

Removal of a broken percutaneous transhepatic biliary drainage catheter by cholangioscopy through a lumen-apposing metal stent used for choledochoduodenostomy

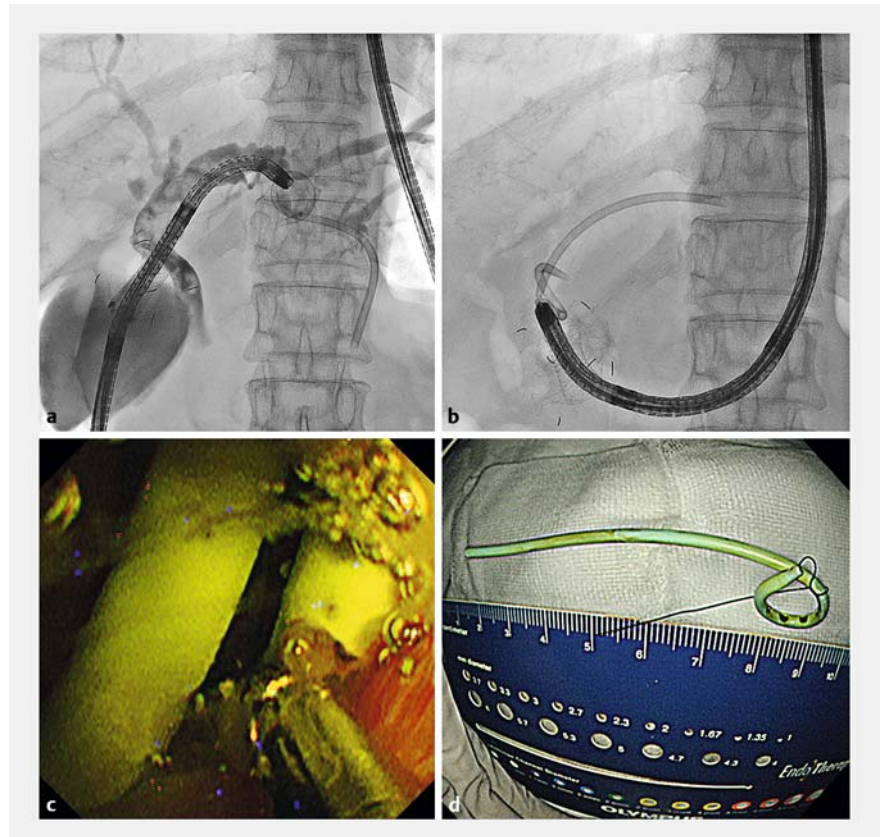
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► **Fig. 1** Computed tomographic scan showing the broken percutaneous transhepatic biliary drainage catheter buried in the abdominal wall.

Endoscopic ultrasound-guided choledochoduodenostomy (EUS-CDS) using a lumen-apposing metal stent (LAMS) is an alternative procedure for biliary decompression in patients with distal malignant biliary strictures [1–4]. Although this approach results in a new connecting passage into the bile duct, there are few reports of direct visualization into the bile duct through a LAMS used for CDS [5]. We present a procedure for the removal of a broken percutaneous transhepatic biliary drainage (PTBD) catheter through a LAMS used for CDS.

A 53-year-old woman with a history of schizophrenia was admitted with abdominal pain and jaundice. She had been diagnosed with pancreatic head cancer 1 month previously and underwent PTBD to decompress the malignant biliary strictures. Two days prior to admission, the patient had cut the PTBD catheter with a knife, after which she developed abdominal pain and jaundice. Computed tomography revealed the distal end of the broken catheter buried in the abdominal wall (► **Fig. 1**). Removal of the catheter via a percutaneous tract was not possible. Endoscopic retrograde cholangiopancreatography was also not possible, because pancreatic cancer had obstructed the second duodenal portion. Instead, EUS-CDS was performed using a LAMS



► **Fig. 2** Removal of the broken percutaneous transhepatic biliary drainage (PTBD) catheter by direct peroral cholangioscopy using a multibending ultraslim endoscope through a lumen-apposing metal stent (LAMS). **a, b** Radiographic images showing (a) insertion of the multibending ultraslim endoscope into the intrahepatic duct through the LAMS and (b) withdrawal of the PTBD catheter through the LAMS. **c** Endoscopic image of the PTBD catheter being grasped by a 2-mm forceps. **d** The successfully removed broken PTBD catheter.

(Spaxus; Taewoong Medical, Ilsan, South Korea). Four days later, direct peroral cholangioscopy using a multibending ultraslim endoscope (CHF-Y0010; Olympus Medical Systems, Tokyo, Japan) was performed through the LAMS (► **Fig. 2 a, b**). Endoscopy revealed the broken catheter in the left intrahepatic bile duct. The catheter was grasped using a 2-mm forceps (► **Fig. 2 c**) and successfully removed via endoscopic withdrawal through the LAMS (► **Fig. 2 d**; ► **Video 1**).

This report describes the safe removal of a broken PTBD catheter via peroral cholangioscopy after EUS-CDS. The LAMS served as a connection route enabling a less invasive approach. The creation of an anastomosis between the enteric and biliary systems using a LAMS not only allows biliary drainage but also provides access for advanced endoscopic intervention.

Endoscopy_UCTN_Code_CPL_1AK_2AH



Video 1 Removal of a broken percutaneous transhepatic biliary drainage catheter by direct peroral cholangioscopy using a multibending ultraslim endoscope through a lumen-apposing metal stent used for choledochoduodenostomy.

a systematic review and meta-analysis.

Endoscopy 2021; 53: 1037–1047

- [4] Choi HJ, Moon JH, Lee YN et al. Direct insertion of an ultra-slim upper endoscope for cholangioscopy in patients undergoing choledochoduodenostomy. Dig Endosc 2015; 27: 771–774
- [5] Yoo HW, Moon JH, Lee YN et al. Peroral cholecystoscopy using a multibending ultraslim endoscope through a lumen-apposing metal stent for endoscopic ultrasound-guided gallbladder drainage: a feasibility study. Endoscopy 2022; 54: 384–388

Bibliography

Endoscopy 2023; 55: E373–E374

DOI 10.1055/a-1996-0223

ISSN 0013-726X

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Competing interests

The authors declare that they have no conflict of interest.

Funding

SoonChunHyang University Research Fund

The authors

Il Sang Shin^{*}, Yeon Han Song^{*}, Jong Ho Moon, Yun Nah Lee, Jun Ho Myeong

Digestive Disease Center and Research Institute, Department of Internal Medicine, SoonChunHyang University School of Medicine, Bucheon, Korea

Corresponding author

Jong Ho Moon, MD, PhD

SoonChunHyang University School of Medicine, Digestive Disease Center, SoonChunHyang University Bucheon Hospital, 170 Jomaru-ro, Bucheon, Gyeonggi-do, 14584, Korea
jymoon@schmc.ac.kr

References

- [1] Anderloni A, Fugazza A, Troncone E et al. Single-stage EUS-guided choledochoduodenostomy using a lumen-apposing metal stent for malignant distal biliary obstruction. Gastrointest Endosc 2019; 89: 69–76
- [2] Teoh AYB, Kongkam P, Bapaye A et al. Use of a novel lumen apposing metallic stent for drainage of the bile duct and gallbladder: long term outcomes of a prospective international trial. Dig Endosc 2021; 33: 1139–1145
- [3] Amato A, Sinagra E, Celsa C et al. Efficacy of lumen-apposing metal stents or self-expandable metal stents for endoscopic ultrasound-guided choledochoduodenostomy:

* Il Sang Shin and Yeon Han Song contributed equally to this article and are considered joint first authors.