

## Introduction

A few case reports have demonstrated successful EUS (Endoscopic ultrasound) guided choledochoduodenostomy accomplished through endoscopic placement of a biliary stent<sup>1</sup>. No case has been reported in English literature for EUS-guided choledochoduodenostomy with simultaneous deployment of metallic biliary and duodenal stents in a patient with recurrent adenocarcinoma of the major papilla.

## Case Description

An 84 y/o Caucasian lady with history of malaise, abdominal fullness, weight loss, abnormal LFTs and biliary obstruction was referred for an endoscopic retrograde cholangiopancreatography (ERCP). She had a history of ampullary adenocarcinoma and underwent local resection one year earlier followed by adjuvant chemo and radiation therapy due to tumor invasion of the head of the pancreas. An attempted ERCP failed to cannulate the common bile duct (CBD) due to a large, fungating, ulcerated, circumferential mass which was partially occluding the second part of the duodenum. EUS showed dilation of the extra hepatic bile duct and irregular severe stenosis of the distal common bile duct.

## Endoscopic Procedure

Under EUS-guidance, a duodeno-biliary fistula was created, the common bile duct was cannulated through the fistula site and a Wallstent I fully covered biliary expandable endoprosthesis (60 mm in length and 8 mm in diameter) was placed after 30 seconds of balloon dilatation. The partially obstructed second part of duodenum was traversed with the endoscope and insertion of the Wallstent I uncovered enteric expandable endoprosthesis (90 mm in length and 22 mm in diameter) was accomplished. The patient had no complications and was discharged home after the procedure. Subsequently, EUS-guided celiac plexus neurolysis was performed to control the patient's abdominal pain.

## Figures

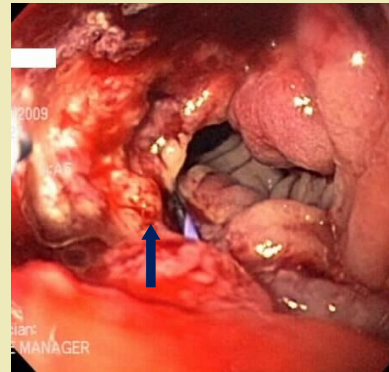


Figure 1. Recurrent fungating ulcerated malignant mass (arrow) in the second part of duodenum causing biliary and duodenal obstruction.

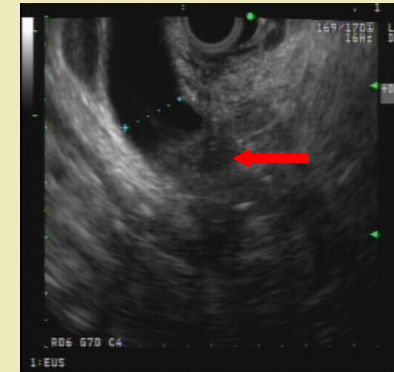


Figure 2. EUS showing distal CBD obstruction (arrow).

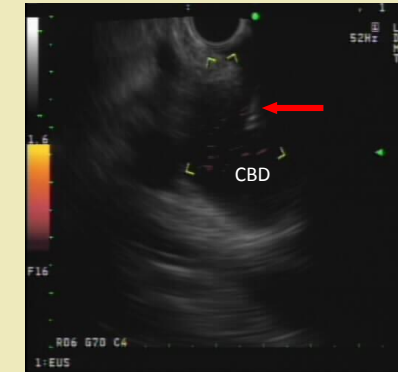


Figure 3. Transduodenal cannulation (arrow) of CBD under EUS guidance.



Figure 4. Fluoroscopic visualization of cholangiogram obtained under EUS-guidance.

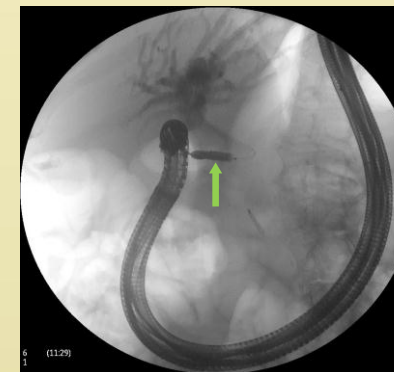


Figure 5. Fluoroscopic image showing balloon dilatation (arrow) of choledochoduodenostomy tract and extra-hepatic bile duct.

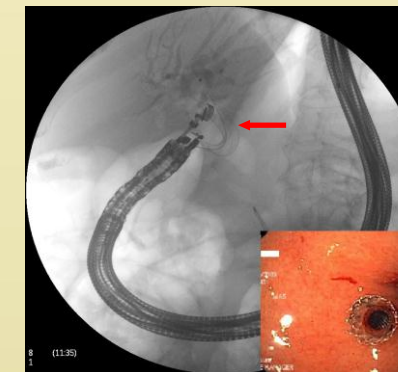


Figure 6. Fluoroscopic image showing successful deployment (arrow) of Wallstent I fully covered biliary expandable endoprosthesis (60 mm x 8 mm). Endoscopic view (inset).

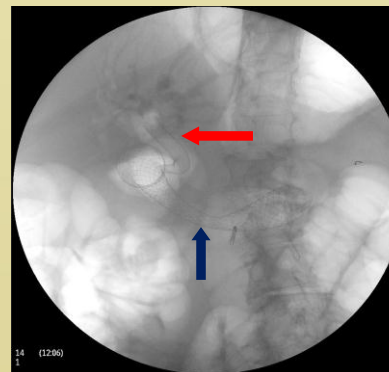


Figure 7. Fluoroscopic visualization after successful deployment of choledochoduodenostomy (red arrow) and esophageal (blue arrow) stents.

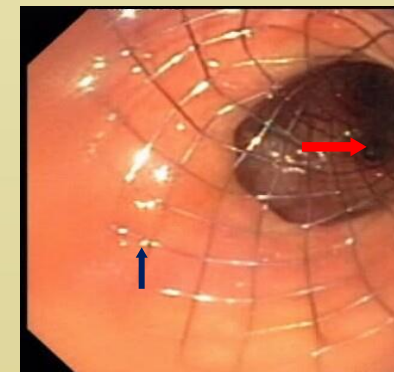


Figure 8. Endoscopic visualization after successful deployment of choledochoduodenostomy (red arrow) and esophageal (blue arrow) stents.

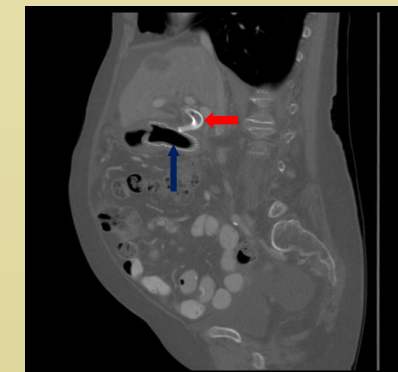


Figure 9. CT visualization after successful deployment of choledochoduodenostomy (red arrow) and esophageal (blue arrow) stents.

## Discussion

Endoscopic retrograde cholangiopancreatography (ERCP) is the procedure of choice for biliary drainage in patients with biliary obstruction from multiple etiologies. When ERCP is unsuccessful (3-10%), the traditional alternatives have been percutaneous transhepatic biliary drainage or surgical decompression<sup>1</sup>. EUS-guided biliary drainage has many advantages over percutaneous transhepatic biliary drainage which include avoidance of inadvertent vascular puncture with color doppler<sup>1,2</sup>, no external drainage<sup>2</sup>, the contiguity of the EUS transducer to the CBD<sup>3</sup>, diagnosis of extra-hepatic pathologies causing cholestasis and prevention of biliary clogging due to tumor overgrowth<sup>4</sup>. This procedure has a high success rate (>90%) and low rate of complications (<20%)<sup>5</sup>. The main complication is biliary leak<sup>1</sup> causing biliary peritonitis.

## Conclusion

With a good success rate and lesser morbidity and mortality compared to surgery and percutaneous transhepatic biliary drainage, synchronous EUS-guided choledochoduodenostomy and duodenal stent placement offers a plausible alternative for treatment of biliary and duodenal obstructions while long-term comparison studies are awaited.

## References

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