

## E-VIDEO

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# Endosonography-guided rescue procedures after failed ERCP in a patient with pancreatic ductal adenocarcinoma

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## HIGHLIGHTS

- The ERCP even when done by experienced professionals, fails in 10% of cases.
- Until the development of the EUS-BD, PTBD had a role as a rescue therapy, despite a high rate of adverse events.
- The EUS-BD is safe and has similar efficacy, when compared to PTBD and should be performed immediately after ERCP failure.
- A doctor with skills in both methods (ERCP/EUS) is needed to determine the best EUS-guided therapeutic option.

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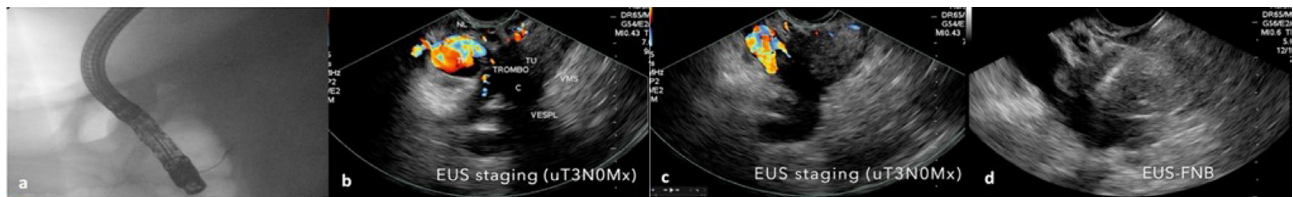
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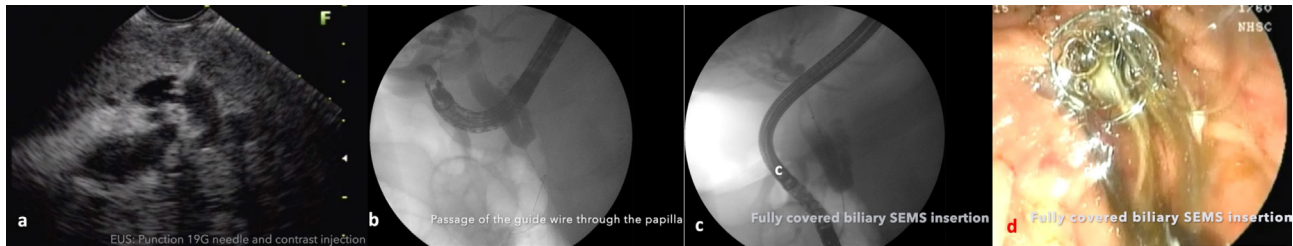
The endoscopic retrograde cholangiopancreatography (ERCP), even when done by experienced professionals, fails in up to 10% of cases, especially in patients with papillary infiltration, malignant gastric outflow obstruction or surgically altered anatomy<sup>(1,2)</sup>. Until recently, percutaneous transhepatic biliary drainage (PTBD) had a leading role as a rescue therapy, despite being associated with a high rate of adverse events, along with the need for new interventions and lower quality of life mainly due to percutaneous catheters<sup>(3)</sup>. Endosonography (EUS) has been increasingly used as an effective and safe alternative for internal biliary drainage (BD). EUS-BD has similar or even superior efficacy, with higher safety scores when compared to PTBD and can be performed immediately after ERCP failure by skilled doctors<sup>(2,3)</sup>.

An 82-year-old man who had been jaundiced for 15 days underwent a computed tomography

(CT) scan that revealed a mass in the head and uncinate process of the pancreas, with invasion of the splenomesenteric confluence. The patient was submitted to an unsuccessful ERCP attempt at another service. He was then referred to our service for a new ERCP, also unsuccessful. The patient underwent EUS-FNB of the hypoechoic tumor, which was heterogeneous with imprecise limits and measured 3.4 x 2.8 cm in the longest axes, classified as uT3NxMx (FIGURE 1) (E-VIDEO). Tissue samples were obtained with a 20G ProCore needle. Pathology studies revealed well-differentiated ductal adenocarcinoma. Through the stomach it was identified the dilated left hepatic duct (LHD), punctured with a 19G needle to access, and performed the passage of the 0.035 guidewire, which went through the duodenal papilla and on to the second duodenal portion (FIGURE 2). Once the echoendoscope was removed and the guidewire was left



**FIGURE 1.** a) Failure to access the bile duct during ERCP. b) EUS image with Doppler study showing a thrombus in the portal trunk, close to the splenomesenteric junction. c) EUS with Doppler showing invasion of the portal trunk wall by the hypoechoic mass (uT3N0Mx?). d) Moment of the endosonography-guided fine needle biopsy.

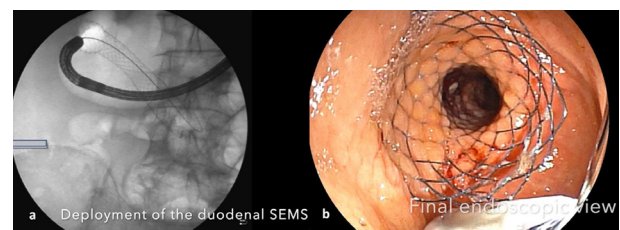


**FIGURE 2.** a) EUS with puncture of the dilated LHD and contrast injection. b) Fluoroscopic image of the contrast injection showing the passage of the 0.035 guide wire through the duodenal papilla. c) Using the duodenoscope, the moment of implantation of the biliary SEMS can be observed. d) Endoscopic view of the well-located SEMS with outflow of black bile and pus.

positioned through the papilla, it was possible to use the duodenoscope to implant a biliary self-expandable metallic stent (SEMS) (FIGURE 2). He underwent adjuvant chemotherapy with gemcitabine and remained anicteric for 20 months.

During this period, he began with packing, vomiting and reported having evacuated the SEMS 15 days before the onset of symptoms. During the ERCP there was a stenosis of the duodenum. Using the echoendoscope, we implanted a duodenal SEMS (FIGURE 3) and afterwards a new attempt on EUS-guided “rendez-vous” was attempted. As it was not possible to transpose the papilla, it was performed an EUS-guided hepatogastrostomy (FIGURE 4). The patient progressed well with a drop in bilirubin but had a lethal outcome 3 months after the last procedure.

After four unsuccessful ERCP attempts, the EUS-BD techniques allowed the treatment of this patient, in a less invasive way compared to PTBD, followed by adjuvant chemotherapy, aiming to maintain his quality of life and survival (23 months). This palliative treatment is safe and effective if it is well indicated, helping the patient to undergo



**FIGURE 3.** a) Fluoroscopic image of the well-placed duodenal SEMS. b) Endoscopic view of the well-positioned pyloric prosthesis.



**FIGURE 4.** a) EUS with puncture of the dilated left hepatic duct and contrast injection. b) Fluoroscopic view during biliary SEMS implantation between the liver and stomach. c) Endoscopic view of the SEMS positioned inside the stomach.

complementary treatments in an attempt to preserve their survival and quality of life<sup>(4,5)</sup>.

#### Authors' contribution

Ardengh JC, Orsini-Arman AC, Haueisen-Figueiredo B, Oliveira-Canejo GC and Micelli-Neto O, participated equally in all phases of the work.

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