Endoscopic ultrasound-guided antegrade bile duct stone treatment followed by direct peroral transhepatic cholangioscopy in a patient with Roux-en-Y reconstruction

Endoscopic ultrasound (EUS)-guided antegrade treatment for biliary disorders was developed for patients with an altered anatomy [1 – 5]. This report describes a case of successful EUS-guided bile duct stone (BDS) treatment followed by direct peroral transjejunal-hepatic cholangioscopy in a patient with Roux-en-Y reconstruction.

An 80-year-old woman with a BDS and a history of total gastrectomy with Roux-en-Y reconstruction was admitted to the Hokkaido University Hospital. The papilla could not be reached even with balloon enteroscopy. Therefore, transhepatic EUS-guided antegrade BDS treatment was attempted.

A B3 branch duct was punctured using a 19-gauge needle (SonoTip Pro Control; Medi-Globe GmbH, Rosenheim, Germany), and a 0.025-inch guidewire (VisiGlide 2; Olympus Medical Systems, Tokyo, Japan) was placed (● Video 1). A 6-Fr wire-guided diathermic dilator (Cysto-GastroSet; Endo-Flex GmbH, Voerde, Germany) was used to dilate the tract. Papillary balloon dilation (Hurricane RX Biliary Balloon Dilatation Catheter; Boston Scientific Japan, Tokyo, Japan) was also performed under fluoroscopic guidance according to the size of the distal bile duct (● Fig. 1a, ● Video 1). The retrieval balloon (Extractor Pro RX retrieval balloon catheter, 15–18 mm; Boston) and mechanical lithotripter (Litho Crush V, BML-V437QR-30; Olympus) both failed to extract the stone (● Video 1). A 6-Fr nasobiliary drainage catheter (NBDC; Flexima ENBD Catheter; Boston Scientific Japan) was placed across the papilla for drainage into the duodenum and to facilitate a rendezvous procedure using balloon enteroscopy (● Fig. 1b).

The next day, the patient developed acute cholangitis. Re-intervention through the fistula tract was attempted. After advancing the guidewire into the bile duct, the BDS was captured by a standard basket catheter (FG-V435P; Olympus) (● Fig. 1c, ● Video 1). However, the basket catheter could not pass the papilla and was impacted instead (● Video 1). Emergency, di-
Endoscopic ultrasound (EUS)-guided bile duct stone (BDS) treatment and direct, peroral, transjejunal-hepatic cholangioscopy in a patient with Roux-en-Y reconstruction. First, EUS-guided antegrade papillary balloon dilation was performed using a standard balloon catheter. An attempt was made to retrieve the stone using the balloon catheter. The attempt failed and a nasobiliary catheter was placed across the papilla for drainage. Second, an attempt was made to retrieve the stone using a standard basket catheter. Third, this attempt at stone retrieval also failed and therefore emergency, direct, peroral lithotripsy using a mechanical lithotriptor was performed to crush the stone. An endoscopic antegrade nasobiliary catheter was placed. Finally, direct, peroral, transhepatic cholangioscopy was performed 6 days later to confirm clearance of stones or debris.

Complete BDS clearance was confirmed (Fig. 1d, Video 1). An EUS-guided rendezvous procedure is generally performed when EUS-guided antegrade BDS treatment fails. However, endoscopic re-intervention through the fistula tract should be considered in patients with altered gastrointestinal anatomy. To our knowledge, this is the first report of a troubleshooting technique for BDS impaction using direct, peroral, mechanical lithotripsy and confirmation of BDS clearance by direct antegrade cholangioscopy following EUS-guided biliary drainage. Although challenging, this stone extraction technique combined with EUS-guided antegrade cholangiography and cholangioscopy (EUS-guided ACC) should be recognized as a treatment for BDS in patients with altered gastrointestinal anatomy.

Endoscopic ultrasound-guided antegrade papillary balloon dilation was performed using a standard balloon catheter. Guided antegrade cholangiography and extraction technique combined with EUS-guided antegrade cholangiography and cholangioscopy (EUS-guided ACC) should be recognized as a treatment for BDS in patients with altered gastrointestinal anatomy.

Competing interests: None

**References**


**Bibliography**

DOI http://dx.doi.org/10.1055/s-0034-1392507

Endoscopy 2015; 47: E340–E341

© Georg Thieme Verlag KG
Stuttgart · New York
ISSN 0013-726X

**Corresponding author**

Hiroshi Kawakami, MD, PhD
Department of Gastroenterology and Hepatology
Hokkaido University Hospital
Kita 14, Nishi 5, Kita-ku
Sapporo 060-8648
Japan
Fax: +81-11-7067867
hiropon@med.hokudai.ac.jp