

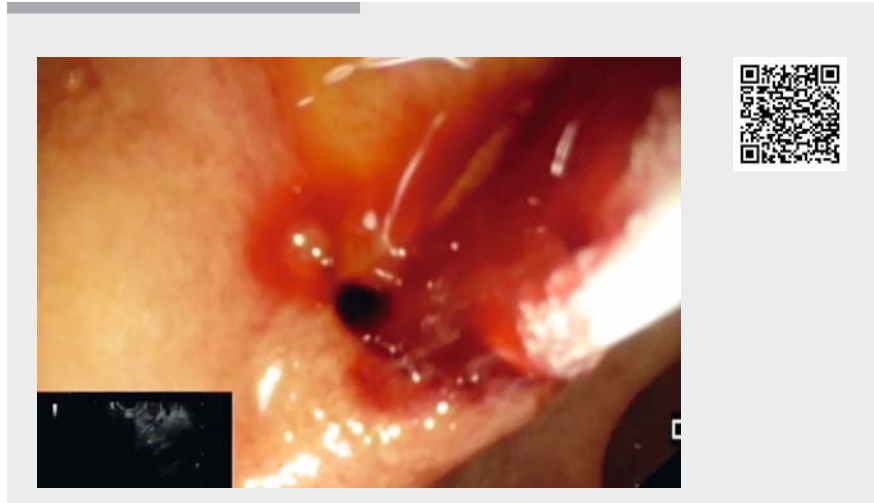
Self-expandable metal stent placement as a rescue procedure for lumen-apposing metal stent misdeployment in biliary drainage

We present the case of an 85-year-old man with jaundice due to cephalopancreatic cancer and a previous failed endoscopic retrograde cholangiopancreatography (ERCP) due to infiltration of the papilla (► **Fig. 1**). Endoscopic ultrasound-guided biliary drainage (EUS-BD) with a transbulbar approach was scheduled.

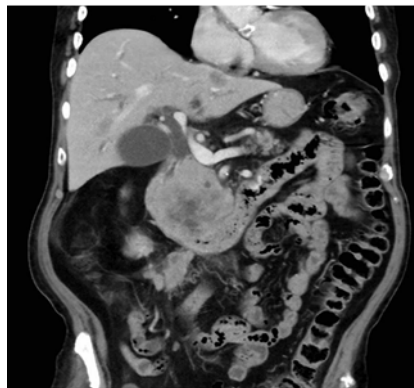
EUS showed distal stricture of the common bile duct (CBD) with retrodilation up to 13 mm in the proximal CBD tract. The biliary tract was accessed using a 19-gauge needle for subsequent over-the-guidewire stent placement due to the small CBD target (► **Fig. 2**).

After CBD puncture and injection of contrast medium, a 0.035-inch guidewire was placed in the intrahepatic bile ducts (► **Fig. 3**). A 6×8-mm electrocautery-enhanced lumen-apposing metal stent (LAMS; Hot Axios; Boston Scientific Corp., Marlborough, Massachusetts, USA) was introduced and the distal flange was released inside the bile duct under EUS guidance. The proximal flange was deployed using the intrachannel release technique [1]. However, as the endoscope was gently withdrawn, the proximal flange misdeployed into the abdominal cavity. We removed the delivery system leaving the guidewire inside the CBD, and inserted a 10×60-mm fully covered self-expandable metal stent (SEMS) through the iatrogenic fistula and across the misdeployed LAMS: the distal end of the SEMS was released into the proximal CBD and the proximal end was at the level of the bulb; outflow of bile and contrast medium was confirmed with no leakages (► **Fig. 4**, ► **Video 1**).

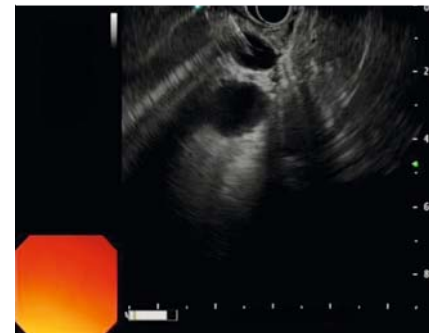
In the following days, no further adverse events were observed, and rapid reduction of bilirubin blood levels occurred. EUS-BD using LAMS is an effective and safe procedure when ERCP fails, and is currently a commonly performed technique [2–4]. However, technical failure of EUS-BD can occur, particularly when



► **Video 1** Rescue procedure for lumen-apposing metal stent misdeployment in endoscopic ultrasound biliary drainage.



► **Fig. 1** Computed tomography scan showing the cephalopancreatic mass causing distal stricture with proximal biliary tree dilation.



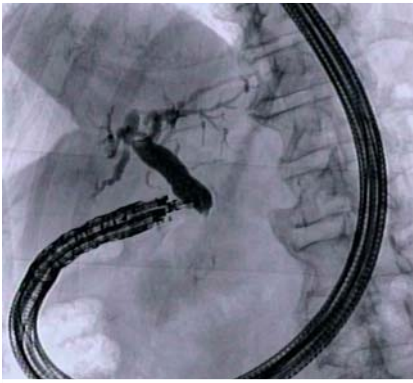
► **Fig. 2** Endoscopic ultrasound image showing puncture of the dilated common bile duct with a 19-gauge needle.

CBD diameters are narrow. We therefore recommend that these procedures should be performed by endoscopists with pancreaticobiliary skills because procedural complications may require techniques and accessories usually used during ERCP.

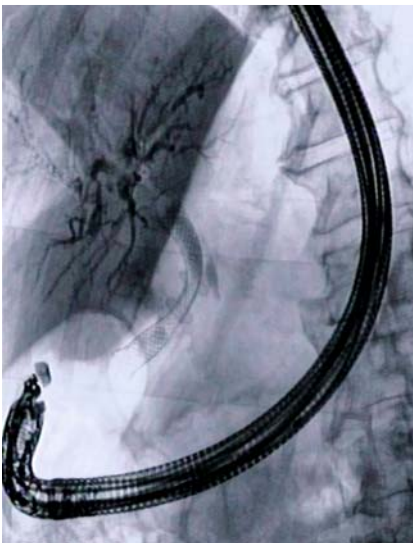
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Competing interests

Prof. Alessandro Repici is a consultant for Boston Scientific, Fujifilm. Dr. Andrea Anderloni is a consultant for Boston Scientific, Olympus. The other authors declare that they have no conflict of interest.



► **Fig. 3** Fluoroscopic image after contrast medium instillation showing complete stenosis of the distal common bile duct.



► **Fig. 4** Final fluoroscopic view of the biliary self-expandable metal stent positioned coaxially with the previously misdeployed lumen-apposing metal stent.

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