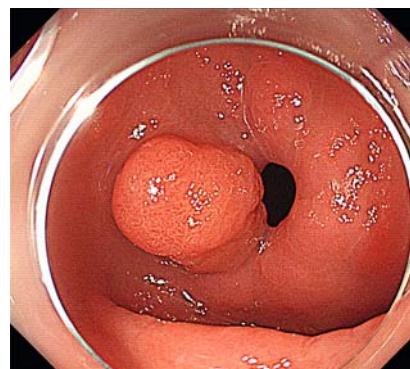


Gel immersion endoscopic mucosal resection for early gastric cancer near the pyloric ring

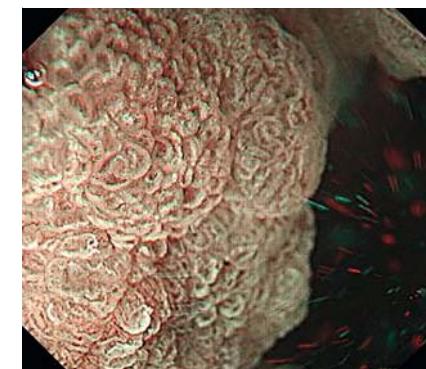
Achieving complete resection of gastric tumors near the pyloric ring with conventional endoscopic mucosal resection (EMR) or endoscopic submucosal dissection is challenging. Limited working space, inadequate assessment of the distal margin, and peristaltic movements result in incomplete resection and/or a long procedure time. Underwater EMR has been recently reported to be effective for treating colorectal and duodenal epithelial neoplasms [1, 2]. Although earlier reports described gastric underwater EMR [3], it is sometimes difficult to accumulate and maintain sufficient water in the pylorus. Herein we present a case of early gastric cancer near the pyloric ring treated with gel immersion EMR.

A 73-year-old man underwent esophagogastroduodenoscopy at our hospital, which revealed a 12-mm protruded lesion at the anterior wall of the pylorus (**►Fig. 1**). Magnifying endoscopy with narrow-band imaging revealed an irregular microsurface and microvascular patterns suggestive of early gastric cancer (**►Fig. 2**). We initially attempted underwater EMR; however, water flowed out through the pyloric ring and the tumor could not be submerged. Therefore, we performed gel immersion EMR using Viscoclear (Otsuka Pharmaceutical Factory, Tokushima, Japan), a gel-based product (**►Video 1**). The injected gel remained in the lesion, provided sufficient buoyancy and a clear endoscopic visual field, and maintained pyloric lumen dilation, allowing us to easily confirm the margin and snare the lesion. We successfully achieved en-bloc resection (**►Fig. 3**, **►Fig. 4**), and total procedure time was 2 minutes. Histopathological diagnosis was well-differentiated intramucosal adenocarcinoma with negative lateral and vertical margins (**►Fig. 5**).

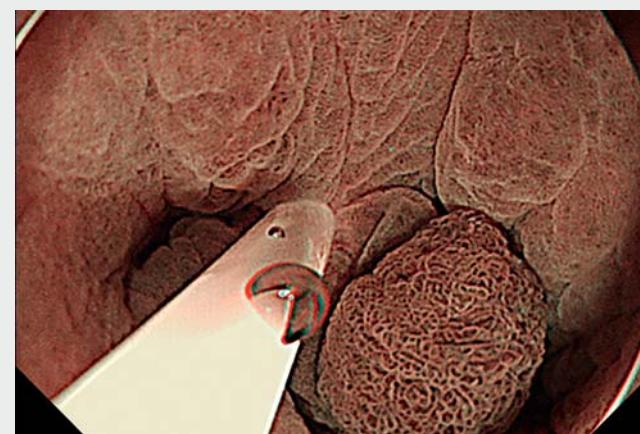
The usefulness of gel immersion EMR for a colonic tumor extending to the diverti-



► Fig. 1 Endoscopic image of the gastric tumor near the pyloric ring.



► Fig. 2 Endoscopic image of the gastric tumor observed by magnifying endoscopy with narrow-band imaging under gel immersion.



► Video 1 The procedure of gel immersion endoscopic mucosal resection for early gastric cancer near the pyloric ring.

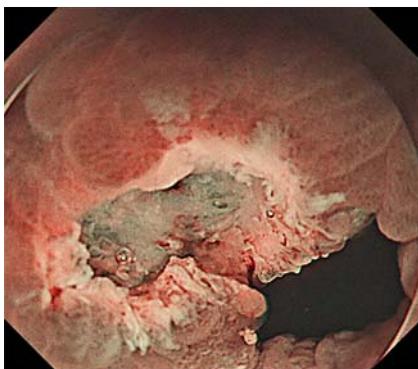


culum and duodenal epithelial neoplasm has been reported [4, 5]. In our case, gel immersion EMR was useful for treating early gastric cancer near the pyloric ring where it is difficult to fill the lumen with water and requires performing the procedure in a narrow space.

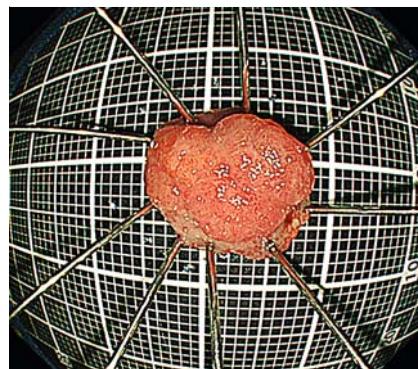
Competing interests

The authors declare that they have no conflict of interest.

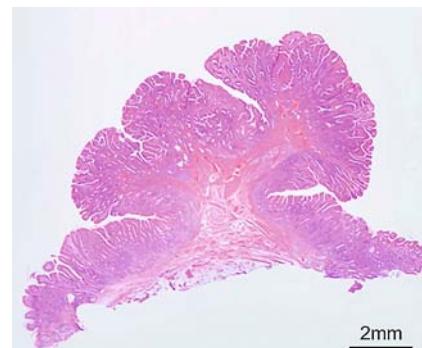
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► Fig. 3 Endoscopic image of the ulcer after gel immersion endoscopic mucosal resection observed by narrow-band imaging.



► Fig. 4 En-bloc resection specimen.



► Fig. 5 Histopathological image of the resected specimen demonstrating well-differentiated intramucosal adenocarcinoma.

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