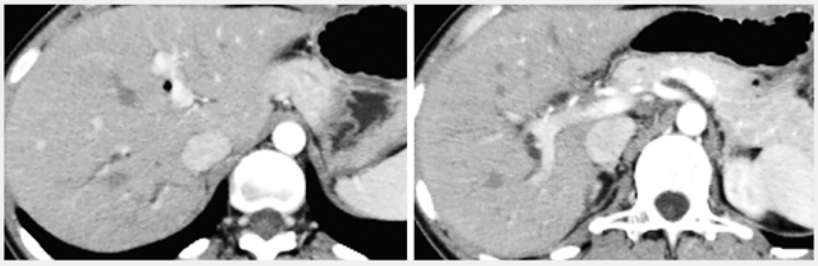
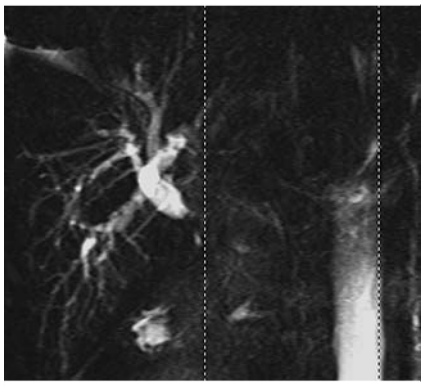
# Salvage technique for endoscopic stent removal using a thin-tipped balloon catheter during endoscopic ultrasound-guided hepaticoduodenostomy

Endoscopic ultrasound-guided hepaticoduodenostomy (EUS-HDS) is sometimes performed for right intrahepatic duct drainage after failure of endoscopic retrograde cholangiopancreatography (ERCP) [1]. We experienced difficulty in removing a plastic stent, during EUS-HDS. Here, we describe a salvage technique for endoscopic stent removal using a thin-tipped balloon catheter during EUS-HDS.

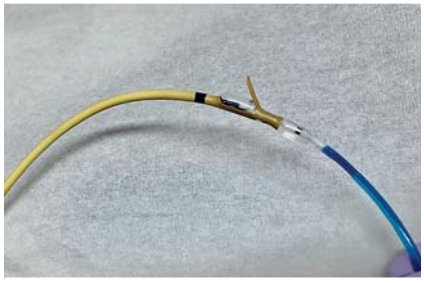
A 34-year-old woman was admitted to our hospital for treatment of repeated cholangitis. She underwent surgery for congenital biliary dilatation in childhood, and Roux-en-Y reconstruction with hepaticojejunostomy was performed. After surgery, she suffered from chronic repeated cholangitis because of anastomotic stenosis of the right intrahepatic duct (▶ **Fig. 1**, ▶ **Fig. 2**). ERCP using a single-balloon enteroscope failed. EUS-HDS was performed for the right intrahepatic duct. The bile duct was stiff because of repeated cholangitis; therefore, we used a 6-Fr wire-guided cautery dilator for dilation. We attempted to insert a 7-Fr plastic stent (Through and Pass; Gadelius Medical, Co., Ltd., Tokyo, Japan) but could not pass it through the bile duct wall due to insufficient dilation. We tried to remove the stent, but failed; the distal flap of the stent was hooked to the outer duodenal wall. Few methods for plastic stent removal during EUS-HDS while maintaining the guidewire have been reported. We elected to use a balloon catheter. The inner sheath of the stent was pulled out and a thin-tipped balloon catheter (4-mm-diameter REN; Kaneka Medical, Osaka, Japan) was inserted into the stent inside the scope channel. We inflated the balloon inside the stent and succeeded in pulling it out (▶ **Video 1**, ▶ **Fig. 3**) [2, 3]. Thereafter, we dilated the fistula again and succeeded in inserting a 7-Fr plastic stent without complications.



▶ **Fig. 1** Abdominal computed tomography showed pneumobilia of the left intrahepatic duct and dilation of the right intrahepatic duct.



▶ **Fig. 2** Magnetic resonance cholangiopancreatography showed dilated right intrahepatic duct; the left intrahepatic duct could not be detected because of pneumobilia.



▶ **Fig. 3** A thin-tipped balloon catheter was inflated inside the stent and firmly attached.

This salvage technique is useful because it removes the stent while maintaining the guidewire, and bile leakage can be avoided when narrowing of the bile duct following fistula dilation makes re-puncture of the duct difficult.

Endoscopy_UCTN_Code_TTT_1AS_2AD

## Competing interests

The authors declare that they have no conflict of interest.

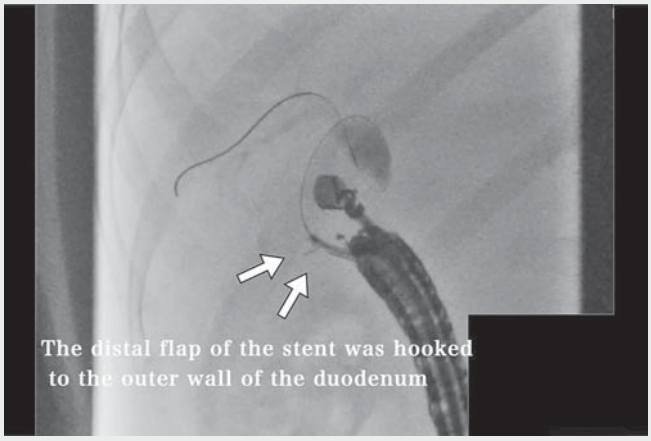
## The authors

**Tomohiro Ishii[1], Takashi Kaneko[2], Yuichi Suzuki[1], Masaki Nishimura[2], Kazuya Sugimori[2], Ichiro Kawana[1], Shin Maeda[3]**

1 Department of Gastroenterology, Saiseikai Yokohamashi Nanbu Hospital, Yokohama, Japan
2 Gastroenterological Center, Yokohama City University Medical Center, Yokohama, Japan
3 Department of Gastroenterology, Yokohama City University Graduate School of Medicine, Yokohama, Japan

## Corresponding author

**Tomohiro Ishii, MD**
Department of Gastroenterology, Saiseikai Yokohamashi Nanbu Hospital, 3-2-10 Konandai Konan-ku, Yokohama, Kanagawa 234-0054, Japan
ishiito@nanbu.saiseikai.or.jp




**Video 1** Salvage technique for endoscopic stent removal using a thin-tipped balloon catheter during endoscopic ultrasound-guided hepaticoduodenostomy.

## References

[1] Park SJ, Choi JH, Park DH et al. Expanding indication: EUS-guided hepaticoduodenostomy for isolated right intrahepatic duct obstruction (with video). Gastrointest Endosc 2013; 78: 374–380
[2] Calcara C, Broglia L, Comi G et al. Plastic biliary stent migration during multiple stents placement and successful endoscopic removal using intra-stent balloon inflation technique: a case report and literature review. Am J Case Rep 2016; 17: 65–69
[3] Fujimori N, Yasumori S, Oono T. Successful endoscopic retrieval of an embedded biliary stent using an intra-stent balloon inflation technique assisted by direct per-oral cholangioscopy. Dig Endosc 2021; 33: e97–e99

## Bibliography

Endoscopy 2022; 54: E566–E567
**DOI** 10.1055/a-1694-3617
**ISSN** 0013-726X
**published online** 15.12.2021

Georg Thieme Verlag KG, Rüdigerstraße 14, 70469 Stuttgart, Germany

**ENDOSCOPY E-VIDEOS**
**https://eref.thieme.de/e-videos**

*Endoscopy E-Videos* is an open access online section, reporting on interesting cases and new techniques in gastroenterological endoscopy. All papers include a high quality video and all contributions are freely accessible online. Processing charges apply (currently EUR 375), discounts and wavers acc. to HINARI are available.

This section has its own submission website at https://mc.manuscriptcentral.com/e-videos