Case Report

Pioneering EUS-guided biliary drainage at Kauvery hospital, Trichy: A case of technical challenge and clinical triumph

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Abstract

Background: Endoscopic Ultrasound-guided Biliary Drainage (EUS-BD) offers a successful, minimally invasive alternative for complex biliary obstructions when ERCP fails. This case highlights a technical triumph at Kauvery Hospital, Trichy, where EUS-guided, stent-based intervention resulted in rapid, complication-free biliary drainage

Key Words: Obstructive jaundice; Periampullary tumor; PTBD; Choledochoduodenostomy

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1. Introduction

Obstructive jaundice secondary to periampullary malignancy often necessitates biliary decompression before definitive surgical or oncological management. Endoscopic retrograde cholangiopancreatography (ERCP) remains the standard approach; however, anatomical distortion or tumour infiltration may render ampullary access impossible. In such scenarios, alternative drainage strategies, including percutaneous transhepatic biliary drainage (PTBD) or endoscopic ultrasound (EUS)-guided biliary drainage are considered.

We present a landmark case of successful EUS-guided choledochoduodenostomy performed at Kauvery Hospital, Trichy, marking the first such procedure not only at our institution but also in the Trichy region.

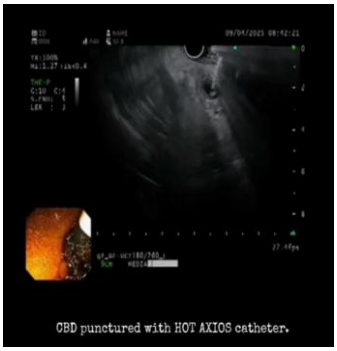
2. Case Presentation

A 58-year-old male presented with progressive jaundice and significant weight loss. Imaging studies revealed a periampullary tumor causing obstructive jaundice. In view of markedly elevated bilirubin levels, pre-operative biliary decompression was planned.

ERCP was attempted; however, a large tumor involving the second part of the duodenum completely obscured the ampulla, precluding cannulation. PTBD was considered but deemed unfeasible due to non-dilated intrahepatic biliary radicals. After a detailed

discussion with the patient's family regarding risks and benefits, a decision was made to proceed with EUS-guided choledochoduodenostomy.

1.1



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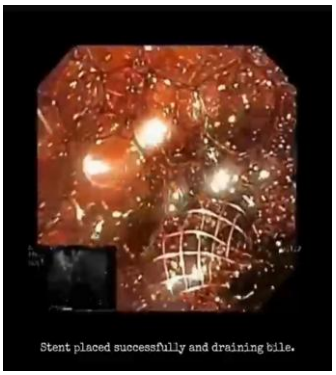

1.5

1.6

3. Procedure and Technical Challenge

Using EUS guidance, the common bile duct was accessed from the first part of the duodenum (fig 1.2) and a lumen-apposing metal stent was deployed to establish internal biliary drainage (fig 1.3).

While deployment progressed smoothly initially, an unexpected complication occurred during release of the proximal flange — the distal flange slipped into the duodenal lumen, and guidewire access was lost. This critical moment threatened procedural failure.

Demonstrating teamwork and prompt clinical judgment, the stent was carefully repositioned. A catheter was then advanced through the prior puncture tract, and a fresh puncture was made into the partially collapsed common bile duct. Successful stent deployment was achieved (fig. 1 .4 &1.5), restoring biliary drainage.

4. Outcome

The patient remained clinically stable post-procedure. Serum bilirubin levels reduced by nearly 50% within 48 hours, confirming effective biliary decompression. No immediate complications were observed.

5. Discussion

EUS-guided biliary drainage has emerged as a valuable alternative when ERCP fails, offering internal drainage without the morbidity associated with external catheters used

in PTBD. Choledochoduodenostomy provides direct access to the extrahepatic bile duct with high clinical success rates in expert hands.

This case highlights:

- Feasibility of advanced interventional EUS in resource-limited settings
- Importance of procedural adaptability during unexpected complications
- Critical role of team coordination in high-risk endoscopic interventions

Despite being our first clinical EUS biliary drainage case beyond simulation models, the procedure was successfully completed through meticulous technique and collaborative problem-solving.

6. Conclusion

EUS-guided choledochoduodenostomy represents a safe and effective rescue technique for malignant biliary obstruction when conventional ERCP fails. This first successful experience at Kauvery Hospital, Trichy underscores the expanding horizons of therapeutic endoscopy in regional centers and sets the stage for broader adoption of advanced EUS interventions.