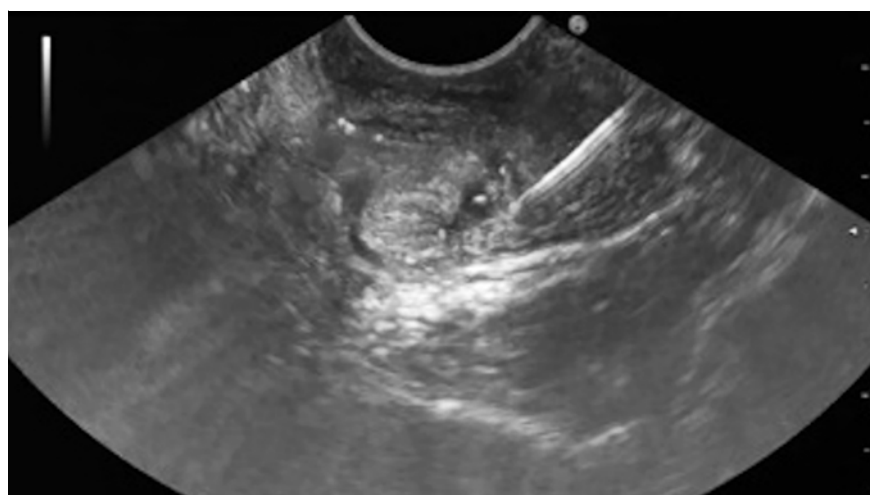


## Endoscopic ultrasound-directed transgastrojejunal ERCP: a new technique to treat biliary stricture through the afferent limb after Whipple surgery

Biliary drainage in patients with altered anatomy usually requires either percutaneous biliary drainage or endoscopic retrograde cholangiopancreatography (ERCP) performed with enteroscopy, so called e-enteroscopy [1]. In a meta-analysis, e-enteroscopy was successful in 70% of cases, with a mean procedure duration of >80 minutes [2]. Endoscopic ultrasound (EUS)-guided antegrade drainage using a previous EUS-guided hepatico-gastrostomy is the most commonly performed EUS procedure in altered anatomy, with technical and clinical success rates ranging from 85% to 91.9% [3, 4]. In cases of bariatric gastric bypass, EUS-directed transgastric ERCP is a technique used to access the excluded stomach after Roux-en-Y bariatric bypass through gastrogastrostomy with the duodenoscope [1].

A 73-year-old woman was referred with jaundice. She had undergone Whipple surgery for a tumor in the pancreatic head seven years ago. Pathological analysis showed a 5-cm pancreatic neuroendocrine tumor, WHO grade 2, pT3N0M0, Ki-67 6%. During follow-up, liver metastasis occurred with jaundice and pruritus. Magnetic resonance imaging at the last investigation showed invasion of the hilum of the liver with dilatation of biliary ducts in the right lobe and complete atrophy of the left lobe.

Management with EUS-guided hepatico-gastrostomy was not possible and e-enteroscopy failed. To avoid percutaneous biliary drainage, we decided to access the afferent limb of the surgical hepatico-jejunosotomy by performing EUS-guided gastrojejunostomy (►Fig. 1, ►Fig. 2 and ►Fig. 3), then accessing the choledocho-jejunal surgical anastomosis (EUS-GJ) (►Fig. 4). Under EUS guidance, an EUS-guided gastrojejunal anastomosis was performed through the antrum wall with direct approach (►Video 1). The postoperative course was uneventful.



►Fig. 1 Endoscopic ultrasound puncture of the afferent limb through the gastric wall.



►Fig. 2 X-ray view of the release of the distal flange.



►Fig. 3 Endoscopic view of the release of the proximal flange.

Three weeks later, an ERCP was performed through the EUS-GJ with a colonoscope easily reaching the choledocho-jejunal anastomosis (►Fig. 4). Biliary drainage was performed by inserting two plastic stents. The postoperative course was uneventful, with complete resolution of the jaundice.

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►Fig. 4 Cholangiography with the axial scope.



**Video 1** Endoscopic ultrasound-guided gastrojejunostomy with the afferent limb, followed by endoscopic retrograde cholangiopancreatography through the gastrojejunostomy.

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## Competing interests

Professor Barthet and Dr. Gonzalez are consultants for Boston Scientific.

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