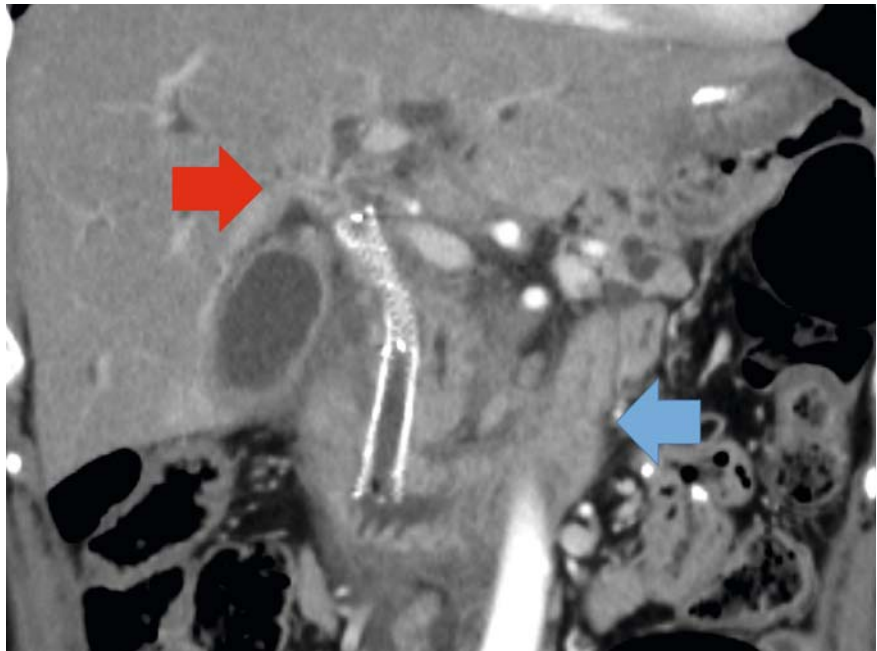


## Re-intervention with endoscopic ultrasound-guided hepaticogastrostomy for unresectable hilar biliary drainage using a multipath occlusion balloon

Endoscopic ultrasound (EUS)-guided hepaticogastrostomy (EUS-HGS) and antegrade stenting (EUS-AS) have been developed as alternative biliary drainage methods; however, treating unresectable malignant hilar biliary strictures remains challenging [1–3]. We successfully performed re-intervention for malignant hilar biliary drainage after EUS-HGS using a multipath occlusion balloon.

A 46-year-old woman who was on medication for a postoperative recurrence of gastric cancer presented with jaundice. She had previously undergone double-balloon enteroscope (DBE)-assisted biliary drainage with a self-expandable metal stent (SEMS) for malignant biliary stricture of the lower bile duct.

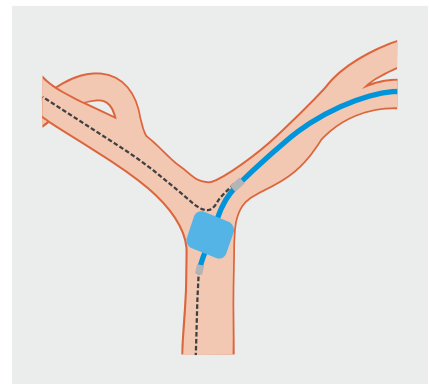
Contrast-enhanced computed tomography (CT) showed strictures of the hilar bile duct and duodenum (► Fig. 1) associated with dissemination of the gastric cancer. EUS-HGS was performed (► Fig. 2), and a 7-Fr plastic stent (TYPE-IT; Gadelius Medical, Tokyo, Japan) was placed into the B3 bile duct [4]. However, the patient's jaundice was not improved, and re-intervention was required. A 0.025-inch guidewire was placed into the duodenum beyond the papilla, and the plastic stent was removed. A second 0.025-inch guidewire was placed into the B5 bile duct using a multipath occlusion balloon (Bouncer; Cook Medical, Tokyo, Japan) (► Fig. 3). This balloon has a multilumen located at either end of the balloon, which enables guidewires to be passed easily into crooked bile ducts (► Fig. 3 and ► Fig. 4 a; ► Video 1). A Zilver 635 biliary SEMS (Cook Medical, Tokyo, Japan) was introduced over the first guidewire and placed into the B5 bile duct, bridging the right and left hepatic ducts (► Fig. 4 b). Finally, a modified Niti-S GIOBOR biliary stent (Century Medical, Tokyo, Japan) was placed into the B3 bile duct (► Fig. 4 c). The jaundice subsequently improved, and no adverse events occurred.



► Fig. 1 Contrast-enhanced computed tomography image showing strictures of the hilar bile duct (red arrow) and duodenum (blue arrow) associated with the dissemination of gastric cancer.



► Fig. 2 Endoscopic ultrasound-guided hepaticogastrostomy was performed and a 7-Fr plastic stent was placed into the B3 bile duct.



► Fig. 3 The multipath occlusion balloon (Bouncer; Cook Medical, Tokyo, Japan) has a multilumen located at either end of the balloon, which enables guidewires to be passed easily into crooked bile ducts.

Endoscopy\_UCTN\_Code\_TTT\_1AR\_2AZ

### Competing interests

None



► **Fig. 4** Radiographic images showing: **a** a guidewire placed into the B5 bile duct using a multipath occlusion balloon (red arrow); **b** a self-expandable metal stent (SEMS) introduced over the first guidewire and placed into the B5 bile duct, bridging the right and left hepatic ducts; **c** a second SEMS placed into the B3 bile duct bridging the hepatogastric stoma.



► **Video 1** Re-intervention with endoscopic ultrasound-guided hepaticogastrostomy (EUS-HGS). Drainage of the right hepatic duct was challenging, but we achieved technical success using a multipath occlusion balloon.

#### The authors

**Daisuke Uchida, Hironari Kato, Hiroyuki Okada**

Department of Gastroenterology, Okayama University Hospital, Okayama, Japan

#### Corresponding author

**Daisuke Uchida, MD, PhD**

Department of Gastroenterology, Okayama University Hospital, 2-5-1 Shikata-cho, Okayama 700-8558, Japan  
 Fax: +81-86-2255991  
 d.uchida0309@gmail.com

## References

- [1] Paik WH, Lee NK, Nakai Y et al. Conversion of external percutaneous transhepatic biliary drainage to endoscopic ultrasound-guided hepaticogastrostomy after failed standard internal stenting for malignant biliary obstruction. *Endoscopy* 2017; 49: 544–548
- [2] Ogura T, Kitano M, Takenaka M et al. A multicenter prospective evaluation study of endoscopic ultrasound-guided hepaticogastrostomy combined with antegrade stenting (with video). *Dig Endosc*. doi:10.1111/den.12976
- [3] Koshitani T, Nakagawa S, Itoh Y. EUS-guided antegrade stent placement for unresectable malignant hilar biliary strictures by use of a stent-in-stent method. *Gastrointest Endosc* 2018; 87: 309–310
- [4] Umeda J, Itoi T, Tsuchiya T et al. A newly designed plastic stent for EUS-guided hepaticogastrostomy: a prospective preliminary feasibility study (with videos). *Gastrointest Endosc* 2015; 82: 390–396

### Bibliography

DOI <https://doi.org/10.1055/s-0044-100719>

Published online: 2.2.2018

*Endoscopy* 2018; 50: 450–452

© Georg Thieme Verlag KG

Stuttgart · New York

ISSN 0013-726X

### ENDOSCOPY E-VIDEOS

<https://eref.thieme.de/e-videos>



*Endoscopy E-Videos* is a free 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.

This section has its own submission website at

<https://mc.manuscriptcentral.com/e-videos>