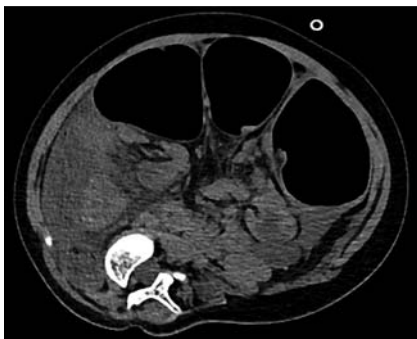


Gel-immersion endoscopic detorsion for pediatric sigmoid volvulus

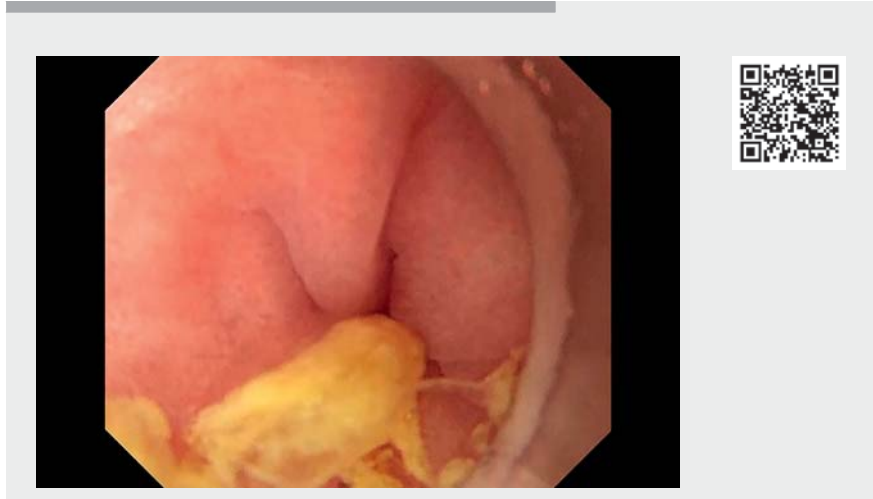


► **Fig. 1** Abdominal radiograph shows a huge dilated colon.



► **Fig. 2** Abdominal computed tomography in the axial plane shows prestenotic dilatation of the sigmoid colon near the point of mesenteric rotation.

Pediatric sigmoid volvulus is a rare but emergency disease caused by abnormal twisting of the bowel along the mesenteric axis [1,2]. Water immersion colonoscopy has been reported to be effective for sigmoid volvulus because it minimizes colonic distension and improves visibility [3,4]. Gel-immersion endoscopy is a new method for securing the visual field during endoscopy [5]. The gel is better than water for removing contaminated bowel fluid and improving visibili-



► **Video 1** Successful endoscopic detorsion for pediatric sigmoid volvulus by using the gel-immersion method.

ty. Moreover, the weight of the gel opens the twisting colon and facilitates volvulus passage. We present a case of pediatric sigmoid volvulus treated with gel-immersion endoscopic detorsion.

An 8-year-old girl with a double-outlet right ventricle was admitted to our hospital because of vomiting after an injection from a gastric fistula. She had no stool or flatus passage for two days, and her facial expression was anguished. Physical examination revealed a distended tympanic abdomen with high-pitched bowel sounds. Abdominal radiography revealed a huge dilated colonic loop (► **Fig. 1**). Computed tomography revealed bowel obstruction with swirling of the sigmoid colon, and sigmoid volvulus was suspected (► **Fig. 2**). A twisted intestine was confirmed at the sigmoid colon, but the poor endoscopic view caused by contaminated bowel fluid made endoscopic detorsion difficult. Therefore, we performed gel immersion endoscopy using ViscoClear (Otsuka Pharmaceutical Factory, Tokushima, Japan) (► **Video 1**). The injected gel provided a clear endoscopic view and helped assess intestinal ischemia (► **Fig. 3**). Moreover, in the left lateral

decubitus position, the weight and pressure of the injected gel opened the twisted colon and facilitated volvulus passage (► **Fig. 4**). When the endoscope was passed through the torsion, a dilated intestinal lumen filled with gas and stool was observed, and endoscopic detorsion and decompression were successfully performed (► **Fig. 5**).

This case study successfully employed gel-immersion endoscopy, which may be useful in the endoscopic detorsion of a sigmoid volvulus.

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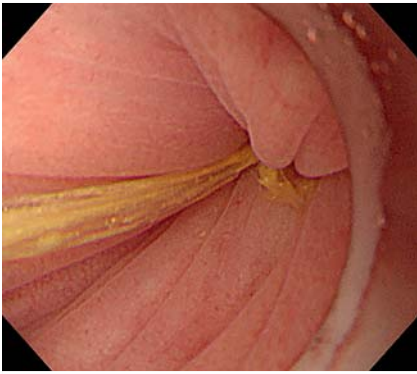
Competing interests

The authors declare that they have no conflict of interest.

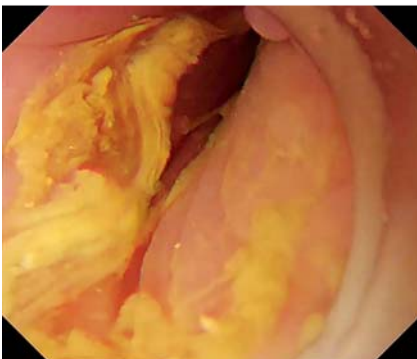
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► **Fig. 3** The twisted colon without ischemia was shown in a clear endoscopic view by the gel immersion method.



► **Fig. 4** In the left lateral decubitus position, the pressure and weight of the injected gel opened the twisted colon.



► **Fig. 5** X-ray fluoroscopy showed that the dilated colon had disappeared.

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