Endoscopic ultrasound-guided pancreaticogastrostomy using a lumen-apposing metal stent plus a double-pigtail plastic stent

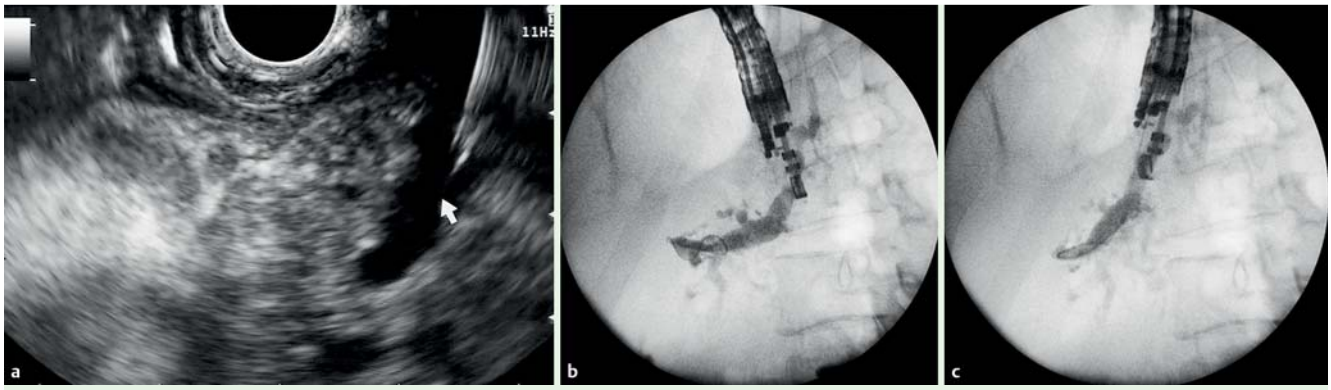


Fig. 1 Endoscopic ultrasound (EUS)-guided access to the pancreatic duct. **a** Transgastric puncture of the dilated pancreatic duct using a 19-gauge needle (Expect Flex; Boston Scientific, Marlborough, Massachusetts, USA). **b** EUS-guided pancreatography revealed a dilated, tortuous main pancreatic duct, and severe stricture in the cephalic pancreatic area. A 0.035-inch guidewire was advanced through the pancreatic duct. **c** Fluoroscopic view of the 6 Fr cystotome over the guidewire.

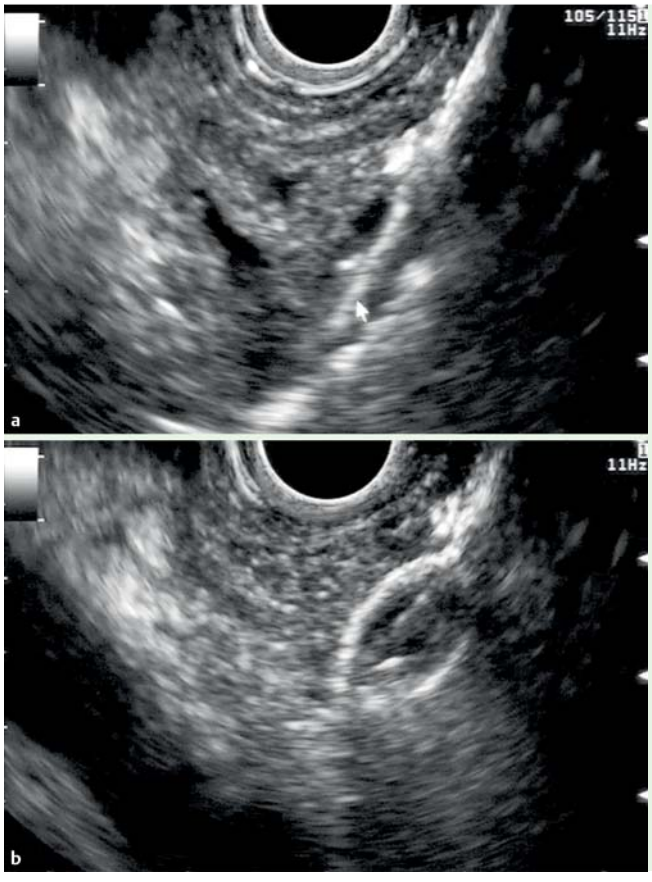
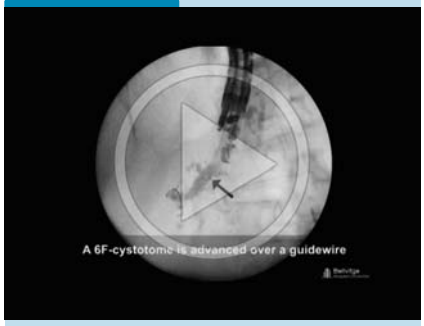


Fig. 2 Placement of a lumen-apposing metal stent (LAMS). **a** Endoscopic ultrasound (EUS) image of the HotAXIOS catheter (9 Fr; Boston Scientific, Marlborough, Massachusetts, USA), energized and inserted inside the pancreatic duct. **b** EUS-guided deployment of the distal end of the LAMS (6 × 8 mm, HotAXIOS). Image shows the LAMS distal flange located inside the pancreatic duct.

Video 1



Endoscopic ultrasound-guided transluminal pancreatic duct drainage (pancreaticogastrostomy) using a lumen-apposing stent plus a double-pigtail plastic stent.

Endoscopic ultrasound (EUS)-guided pancreatic duct drainage remains one of the most technically challenging endosonography interventions. There is a lack of specific devices for the technique, and the question of which kind of stent should be used remains controversial: plastic (straight, single or double pigtail) or self-expanding metal [1 – 4].

The lumen-apposing metal stent (LAMS) has been used in different scenarios (transmural drainage of collections and EUS-guided anastomosis). There are various sizes of LAMS available, and some of them, specifically designed to be used in the bile duct, are small (e.g. 6 × 8 mm) [5]. To our knowledge, this is the first report to date of successful EUS-guided pancreatic duct drainage using a LAMS plus a pigtail stent. A 44-year-old man, with chronic pancreatitis and pancreatic duct stricture causing abdominal pain, was referred to our unit. Endoscopic retrograde cholangiopancreatography was attempted, but cannulation was unsuccessful. After a failed rendezvous, EUS-guided transluminal pancreatic duct drainage (pancreaticogastrostomy) was successfully performed using a biliary LAMS (6 × 8 mm, HotAXIOS; Boston Scientific, Marlborough, Massachusetts, USA) plus a double-

Fig. 3 Endoscopic view of a double-pigtail plastic stent (7 Fr × 5 cm, Advanix; Boston Scientific, Marlborough, Massachusetts, USA) through the lumen-apposing metal stent in the gastric cavity.

pigtail stent, with the purpose of avoiding self-occlusion, food impaction, dislodgement, and migration (**Video 1**).

First, the dilated pancreatic duct (up to 5.6 mm) was punctured directly from the gastric wall, using a 19 G needle, and tract dilation was carried out using a 6 Fr cystotome over a 0.035-inch guidewire (**Fig. 1**). Second, a LAMS was inserted and deployed using the HotAXIOS system. All four steps of the delivery system were performed under EUS, endoscopic, and fluoroscopic guidance (**Fig. 2**). Finally, a double-pigtail plastic stent (7 Fr × 5 cm, Advanix; Boston Scientific) was advanced through the LAMS under endoscopic vision (**Fig. 3**). The total procedure duration was 48 minutes. The patient's condition evolved satisfactorily without any adverse events.

The use of a LAMS plus a double-pigtail stent in EUS-guided pancreatic duct drainage was technically feasible and safe, and reduced the potential risk of pancreatic fluid leak or stent migration. For these reasons, it should be considered as a new option in this scenario.

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Competing interests: None

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