

## DEN Video Article

## Layer-to-layer closure of a large gastric artificial ulcer using side-channel tube

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Gastrointestinal defect closure supports faster healing of artificial ulcers, and may reduce postoperative adverse events, especially delayed bleeding as a result of recent increasing proportion of antithrombotic drug uptake. Although a colonic artificial defect can easily be closed using endoscopic hemoclips, complete gastric closure is more difficult because of the thick walls. Several closure techniques using the endoloop<sup>1,2</sup> and the clip and line<sup>3</sup> have recently been reported. However, in our experience, these procedures seem to induce muscle damage, as the hemoclips face toward the defect during approximation of the edges of a defect. Herein, we describe a novel and reliable method for closure of a gastric artificial defect after endoscopic submucosal dissection (ESD).

A 70-year-old woman presented with early gastric cancer located in the lower body. Standard ESD was completed, leaving a 50-mm-diameter defect. After written informed consent, a dual-channel endoscopic closure method was carried out using a transparent hood fitted (Impact Shooter, 16647L type; Top Co., Tokyo, Japan)<sup>4</sup> (Fig. 1), with the aim of preventing delayed complications (Video S1). First, a dual knife (KD-650L; Olympus, Tokyo, Japan, Japan) was used to create small mucosal depressions in both sides of the defect.<sup>5</sup> Second, the large defect was approximated using jumbo grasping forceps (FG-47L-1; Olympus) to grasp both depressions through the Impact Shooter channel. Finally, a hemoclip (Rotatable Clip Fixing Device HX-110QR, HX-610-090L; Olympus) was implanted through the endoscopic channel (GIFQ260J; Olympus) to close the defect while pulling the grasping forceps. The procedure provided complete closure of the entire defect (Fig. 2). Seven days later, the defect with hemoclips remained closed, and the patient could be discharged. This method has the advantage



**Figure 1** A dual-channel endoscopic closure method was carried out using a transparent hood fitted with a mucosal forceps channel (Impact Shooter, 16647L type; Top Co., Tokyo, Japan).

of enabling reliable layer-to-layer closure. Additionally, complete defect closure can shorten hospitalization time.

This method may be an effective and safe option for completely closing a large artificial gastric defect.

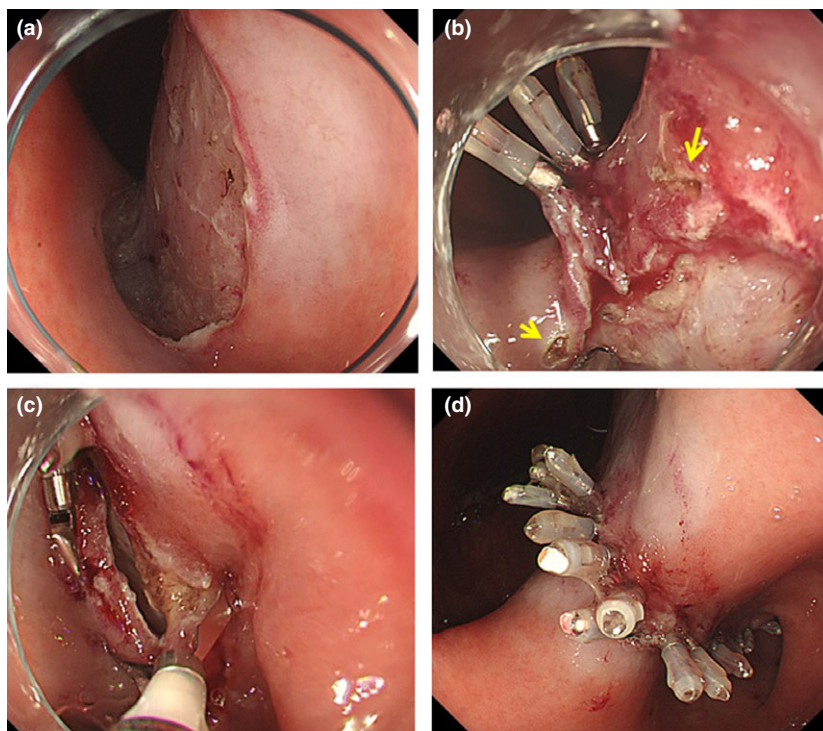
Authors declare no conflicts of interest for this article.

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**Figure 2** (a) Standard endoscopic submucosal dissection was completed, leaving a 50-mm-diameter defect in the lower body at the lesser curvature. (b) A dual knife was used to create small mucosal depressions in both sides of the gastric defect. Yellow arrows show both small depressions. (c) The large gastric defect was approximated by grasping both depressions with jumbo grasping forceps introduced through the Impact Shooter channel (16647L type; Top Co., Tokyo, Japan). A hemoclip introduced through the endoscopic channel was used to close the defect while the grasping forceps were pulled to the side. (d) The entire defect is completely closed.

## SUPPORTING INFORMATION

**A**DDITIONAL SUPPORTING INFORMATION may be found in the online version of this article at the publisher's web site.

**Video S1** Video showing the procedure used to close the entire 50-mm-diameter gastric defect using a side-channel hood with a guide tube.