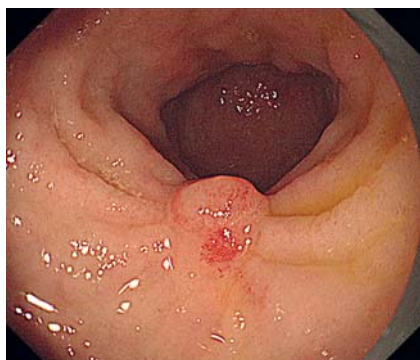


Salvage underwater endoscopic mucosal resection for recurrent gastric cancer after endoscopic submucosal dissection

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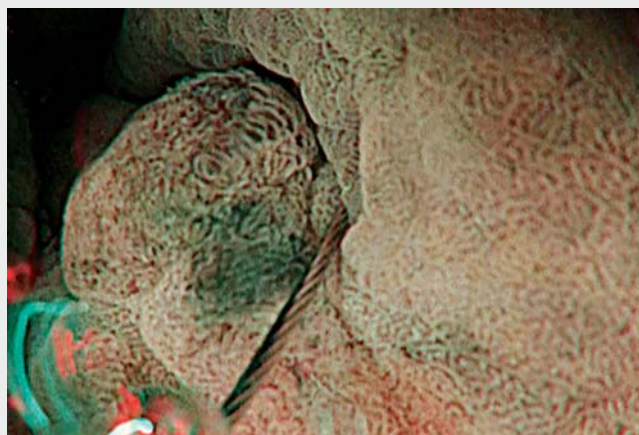
► **Fig. 1** The endoscopic image of the reddish elevated lesion at the center of the endoscopic submucosal dissection scar in the antrum.



► **Fig. 2** Magnifying narrow-band imaging showing an irregular micro-surface and micro-vessels.

Salvage endoscopic treatment of recurrent early gastric cancer (EGC) in scars after endoscopic submucosal dissection (ESD) is cumbersome. Conventional endoscopic mucosal resection (EMR) is usually difficult since submucosal fibrosis caused by previous treatments hinders the lifting of the lesion. ESD can be used as an alternative; however, it requires expertise. Underwater EMR was invented by Binmoeller et al. [1] and has been useful in treating recurrent colorectal polyps [2].

An 83-year-old man underwent esophagogastroduodenoscopy (EGD) for sur-



► **Video 1** A recurrent early gastric cancer treated with underwater endoscopic mucosal resection.



► **Fig. 3** The pathological image of the recurrent intramucosal well-differentiated tubular adenocarcinoma, which was completely resected.

veillance after curative endoscopic treatment for EGC. Two and a half years before the current presentation, he had undergone ESD for EGC, which was Paris 0-IIa,

5 mm in diameter, and located in the antrum. Pathological diagnosis revealed a completely resected mucosal adenocarcinoma. EGD revealed a tiny, reddish,


elevated lesion at the ESD scar center with apparent concentrations of folds in the antrum (► **Fig. 1**). On close observation using magnifying narrow-band imaging (NBI), an irregular micro-surface and micro-vessels were observed, and local recurrence was suspected (► **Fig. 2**). Biopsies were performed, and pathology revealed tubular adenocarcinoma. Time-consuming ESD was considered a burden for the patient. Underwater EMR (► **Video 1**) was performed. An upper gastrointestinal endoscopy with waterjet function (Olympus, Tokyo, Japan) was used. The intraluminal gas was evacuated, and the lumen was filled with normal saline. During snaring, NBI was used to precisely delineate the border of the lesion. After water immersion, the lesion and the surrounding mucosa floated. The lesion with sufficient margin was easily grasped with a 10-mm snare (Olympus) and cut using the Endocut Q mode with an electrosurgical unit (ERBE, Tübingen, Germany). The procedure time was 6 min. Pathological examination revealed intramucosal a well-differentiated tubular adenocarcinoma, which was completely resected (► **Fig. 3**). No adverse events were observed. Gastric underwater EMR is a useful salvage measure for treating recurrent EGC.

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Competing interests

Y. Takeuchi received honoraria for lectures from Olympus, Japan. The other authors disclose no financial relationships or conflicts of interest relevant to this publication.

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