

Lumen-apposing metal stent for the creation of an endoscopic duodenojejunostomy to facilitate bile duct clearance following Roux-en-Y hepaticojejunostomy

A 52-year-old woman with history of bile duct injury following cholecystectomy and previous Roux-en-Y hepaticojejunostomy was admitted because of cholangitis. Her work-up revealed a 7-mm stone in the right intrahepatic duct on magnetic resonance cholangiopancreatography (MRCP). An initial single-balloon enteroscopy-assisted endoscopic retrograde cholangiopancreatography (ERCP) revealed independent right and left hepaticojejunostomies and bilateral strictures. A large right intrahepatic filling defect was identified on an occlusion cholangiogram (► **Fig. 1**). Bilateral dilation of the anastomosis was performed with an 8-mm hydrostatic balloon, but the stone could not be removed and two plastic biliary stents (7F×5 cm) were placed.

Contrast injection into the biliopancreatic limb showed that it was closely approximated to the duodenal bulb and therefore suitable for an endoscopic ultrasound (EUS)-guided duodenojejunostomy (EUS-DJ) to facilitate access to the afferent limb and complete clearance of the bile duct using the appropriate accessories. A single-balloon enteroscope fitted with a cap was advanced to the hepaticojejunostomy. The afferent limb was filled with diluted contrast mixed with 1% methylene blue, and 2 mg of glucagon was given intravenously to slow peristalsis. A linear echoendoscope was then advanced to the duodenal bulb and the distended jejunal limb was identified and punctured using a 19-gauge fine-needle aspiration (FNA) needle. Aspiration of blue-tinged fluid confirmed the correct location in the afferent limb. A cautery-enhanced lumen-apposing metal stent (LAMS; 15 mm×10 mm) was deployed, thereby creating a duodenojejunostomy (► **Video 1**).



► **Video 1** Endoscopic ultrasound-guided duodenojejunostomy in a patient with a Roux-en-Y hepaticojejunostomy and right intrahepatic duct stone.



► **Fig. 1** Occlusion cholangiogram during enteroscopy-assisted endoscopic retrograde cholangiopancreatography showing a large right intrahepatic filling defect.



► **Fig. 2** Endoscopic views showing: **a** the patent duodenojejunostomy lumen-apposing metal stent; **b** the independent right/left hepaticojejunostomy.



► **Fig. 3** Digital cholangioscopic view showing no evidence of persisting intra-ductal stones.



► **Fig. 4** Cholangiographic view during follow-up endoscopic retrograde cholangiopancreatography performed through the duodenojejunostomy, showing no residual right or left intrahepatic stones.

The patient returned 4 weeks after the procedure for an ERCP with cholangioscopy. A therapeutic upper gastrointestinal endoscope was advanced to the duodenojejunostomy (► **Fig. 2a**) and the hepaticojejunostomy was identified 1–2 cm distally (► **Fig. 2b**). A digital single-operator cholangioscope was advanced into the right anterior, mid, and posterior branches of the right intrahepatic duct. Sludge but no stones were seen in the posterior branch (► **Fig. 3**). The left intrahepatic duct was normal. The patient underwent a further MRCP and a follow-up ERCP after 4 weeks with no additional stones identified (► **Fig. 4**), and the LAMS was removed. To date, the patient has remained asymptomatic.

Endoscopy_UCTN_Code_TTT_1AS_2AD

Competing interests

Mouen A. Khashab is a consultant for Boston Scientific, Medtronic and Olympus. The remaining authors have no competing interests to disclose.

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DOI <https://doi.org/10.1055/a-0965-6402>
Published online: 24.7.2019
Endoscopy 2019; 51: E400–E401
© Georg Thieme Verlag KG
Stuttgart · New York
ISSN 0013-726X

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