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Introduction

- Endoscopic ultrasound guided choledochoduodenostomy (EUS-CD) has been effective in treatment of malignant distal biliary obstruction after failed endoscopic retrograde cholangiopancreatography (ERCP).
- There are no reports yet in the literature for use of EUS-CD in orthotopic liver transplants (OLT).
- We present a case of successful EUS-CD with lumen apposing metal stents (LAMS) in an OLT with recurrent cholangitis from anastomotic stricture despite repeated ERCP

Case Presentation

- 61F with OLTs (1996; twice in 2008) for AIH presented with recurrent cholangitis
 - Recurrent cholangitis from anastomotic stricture and dilated common hepatic bile duct tree
 - Recurrent large choledocholithiasis despite numerous techniques of lithotripsy
 - 26 total ERCP treatments (2012-2021)
- Underwent EUS-CD with LAMS for definitive treatment followed by lithotripsy of remaining choledocholithiasis 2-weeks later
- **Follow-up:** Cholangitis/choledocholithiasis free 11-months post treatment

Imaging

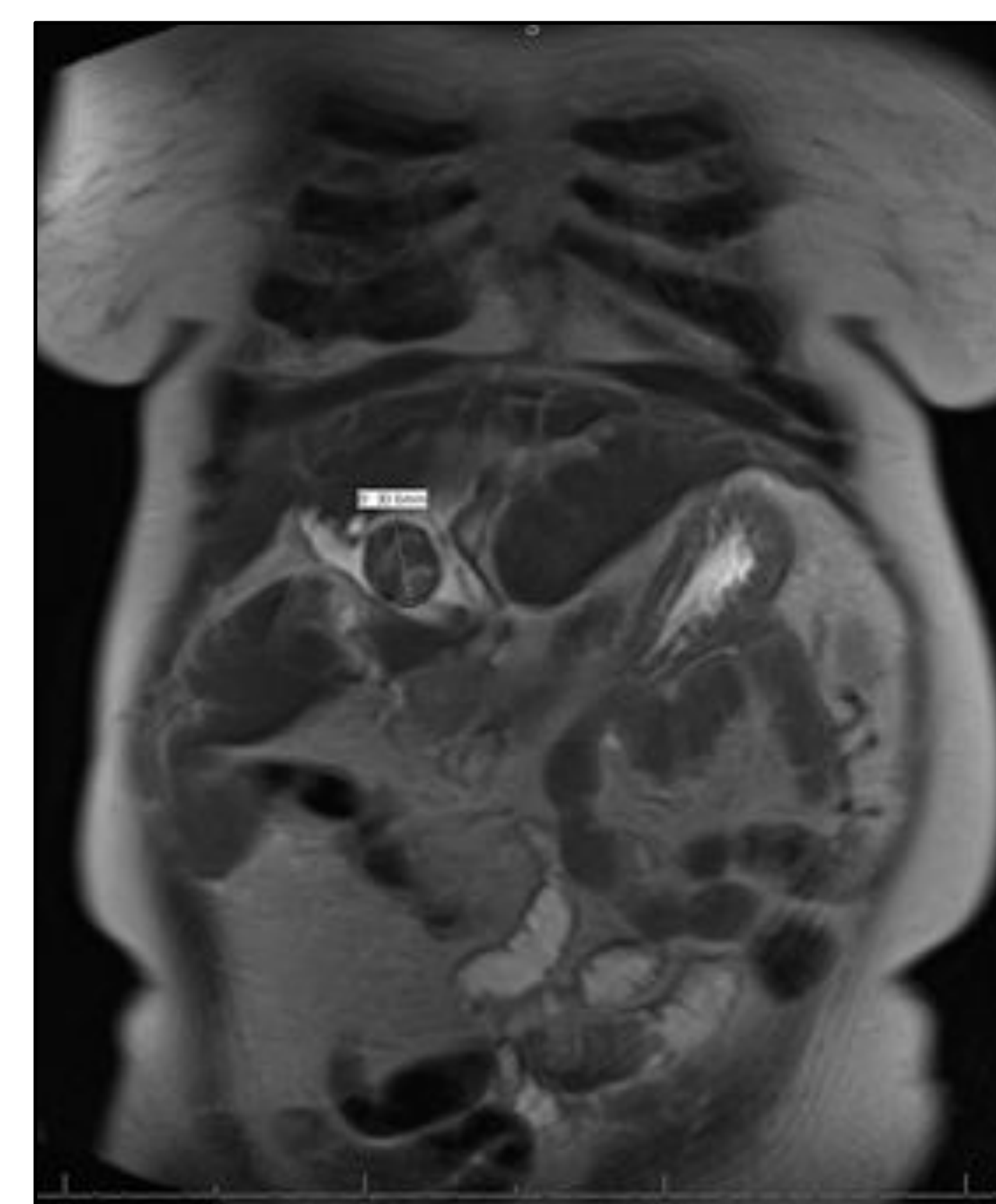


Figure 1: MRI demonstrating a large 3 cm choledocholithiasis within the dilated CBD

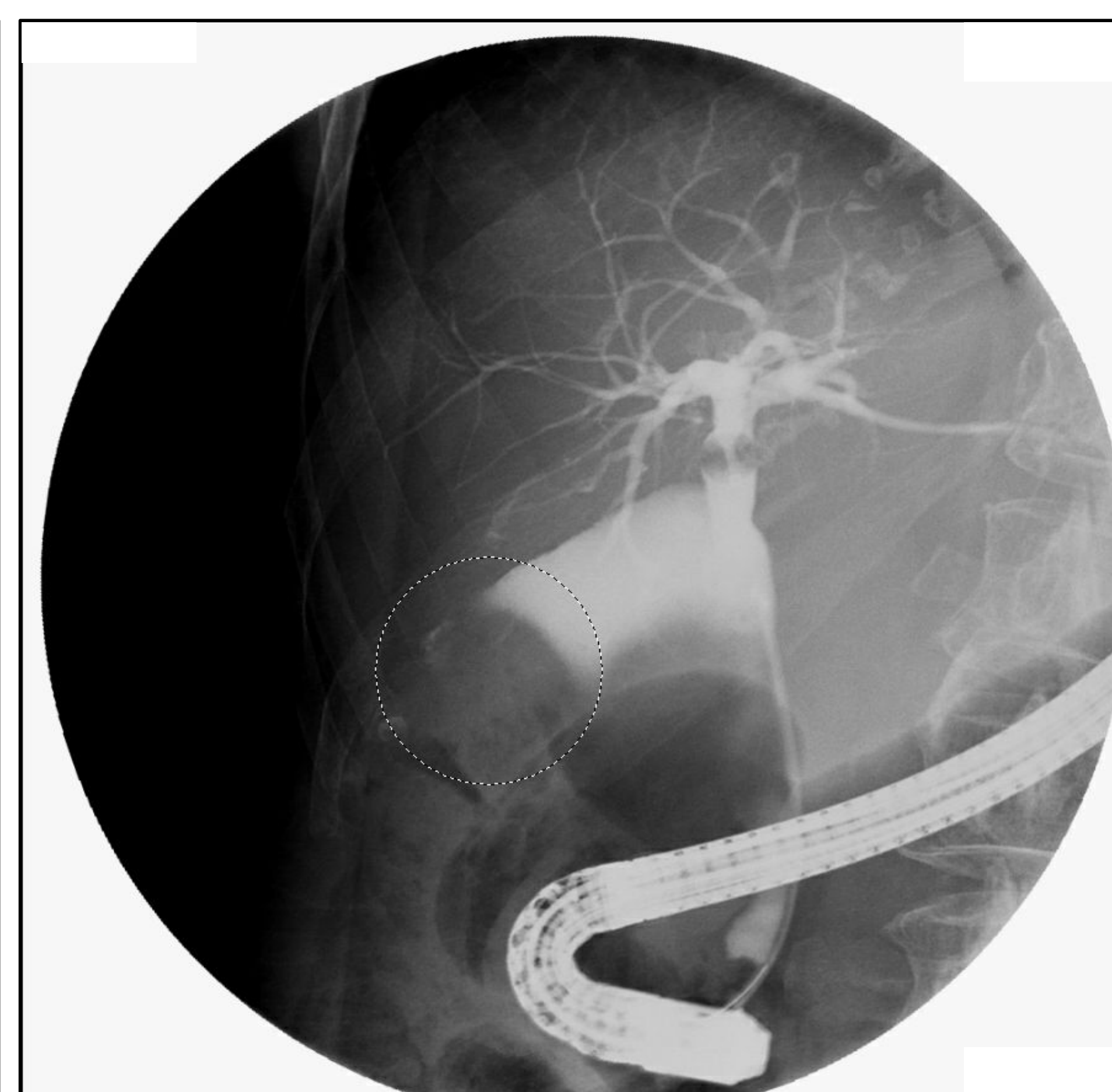


Figure 2: Fluoroscopic view following successful creation of choledochoduodenostomy

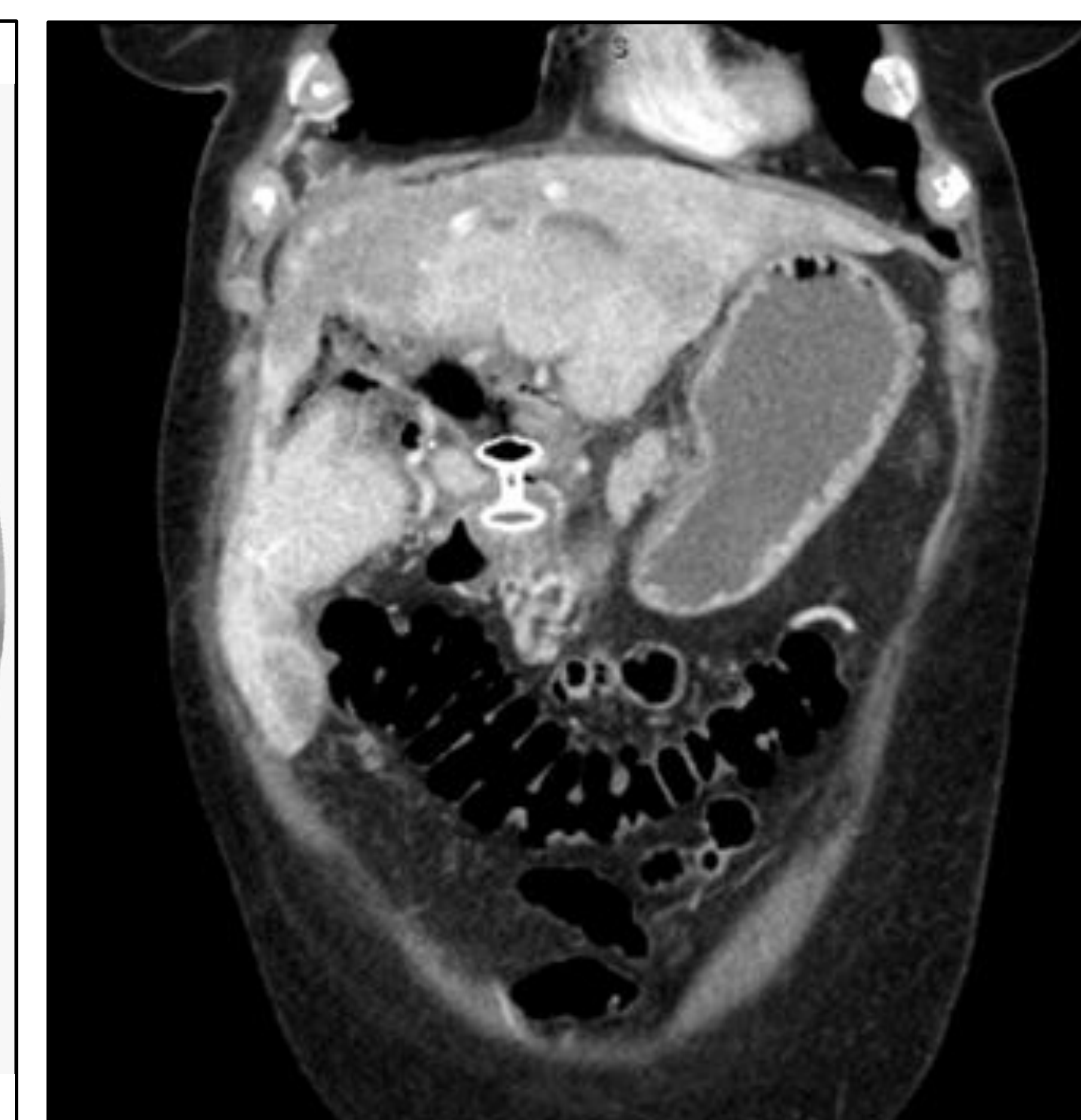


Figure 3: CT coronal view demonstrating LAMS completed via EUS-CD



Figure 4: Fluoroscopic view of the standard upper scope traversing through the LAMS for definitive lithotripsy and dredging of remaining choledocholithiasis



Figure 5: Endoscopic view of LAMS



Figure 7: Fluoroscopic view of placement of double pigtail stents within LAMS



Figure 6: Direct cholangioscopic view achieved with a standard upper scope



Figure 8: Endoscopic view of the final LAMS placement with double pigtail plastic stent

Discussion

- Biliary complications seen in 10-15% of OLTs
- OLTs often require multiple ERCP for recurrent disease
- Cholangitis is a severe disease with high mortality rates (10-30%) if not treated in a timely manner
- Compared to the general population, endoscopic complications rates are higher in OLTs (9%); with each subsequent ERCP, cumulative procedural risk and mortality additionally increases
- Patient had undergone 26 ERCPs and additionally on Warfarin putting her at high risk for complications with future procedures

Conclusions

- This case represents the first reported case of successful use of EUS-CD with LAMS in a post-OLT patient bringing up the feasibility of usage in patients with similar presentations
- Additional studies will be needed to better ascertain the risk and safety profile of such procedures in this cohort of patients

References

1. Anderloni, A., Fugazza, A., Troncone, E., Auriemma, F., Carrara, S., Semeraro, R., Maselli, R., Di Leo, M., D'Amico, F., Sethi, A., & Repici, A. (2019). Single-stage EUS-guided choledochoduodenostomy using a lumen-apposing metal stent for malignant distal biliary obstruction. *Gastrointestinal Endoscopy*, 89(1), 69–76. <https://doi.org/10.1016/j.gie.2018.08.047>
2. Kochhar G, Parungao JM, Hanouneh IA, Parsi MA. Biliary complications following liver transplantation. *World J Gastroenterol*. 2013 May 21;19(19):2841-6. doi: 10.3748/wjg.v19.i19.2841. PMID: 23704818; PMCID: PMC3660810.
3. Timely and successful treatment of cholangitis is particularly important as the mortality rate is high (10-30%)
4. Compared to the general population, endoscopic complicated rates are higher in liver transplants with a rate up to 9%
5. It is well known that with each cholangitis episode and subsequent ERCP that the cumulative procedural risk and mortality increases.