

# Rendezvous technique and self-expandable metal stent for afferent limb syndrome

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## Abstract

Endoscopic retrograde cholangiopancreatography in patients with surgical alterations in the normal biliary anatomy is technically challenging. We describe the case of a 73-year-old patient with an afferent limb syndrome secondary to a Whipple procedure for pancreatic cancer, in which a percutaneous rendezvous technique assisted in the endoscopic metallic stent placement with a favorable outcome.

**Keywords:** Cholangiopancreatography endoscopic retrograde. Pancreaticoduodenectomy. Cholangitis. Stent.

## Técnica de Rendezvous y prótesis metálica autoexpandible como tratamiento para síndrome de asa aferente

### Resumen

La colangiopancreatografía retrógrada endoscópica en pacientes con anatomía alterada representan complicaciones técnicas. Se describe un caso de un paciente de 73 años de edad con síndrome de asa ciega secundaria a cirugía de Whipple por cáncer pancreático, en el cual se realizó técnica de Rendezvous con colocación de prótesis metálica auto expandible con desenlace favorable.

**Palabras clave:** Colangiopancreatografía retrógrada endoscópica. Pancreaticoduodectomía. Colangitis. Prótesis.

## Introduction

For patients with surgical alterations in the normal biliary anatomy (Whipple procedure), an endoscopic retrograde cholangiopancreatography (ERCP) is technically challenging<sup>1</sup>. The afferent limb syndrome (ALS) has been described in patients with biliodigestive derivative surgery, in which the afferent limb is unable to empty its contents due to a mechanical problem<sup>2</sup>. In

patients with ALS, the access to the afferent limb depends on different types of reconstruction, the cannulation of the papilla is difficult due to the reversed orientation, and the performance of the therapeutic interventions often requires uncommon endoscopic accessories<sup>3</sup> and the endoscopists' skills to be successful. There is no gold standard for the endoscopic management of ALS, and alternative access points should be considered, like the *rendezvous* procedure

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(French for “encounter”), among others. We describe a successful case of ALS managed with a rendezvous and endoscopically stent placement.

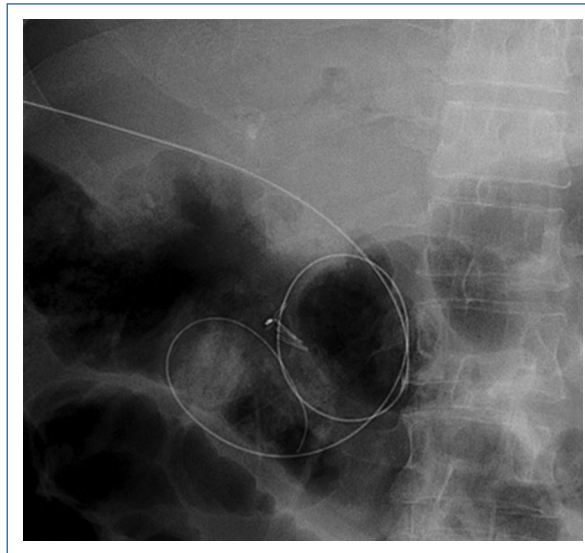
A 73-year-old male was diagnosed with pancreatic adenocarcinoma and underwent a modified Whipple procedure (pylorus-preserving) 3 years earlier. Two months before the presentation, the patient developed intermittent jaundice, low-grade fever, and pain in the upper right quadrant of the abdomen. With respect to biochemical data, total bilirubin was 11.7 mg/dL (normal range 0.4-1.5 mg/dL), alkaline phosphatase was 800 IU/L (normal range 32-91 IU/L), and gamma-glutamyl transpeptidase was 550 IU/L (normal range 7-50 IU/L). An abdominal ultrasound reported dilatation of the biliary tree (common bile duct 8.5 mm in diameter). Ascending cholangitis secondary to an ALS was suspected and the patient underwent an emergency ERCP. Access to the biliary tree was impossible due to post-surgical alterations in anatomy.

## Technique

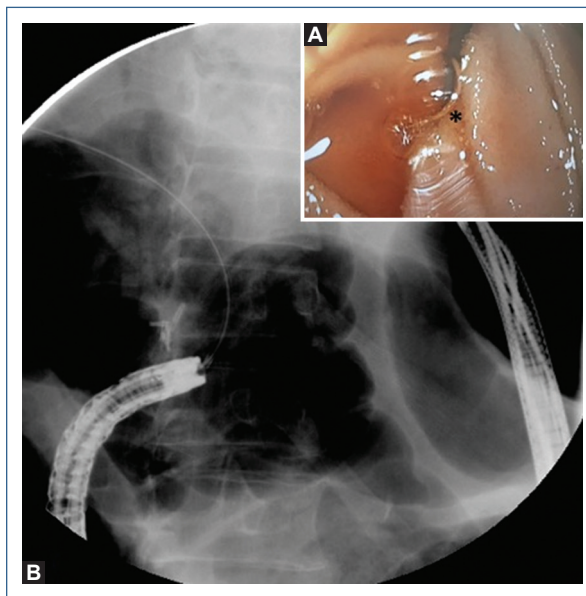
First, a colonoscope (190 Olympus Medical Systems, Tokyo Japan) was passed up to the choledochojejunostomy, which was found kinked and angulated. Therefore, the colonoscope was withdrawn and an enteroscope (EVIS EXERA II [SIF-Q180], Olympus Medical Systems, Tokyo Japan) was passed until the kinked choledochojejunostomy. Second, a hydrophilic Guidewire (0.035 mm Jagwire Revolution High Performance Guidewire, Boston Scientific Corp) was introduced percutaneously into the biliary tree under transabdominal ultrasound assistance to access the afferent limb (Fig. 1), and the guidewire was recovered with the enteroscope (Fig. 2). Third, the enteroscope holding the guidewire was withdrawn and interchanged into a stent-loaded colonoscope. Finally, the colonoscope holding the guidewire was introduced and an enteral uncovered self-expandable metal WallFlex Duodenal Stent, Boston Scientific Corp (22 mm × 60 mm) was successfully deployed at the site of the obstruction (Fig. 3). The schematic representation of the technique is described in figure 4. The patient’s evolution was satisfactory and was discharged 48 h after the procedure.

## Discussion

ALS is a rare complication after the Whipple procedure, resulting in a high risk of necrosis, perforation, or ascending cholangitis<sup>2</sup>. In a retrospective case series, Pannala et al.<sup>4</sup> reported in patients with 2 years or more

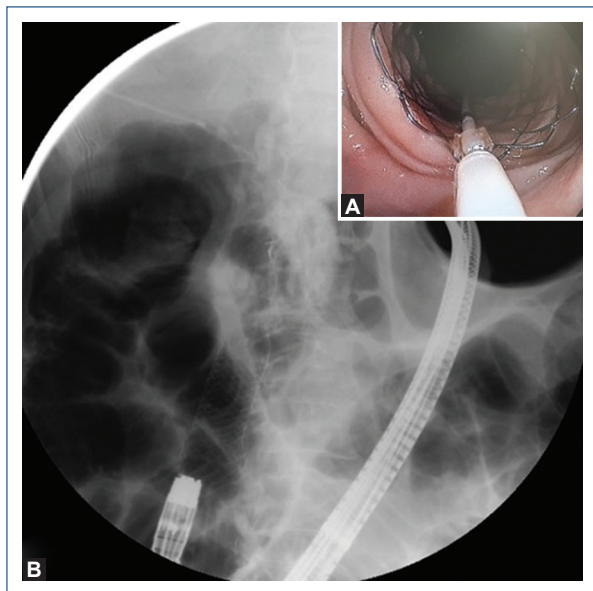


**Figure 1.** Percutaneous hydrophilic guidewire inserted into the afferent limb.



**Figure 2.** **A:** endoscopic view of the hydrophilic guidewire (asterix) emerging through the kinked choledochojejunostomy. **B:** hydrophilic guidewire retrieved with the endoscope.

of follow-up after pancreaticoduodenectomy for pancreatic cancer, that 13% (24 patients out of 186) developed ALS. Median time to diagnosis was 1.2 years and obstruction was primarily caused by recurrent pancreatic cancer; interestingly, 54% (13 of 24 patients) were found with strictures of the afferent limb and 29%



**Figure 3.** **A:** endoscopic deployment of enteral metallic stent with a colonoscope. **B:** enteral stent in correct position.

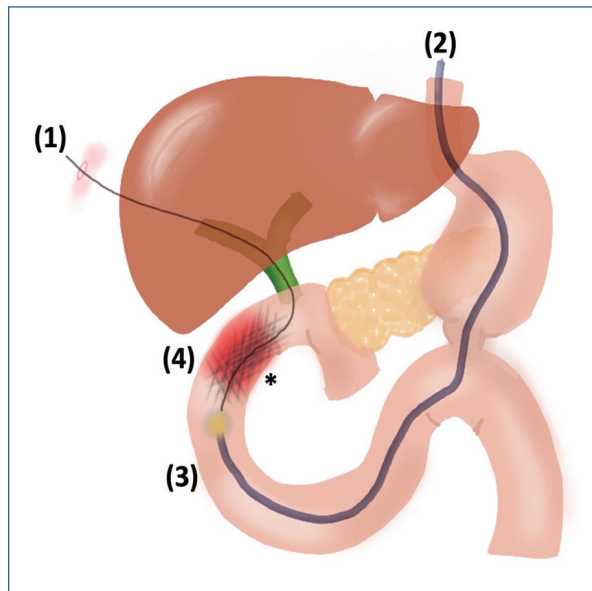
(seven of 24 patients) with angulation of a fixed afferent limb, as in our patient. Chahal et al.<sup>5</sup> reported that the success rate of ERCP was 51% (45 of 88 procedures) and it was more likely to be successful for biliary indications (37 of 44 procedures, 84%) than for pancreatic indications (three of 37 procedures, 8%).

Depending on the site of the obstruction, the endoscopic management should be the first treatment option. Many endoscopic techniques have been described to facilitate access to the afferent limb and biliary tree<sup>1,3,6,7</sup>; however, each technique must be individualized according to the cause of the ALS<sup>2,8,9</sup>.

In this case, a rendezvous procedure was performed successfully with enteral stent placement. Therefore, there is no gold standard procedure and the endoscopist's and radiologist's skills are the cornerstone to minimize the morbidity in these patients.

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**Figure 4.** Schematic representation of the rendezvous technique and endoscopically stent placement. (1) A hydrophilic guidewire is inserted percutaneously through the kinked choledocojejunostomy (asterisk) to bypass the afferent limb (red shadow). (2) The enteroscope is advanced to retrieve the guidewire (3) and a metal stent is deployed with a colonoscope (4) with resolution of the afferent limb syndrome.

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