

Introduction

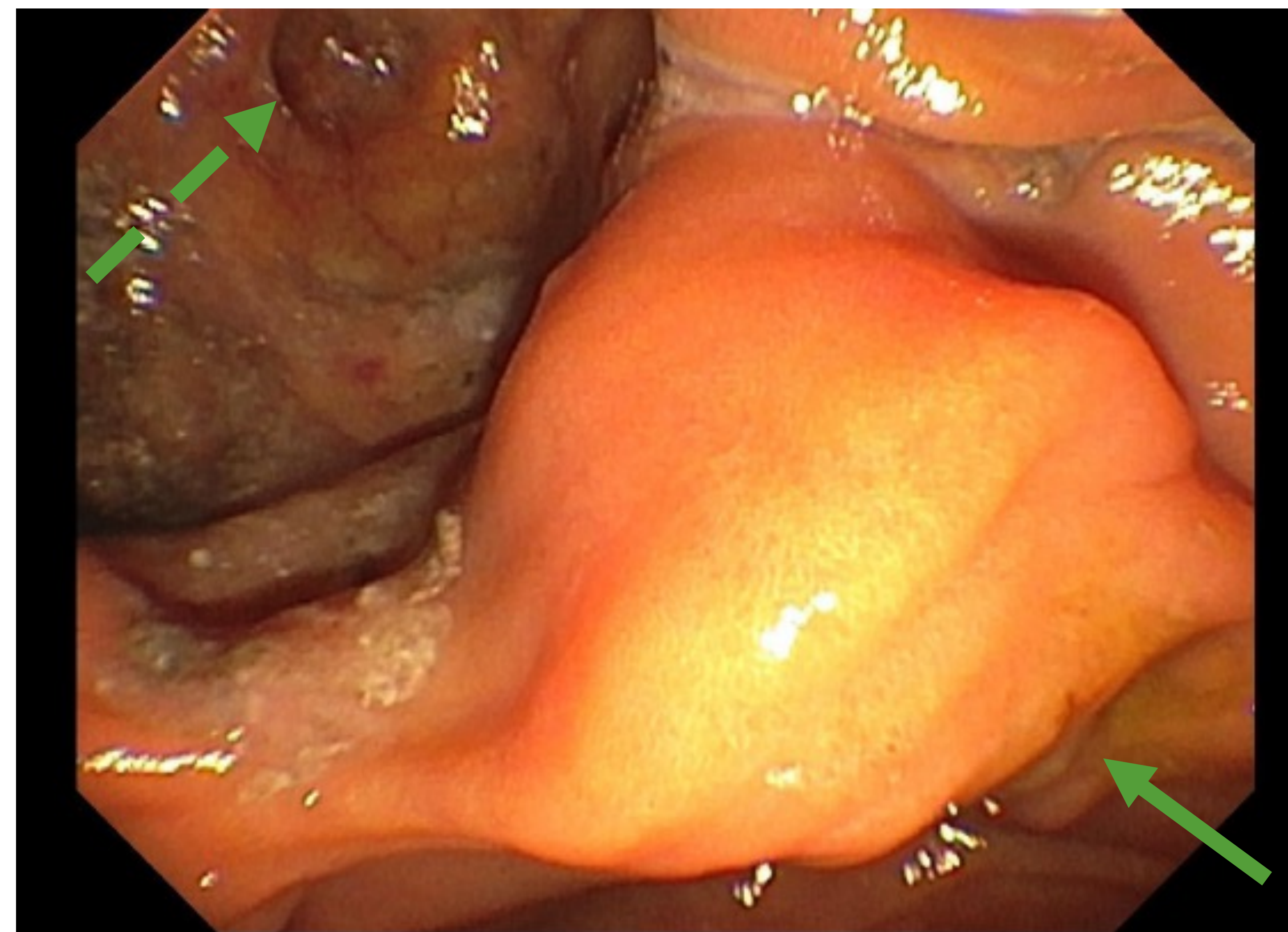
Lemmel's Syndrome is a rare form of obstructive jaundice that is often misdiagnosed. We report a case of elusive jaundice masquerading as drug-induced liver injury until endoscopy revealed the presence of a periampullary diverticulum.

Case Presentation

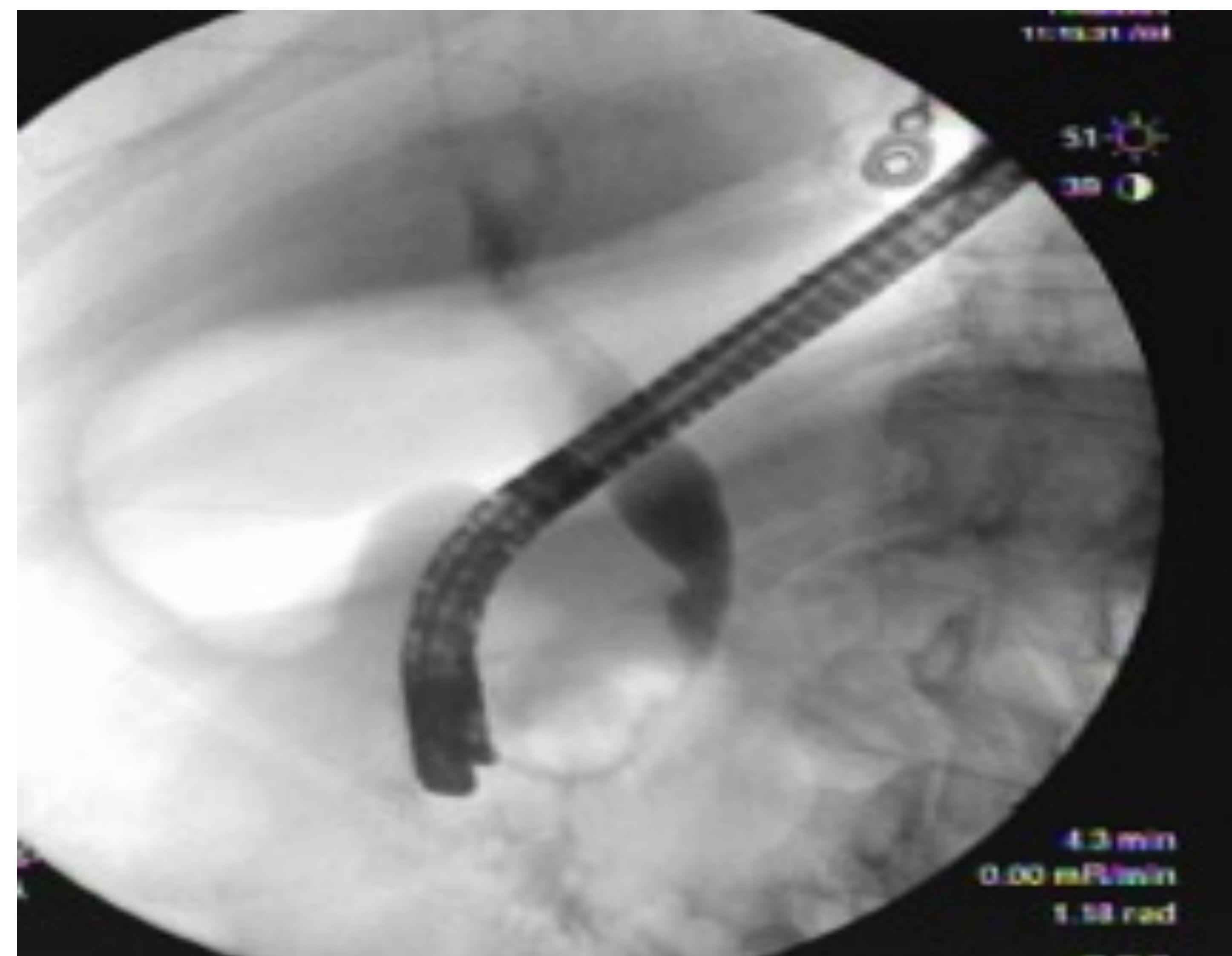
A 79-year-old man presented with fatigue and pruritus. Medical history was notable for recent *E. coli* bacteremia treated with cefdinir. Upon presentation, vital signs were normal. Laboratory studies revealed total bilirubin of 8.6 mg/dL, direct bilirubin 6.1 mg/dL, AST 106 U/L, ALT 236 U/L, alkaline phosphatase 854 U/L, and GGT 1120 U/L.

Hospital Course

- Day 1 CT of the abdomen/pelvis showed dilation of the pancreatic duct and intra/extrahepatic bile ducts.
- Day 2 MRCP had similar findings as CT of the abdomen/pelvis. Additionally, no biliary stones or masses were appreciated.
- Day 3 Dedicated CT of the pancreas was also negative for pancreatic and biliary lesions.
- Day 4 EGD with EUS showed ductal dilation but was otherwise unremarkable.
- Day 6 Liver biopsy revealed evidence of cholestasis. Steroid therapy was started for possible drug induced liver injury, however cholestasis continued to worsen, and abdominal pain ensued
- Day 9 Repeat EGD with a duodenoscope revealed a patulous ampulla and large periampullary diverticulum (**1a**).
- Day 11 ERCP was performed revealing no choledocholithiasis or stricture; however, an irregularity was found in the distal common bile duct due to compression from the diverticulum (**1b**).



(1a) Periampullary diverticulum, with solid arrow demarcating the papilla and dashed arrow revealing the large periampullary diverticulum containing smaller internal diverticuli.



(1b) ERCP with cholangiogram showing external compression of the common bile duct by the periampullary diverticulum with upstream ductal dilation.

Case Outcome

Cytology was obtained from the common bile duct irregularity which showed benign biliary epithelium. A diagnosis of Lemmel's Syndrome was made and a 10Fr 7cm plastic biliary stent was placed.

The patient's bilirubin and alkaline phosphatase quickly improved from a peak of 17.8 mg/dL and 1036 U/L, respectively, to 8.5 mg/dL and 719 U/L within 24 hours of stent placement.

Due to recurrent cholangitis requiring multiple ERCPs, the patient was referred to surgery for diverticulectomy and cholecystectomy as definitive management.

Discussion

Lemmel's Syndrome is characterized by obstructive jaundice due to a periampullary diverticulum. In many patients, the diagnosis can be challenging. In this case, the presumption of drug-induced liver injury led to a delay in the diagnosis.

Only in the setting of persistent jaundice and worsening right upper quadrant abdominal pain was the possibility of Lemmel's Syndrome entertained.

In hindsight, the patient's initial bacteremia was likely due to cholangitis in the setting of Lemmel's Syndrome. EGD with a duodenoscope assisted in confirming the final diagnosis.

Conclusion

Visualization of a periampullary diverticulum via duodenoscope is considered the gold-standard diagnostic modality for Lemmel's Syndrome. Its use should be considered in cases where suspicion for Lemmel's Syndrome is raised.