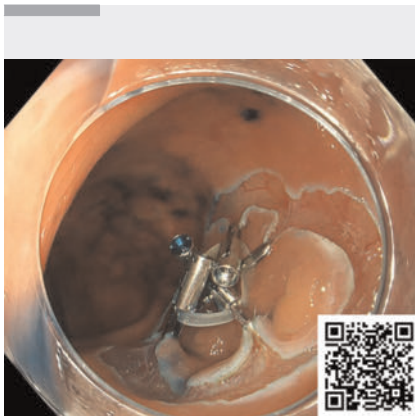


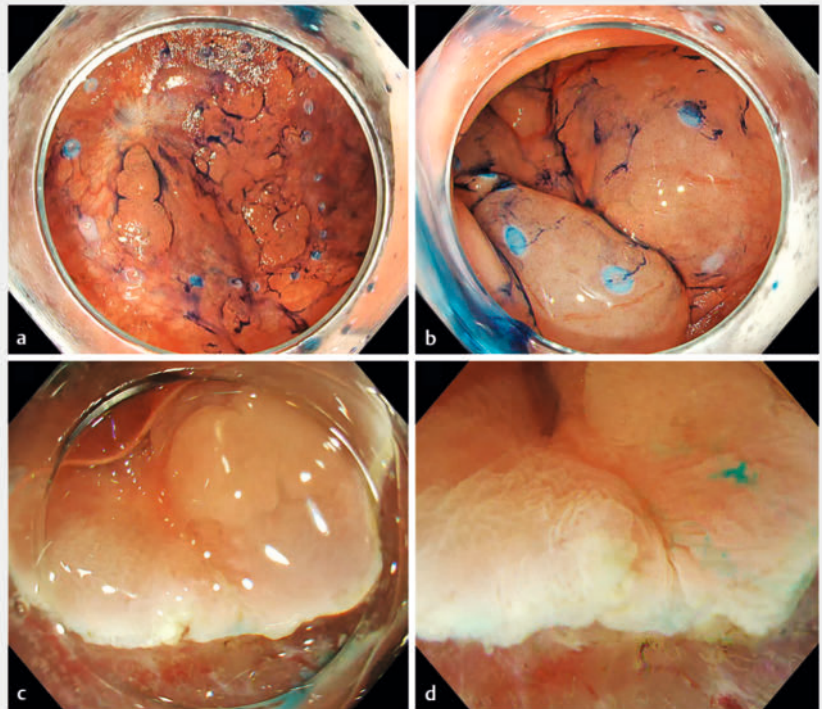
Endoscopic submucosal dissection for severe fibrosis using a combined water pressure and circumferential-inversion method



Video 1 Endoscopic submucosal dissection is performed using a novel approach that combines the water pressure method and the circumferential-inversion method for a lesion on a scar with severe fibrosis.

Use of the water pressure method during endoscopic submucosal dissection (ESD) has been reported to shorten procedure times for colorectal lesions with fibrosis [1, 2]; however, ESD for cases with severe fibrosis remains extremely challenging [3]. We recently reported a novel traction method called the circumferential-inversion method (CIM), which involves inverting the lesion circumferentially [4]. In this report, we describe the effectiveness of ESD using a novel approach that combines the water pressure method and CIM (WP-CIM) for lesions with severe fibrosis (► **Video 1**).

The case involved a 69-year-old woman with a 30-mm 0-IIa tumor on the scar created by a previous endoscopic submucosal resection in the sigmoid colon (► **Fig. 1a**). Local injection at the scar site did not result in any elevation (► **Fig. 1b**). We attempted ESD using the water pressure method; however, it was challenging to approach the submucosal layer at the scar site (► **Fig. 1c, d**). After performing a complete circumferential incision and trimming, we grasped the



► **Fig. 1** Endoscopic views during endoscopic submucosal dissection using the water pressure method showing: **a** a 30 mm 0-IIa tumor on the scar created by endoscopic submucosal resection in the sigmoid colon; **b** lack of elevation following local injection at the scar site; **c** severe fibrosis at the scar site that made it challenging to approach the submucosal layer; **d** the water pressure method being used, but it remained challenging to approach the submucosal layer.

specimen by applying an orthodontic rubber band (inner diameter, 8 mm) and clips (SureClip 8 mm; Micro-Tech, Nanjing, China) from five directions (► **Fig. 2a**). The combination of the water pressure method and CIM enabled us to access the submucosal layer effectively (► **Fig. 2b**). Further dissection from the left and right sides allowed us to recognize the dissection line at the scar site (► **Fig. 2c**). The dissection was completed without any complications, resulting in an R0 resection (► **Fig. 2d**).

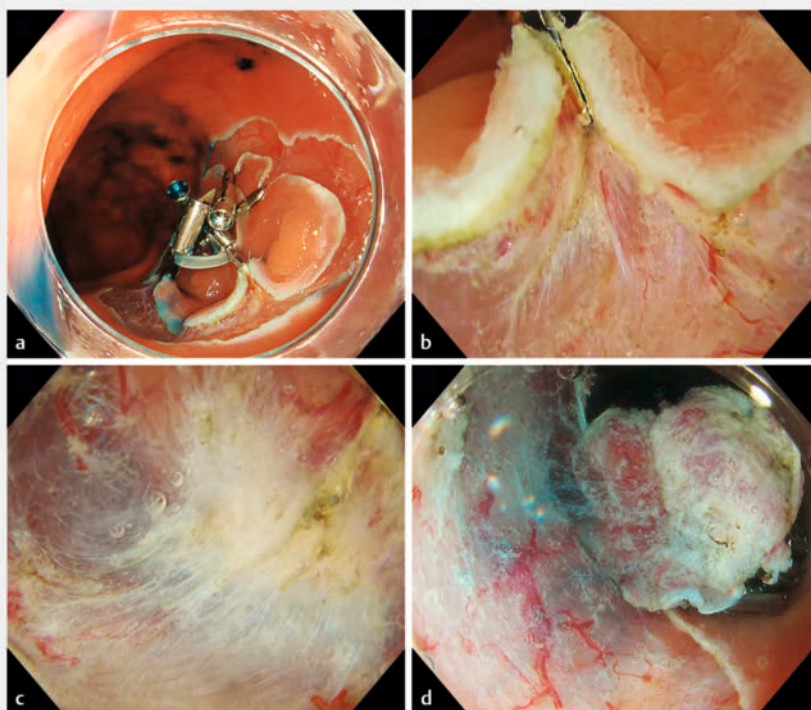
Because CIM is inversion traction, it enhances the effectiveness of the water pressure method in an airless environment. Additionally, CIM improves the vis-

ibility of the dissection line at the scar site by promoting dissection not only from the front but also from the left and right sides. We propose that WP-CIM facilitates ESD for lesions with severe fibrosis.

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Conflict of Interest

The authors declare that they have no conflict of interest.



► **Fig. 2** Endoscopic views during endoscopic submucosal dissection (ESD) using a novel approach that combines the water pressure method and the circumferential-inversion method (CIM; WP-CIM) showing: **a** the specimen grasped from five directions with an orthodontic rubber band and clips after complete circumferential incision and trimming had been performed; **b** WP-CIM being used, which allowed effective access to the submucosal layer; **c** further dissection from the left and right sides allowing recognition of the dissection line at the scar site; **d** R0 resection completed without complications using CIM-enhanced buoyancy and the water pressure effect.

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