It is difficult to close perforations that are large and full thickness in the gastrointestinal tract using conventional clips. Closure methods using special devices, including the over-the-scope (OTS) clip (Ovesco, Tübingen, Germany), have therefore been devised [1–3]. However, the OTS clip cannot be regripped and cannot be used unless the endoscope is pulled out for the clip to be attached [4]. Therefore, a device that can reliably close a perforation under endoscopic visibility is desired. We introduce a reusable clip, which has a large width of 20 mm, and demonstrate its ability to close large gastric perforations in a porcine model.

The reusable clip (LOCKADO hemostasis clip; 20 mm; Micro-Tech (Nanjing) Co., Ltd., Nanjing, China) has large teeth with an opening width of 20 mm (Fig. 1). It is possible to regrip and reposition the reusable clip after it is opened. The clip has small teeth on both sides that are distinct from the tips of the teeth to prevent the gripped tissue from slipping.

A full-thickness perforation of approximately 15 mm was made in a porcine stomach (Fig. 2; Video 1). The perforation was then gradually closed using 20-mm reusable clips placed from one end of the perforation to the other. Three 20-mm reusable clips were used to achieve complete closure. Because of the greater width of the clips, the muscles and mucosa were inverted toward the stomach lumen, and no air leakage was observed outside the stomach. Next, a full-thickness perforation of 25 mm was...
created. Similarly, the perforation was closed from one end to the other. The clips are repositionable, so they can be grasped and changed to the appropriate position as required. For this larger perforation, an additional 11-mm reopenerable clip was added; as a result, the full-layer perforation was completely closed without any air leak.

The 20-mm reopenerable clip has the potential to close large full-thickness perforations.

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Competing interests

The authors declare that they have no conflict of interest.

The authors

Tatsuma Nomura1,2, Shinya Sugimoto1, Haruka Nakamura1,2, Jun Oyama3, Keiichi Ito2, Akira Kamei1
1 Department of Gastroenterology, Ise Red Cross Hospital, Ise, Mie, Japan
2 Department of Gastroenterology, Mie Prefectural Shima Hospital, Shima, Mie, Japan

Corresponding author

Tatsuma Nomura, MD
Department of Gastroenterology, Ise Red Cross Hospital, 1-471-2 Funae, Ise, Mie, 516-8512, Japan
m06076tn@icloud.com

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