

# Percutaneous Transhepatic Cholangiography Rendez-Vous Procedure to Reach the Duodenum for Enteroscopy-Assisted Endoscopic Retrograde Cholangiopancreatography in Surgically Altered Anatomy

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## Keywords

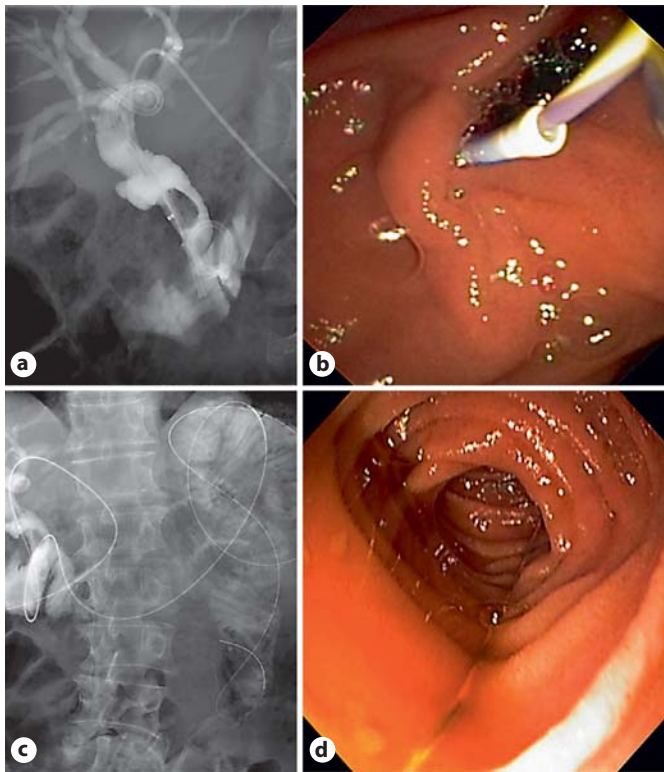
Endoscopic retrograde cholangiopancreatography · Single-balloon enteroscopy · Percutaneous transhepatic cholangiography · Choledocholithiasis

**Colangiopancreatografia Retrógrada Endoscópica com Enteroscópico com Técnica de Rendez-Vous com Colangiografia Percutânea Trans-Hepática para Alcançar o Duodeno em Doente com Anatomia Cirurgicamente Modificada**

## Palavras Chave

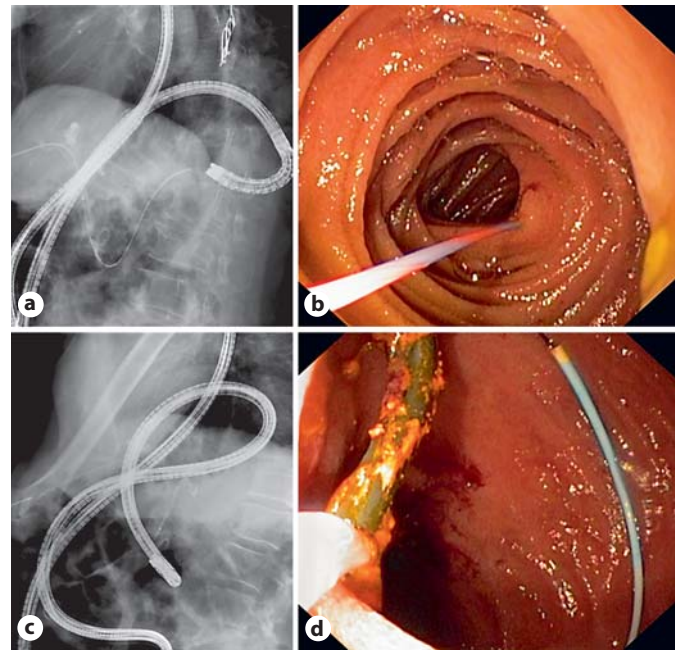
Colangiopancreatografia retrógrada endoscópica · Enteroscopia assistida por monobalão · Colangiografia percutânea trans-hepática · Litíase biliar

The present case reports a 78-year-old male with a history of total gastrectomy with Roux-en-Y anastomosis and splenectomy for gastric cancer in 2007 and cholecystectomy in 2014 for cholelithiasis. The patient presented with a 1-week history of abdominal pain, fever, and vomiting. Laboratory tests revealed leukocytosis ( $17,290 \times 10^3/\mu\text{L}$  [normal range: 3.8–10.6]) and elevated total bilirubin (3.75 mg/dL [0.1–1.1]), conjugated bilirubin (2.89 mg/dL [0.1–0.3]), aspartate aminotransferase (364 mg/dL [4–33]), and alanine aminotransferase (198 mg/dL [4–50]). Abdominal ultrasound revealed a 13-mm gallstone in the common bile duct, resulting in its dilation up to 15 mm. After conservative management for acute cholangitis, the patient was referred for single-balloon enteroscopy (SBE)-assisted endoscopic retrograde cholangiopancreatography (ERCP). During SBE-ERCP (with carbon dioxide insufflation), since only limited sphincterotomy could be performed due to limitations in the orientation of the available sphincterotomy (CCPT-25ME; Cook Medical Inc., Bloomington,



**Fig. 1.** **a** Percutaneous cholangiography showing a dilated common bile duct with a gallstone in its distal segment; a double pigtail plastic biliary stent previously placed is also seen. **b** Emergence of the percutaneous catheter with a guidewire through the major papilla. **c** Fluoroscopic view of the guidewire in the afferent jejunal limb. **d** Endoscopic view of the guidewire in the afferent jejunal limb.

MN, USA), large balloon dilation (LBD) up to 12 mm was performed. Despite LBD, stone extraction was impossible, and a 3-cm long, 7Fr double pigtail plastic biliary stent was thus placed. A second SBE-ERCP was performed 3 months later to complete the procedure, but the papilla could not be reached due to fixed angulations that caused recurrent looping of the enteroscope, despite changes in position and abdominal compressions. Therefore, a third SBE-ERCP using the rendez-vous technique was planned to reach the papilla. A percutaneous transhepatic cholangiography was performed to insert a 0.035" 600-cm guidewire (METII-35-600E; Wilson-Cook Medical Inc., Limerick, Ireland) in antegrade direction (Fig. 1a) through the major papilla (Fig. 1b) into the afferent limb (Fig. 1c). The SBE was advanced to the afferent limb (Fig. 1d) where the guidewire was grasped with a polypectomy snare. Maintaining external



**Fig. 2.** **a** Fluoroscopic view of the percutaneous guidewire allowing the progression of the enteroscope in the afferent jejunal limb. **b** Endoscopic view of the guidewire allowing the progression of the enteroscope in the afferent jejunal limb. **c** Fluoroscopic view showing the enteroscope reaching the papilla. **d** Endoscopic removal of the plastic biliary stent previously placed.

traction in the guidewire (Fig. 2a, b), progression of the enteroscope to the papilla was achieved (Fig. 2c) where the previously placed biliary stent was identified. The biliary stent was removed (Fig. 2d), and biliary cannulation was performed over the guidewire using the rendez-vous technique (Fig. 3a). LBD with a 12–15 mm balloon was subsequently performed (Fig. 3b), followed by endoscopic common bile duct exploration with a balloon catheter resulting in extrusion of the stone and biliary sludge (Fig. 3c, d). The patient was discharged 1 day after the procedure and remains asymptomatic after 11 months of follow-up.

ERCP in patients with surgically altered upper gastrointestinal anatomy such as total gastrectomy is challenging [1–3]. SBE-ERCP may overcome those limitations, as the enteroscope allows deep insertion into the small bowel and access to the papilla and the biliary tract [1, 3, 4]. Nevertheless, current evidence demonstrates that the enteroscopy success rate (defined as success in reaching the papilla and/or biliary anastomosis) of SBE-ERCP among different studies ranges from 55 to 100% [4]. The

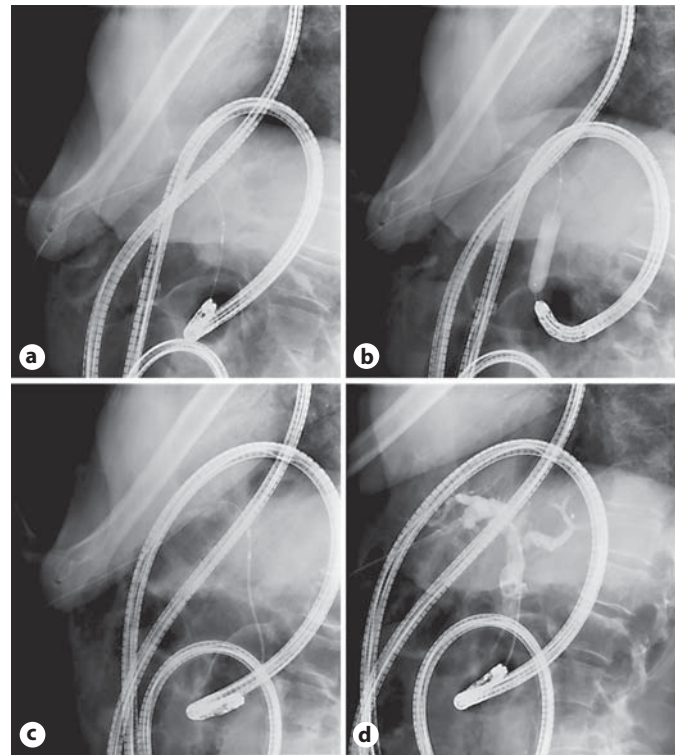
common reasons for the lack of enteroscopy success include failure to identify the afferent limb of the Roux-en-Y anastomosis, sharp small bowel angulations, adhesions, recurrent looping, and anastomotic stenoses [4]. Some techniques may be used to identify the afferent limb, such as the injection of Indigo carmine or CO<sub>2</sub>, or to reach the papilla, such as abdominal compressions or changes in position. The rendez-vous technique with percutaneous transhepatic cholangiography [5] is useful when reaching the papilla is unsuccessful despite the use of the previously mentioned techniques, as highlighted in this case.

### Statement of Ethics

This case required informed consent but did not require review/approval by the appropriate ethics committee.

### Disclosure Statement

The authors have no conflicts of interest to declare.



**Fig. 3.** **a** Biliary cannulation over the guidewire using the rendez-vous technique. **b** Papillary large balloon dilation with a 12–15 mm balloon. **c** Endoscopic common bile duct exploration with a balloon catheter. **d** Final cholangiogram showing no defects in the common bile duct.

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