

## New modified hook device for endoloop closure of the mucosal defect after gastric endoscopic submucosal dissection

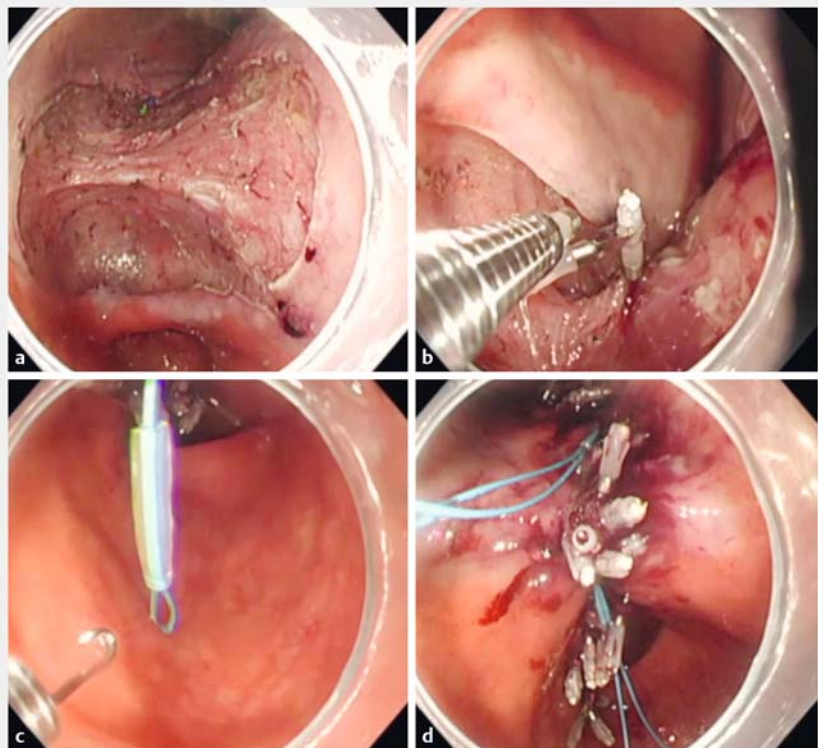
Closing the submucosal defect after gastric endoscopic submucosal dissection (ESD) may reduce postoperative adverse events [1]. In recent years, various methods for mucosal closure after gastric ESD have been developed [2,3]. However, gastric mucosal defect closure is difficult as the submucosa and muscularis are thicker than in other parts of the digestive tract. Recently, mucosal defect closure using an endoloop was reported [4]. However, it is not common in Japan, and it is difficult to grasp and tighten the length of the endoloop because it is not fixed. Therefore, we developed a new and modified hook device for endoloop closure to grasp the endoloop tail.

The modified hook device is created from the hook device of the endoloop (HX-400U-30; Olympus, Tokyo, Japan). First, the hook part of the hook device is cut. The wire is then bent bluntly into a “J” shape. This new modified hook device makes it easier to grasp the endoloop tail. ▶ **Video 1** shows how to make the new modified hook device, followed by its use for closure of an actual mucosal defect after ESD.

One of our patients had an early gastric cancer of 50 mm in diameter. ESD was performed to resect the lesion. We initially used the clip-on-clip closure method [5] to reduce the mucosal defect area after ESD but could not achieve complete closure. Therefore, we tried closing the mucosal defect using the new modified hook device for endoloop closure. First, the endoloop was fixed with clips around the mucosal defect. Thereafter, the endoloop tail was grasped with the new modified hook device, and the mucosal defect was then closed. In this patient, the mucosal defect was large; however, complete closure of the mucosal defect after ESD using two endoloops was possible (▶ **Fig. 1**). The patient was discharged without any postoperative adverse events.



▶ **Video 1** Video showing how to make the new modified hook device and its use to close an actual submucosal defect after endoscopic submucosal dissection.



▶ **Fig. 1** Endoscopic views showing: **a** the mucosal defect after endoscopic submucosal dissection (ESD) of an early gastric cancer (50 mm in diameter); **b** closure with the clip-on-clip closure method using a normal clip on the mucosal defect; **c** the endoloop tail being grasped using the new modified hook device; **d** the post-ESD mucosal defect after its successful closure with two endoloops.

This new modified hook device makes it possible to grasp the endoloop tail more safely and easily.

Endoscopy\_UCTN\_Code\_CPL\_1AJ\_2AG

### Competing interests

None

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DOI <https://doi.org/10.1055/a-0624-2016>

Published online: 12.6.2018

*Endoscopy* 2018; 50: E222–E223

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Stuttgart · New York

ISSN 0013-726X

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