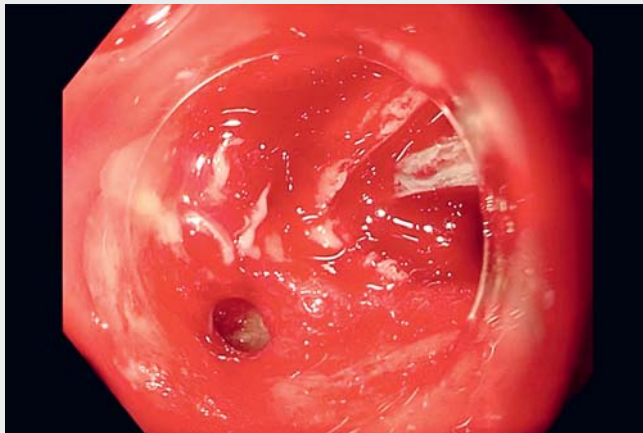


Endoscopic closure of a gastric perforation using mucosal adaptative ring to close endoscopic artificial ulcer: the MARCEAU system

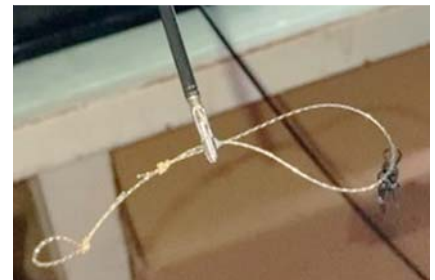
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▶ Video 1 Endoscopic closure of a gastric perforation using the “mucosal adaptative ring to close endoscopic artificial ulcer” (MARCEAU) system.



▶ Fig. 1 Over-the-scope clip removed: mucosa of the stomach locked in the device.



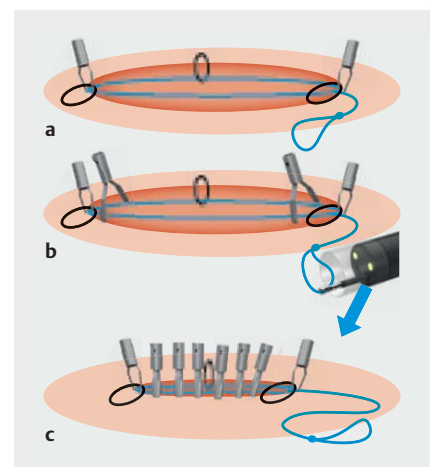
▶ Fig. 2 View of the “mucosal adaptative ring to close endoscopic artificial ulcer” (MARCEAU) system.

A percutaneous endoscopic gastrostomy (PEG) tube is removed after the complete resumption of oral intake. The gastrostomy site closes spontaneously in most cases after the removal of the PEG tube [1]. However, persistent gastrocutaneous fistulae can occasionally occur. They are first managed medically with a proton pump inhibitor (PPI), and in case of persistent fistulae, endoscopic management can be proposed using a hemostatic clip or over-the-scope (OTS) clip [2].

We report the case of a 66-year-old man who was referred for a persistent gastrocutaneous fistula after removal of a PEG after failure of medical and endoscopic treatment. Two endoscopic attempts were performed first using hemostatic clips and then an OTS clip. On the third endoscopy, the OTS clip was placed on the mucosal edge of the fistula, but it did not totally close the fistula (**▶ Video 1**). It was decided to remove it using forceps (**▶ Fig. 1**). A large gastric hole was visualized. We decided to perform an endoscopic submucosal dissection of the

surrounding mucosal patch to facilitate fistula closure [3]. Then, we used a previously described adaptative suture device to close the leak. This device is made from anti-return sutures (VLOC; Medtronic, Minneapolis, Minnesota, USA) with a loop that allows applying traction and progressively closing the loop (**▶ Fig. 2**). The system was fixed to both edges of the ulcer with clips (**▶ Fig. 3**, **▶ Video 1**). Multiple clips were placed side by side capturing the sealing device. Then, we used a forceps to tighten the device, bringing all clips closer to each other and promptly closing the perforation. Maximal endoscopic insufflation confirmed complete closure of the leak. The use of forceps to remove the Ovesco clip probably induced the enlargement of the fistula. The remOVE system (Ovesco Endoscopy AG, Tuebingen, Germany) is preferred in this situation. This low-cost closure device seems useful to close large leaks by apposing the edges.

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▶ Fig. 3 Schematic view of the device. **a** Fixation of the device at the edge of the leak. **b** Clipping along the leak. **c** Closure of the leak after apposing the edge of the leak.

Competing Interests

Clara Yzet: Abbvie, Takeda, Jansen, Amgen, Galapagos.

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