




DEN Video Article

Successful intervention using multiloop traction for cases with difficult biliary cannulation due to periampullary diverticula

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BRIEF EXPLANATION

TRANSPAPILLARY BILIARY CANNULATION is a basic technique for endoscopic retrograde cholangiopancreatography. However, it can become difficult under

certain conditions such as periampullary diverticula (PAD) or duodenal invasions to the neoplasm.¹ We previously reported the effectiveness of the multiloop (M-loop) method for endoscopic submucosal dissection. The M-loop method causes a traction force by connecting the lesion and the

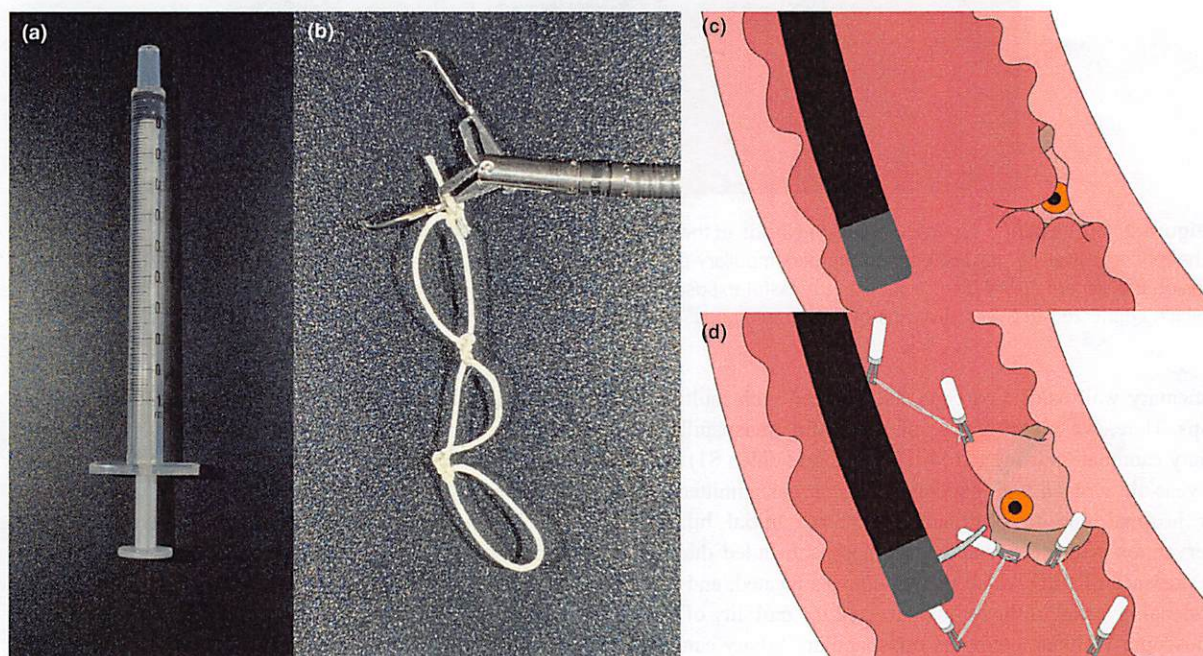


Figure 1 (a) The surgical suture is tied around this 1.0 cc syringe to create M-loop. (b) M-loop with triple loops tied to SureClip (Micro-Tech, Nanjing, China). (c) Illustration of difficult biliary cannulation because the papilla was located inside the periampullary diverticula. (d) Illustration of difficult biliary cannulation using M-loop method, which allows good visualization of the biliary orifice, so that biliary cannulation can be achieved.

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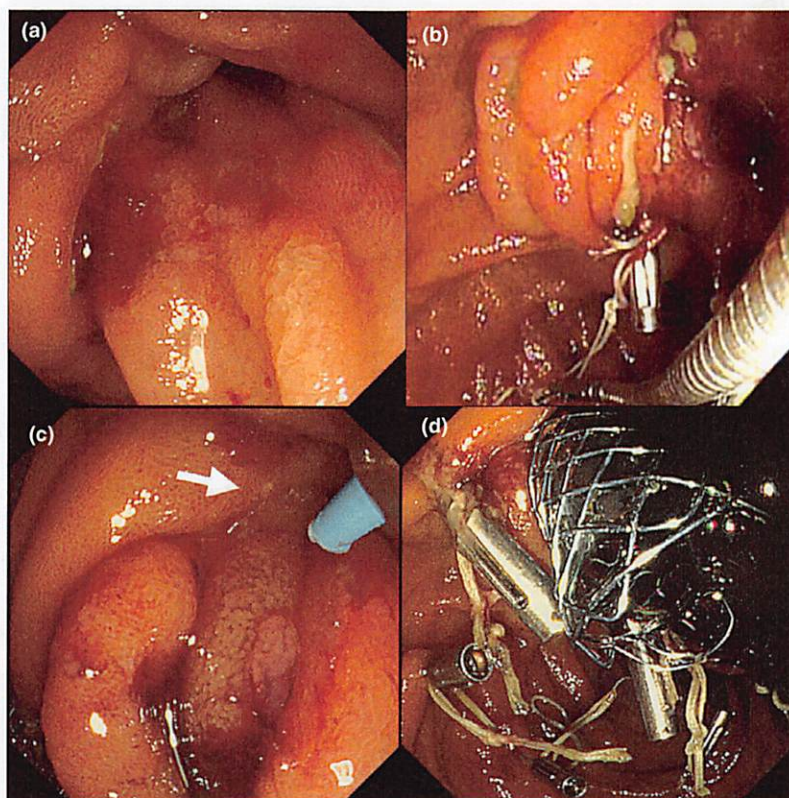


Figure 2 (a) The papilla of Vater was located inside of the periampullary diverticula and the orifice was completely hidden under the mucosal swelling. (b) The edge of the periampullary diverticula was pulled with a multiloop in order to draw out the papilla inside the periampullary diverticula. (c) Successful exposure of the papilla. (d) Deployment of a biliary metal stent and threads which connected between the clips of three multiloops. The threads were cut before the end of the procedure.

alimentary wall using two clips and a thread with multiple loops. Here, we report a case of successful transpapillary biliary cannulation using the M-loop method (Video S1).² A 66-year-old woman with pancreatic cancer was admitted to our hospital due to obstructive jaundice. Initial biliary intervention with the transpapillary approach failed due to the presence of PAD where the papilla was located, and the duodenal invasion of the tumor restricted the mobility of the endoscope. We then attempted transpapillary biliary cannulation using the M-loop method. We pulled the edge of the PAD with two M-loops to draw out the papilla inside the PAD. We then towed the fold near the papilla with an additional M-loop to sufficiently expose the papilla. Finally, successful biliary intervention was achieved via the exposed papilla, and biliary stenting was deployed using a metal stent after endoscopic sphincterotomy. The threads used for the M-loop methods were cut after biliary stenting. The total

procedural time was 60 minutes including 30 minutes to expose the papilla and 10 minutes for biliary cannulation due to the severe mucosal swelling. The traction force near the papilla has been reported to facilitate biliary cannulation.^{3,4} The M-loop method causes traction easily without restriction of the endoscopic position. Moreover, it is easily manufactured and cheap. In conclusion, the M-loop method is effective for the treatment of patients with difficult biliary cannulation, especially in cases of malpositioning of the papilla of Vater (Figs 1,2).

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CONFLICT OF INTEREST

AKIO KATANUMA RECEIVED honoraria as lecture fee from Olympus Co., Tokyo, Japan, and is currently an Associate Editor of *Digestive Endoscopy*.

REFERENCES

- 1 Berry R, Han JY, Tabibian JH. Difficult biliary cannulation: historical perspective, practical updates, and guide for the endoscopist. *World J Gastrointest Endosc* 2019; **11**: 5–21.
- 2 Suzuki Y, Tanuma T, Nojima M *et al*. Multiloop as a novel traction method in accelerating colorectal endoscopic submucosal dissection. *Gastrointest Endosc* 2020; **91**: 185–90.
- 3 Fujita N, Noda Y, Kobayashi G *et al*. A. ERCP for intradiverticular papilla: Two-devices-in-one-channel method. *Gastrointest Endosc* 1998; **48**: 517–20.

- 4 Inoue R, Kawakami H, Kubota Y, Ban T. Endoscopic biliary intervention using traction devices for periampullary diverticulum: A case report. *Intern Med* 2019; **58**: 2797–801.

SUPPORTING INFORMATION

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

Video S1 Video of successful intervention using multi-loop traction for a case with difficult biliary cannulation due to periampullary diverticula. We pulled the edge of the periampullary diverticula (PAD) with two M-loops to draw out the papilla inside the PAD. Moreover, we towed the fold near the papilla with an additional M-loop to expose the papilla sufficiently. Finally, we achieved biliary cannulation.