




# Endoscopic Management of a Complex Biliary Problem

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## Abstract

Endoscopic interventions have become increasingly popular in the management of obstructive jaundice. In this case study, we present a case of complex Bismuth type 4 hilar stricture in an elderly lady presenting with obstructive jaundice. Complete endoscopic biliary drainage was accomplished successfully by placement of three metal stents – two with ERCP and one with Endoscopic Ultrasound (EUS) guided hepatico-gastrostomy. She developed cholecystitis later, which was successfully addressed by EUS guided gallbladder drainage using a cautery enhanced lumen apposing metal stent. Thus, a complete internal biliary drainage was achieved with endoscopic interventions.

## Keywords

- ▶ Obstructive jaundice
- ▶ Endoscopic ultrasound
- ▶ Acute cholecystitis

A 60-year-old female with history of hypertension, presented with a two-month history of jaundice. On admission, total bilirubin levels were significantly elevated to 23 mg/dl, with no evidence of cholangitis. MRI showed a mass involving the gallbladder, concerning for malignancy with a complex Bismuth type IV hilar stricture. Endoscopic biliary drainage was planned. First, an endoscopic retrograde cholangiopancreatography (ERCP) was performed and access to the right anterior and right posterior system was achieved with the assistance of hydrophilic 0.032 inch guidewires, which were exchanged with 0.035 inch guidewires. Dilation of the hilar stricture was performed using a biliary balloon (6 mm diameter) to facilitate passage of stents. Two uncovered Self expanding metal stent (SEMS) of size 10 mm × 80 mm were placed sequentially in right posterior and right anterior system, respectively. During the same setting, on EUS dilated left intrahepatic ducts were identified. A 19 G needle was used to gain access to the left intrahepatic ducts, followed by advancement of a 0.035 inch guidewire. A 6Fr. cystotome was then used to create a fistula tract followed by deployment of a partially covered biliary metal stent (10 mm × 120 mm). Following the endoscopic interventions, the patient's jaundice resolved, and she was planned for chemo-

therapy. However, after two weeks, the patient presented with right upper quadrant pain. Murphy's sign was positive and ultrasound abdomen showed thickened gallbladder walls suggestive of acute cholecystitis, likely secondary to biliary metal stents. EUS guided transgastric gallbladder drainage was performed using a cautery-enhanced lumen apposing metal stent (10mm diameter). Patient had an uneventful recovery. She received chemotherapy on follow up and remains asymptomatic 18 months after index procedure.

This case highlights the potential of endoscopic interventions in managing obstructive jaundice. ERCP and EUS-guided interventions have shown good results in managing complex cases of malignant obstructive jaundice.<sup>1</sup> These interventions offer a less invasive approach to treatment, leading to reduced morbidity and faster recovery times compared to traditional surgery.<sup>2</sup> It is important to note that the success of endoscopic interventions depends on the experience and expertise of the endoscopist performing the procedure.<sup>3</sup> Therefore, patients should seek care from experienced and qualified endoscopists to ensure the best outcomes. The entire procedure has been shown and explained in the ▶ **Supplementary Video S1.**

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### Supplementary Video S1

Endoscopic video showing ERCP and EUS guided bilateral stenting and EUS guided cholecysto-gastrostomy. Online content including video sequences viewable at: <https://www.thieme-connect.com/products/ejournals/html/10.1055/s-0043-1762575>.

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None.

### Conflict of Interest

None declared.

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