

# The Curious Case of CA 19-9 In Mirizzi Syndrome

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## Introduction

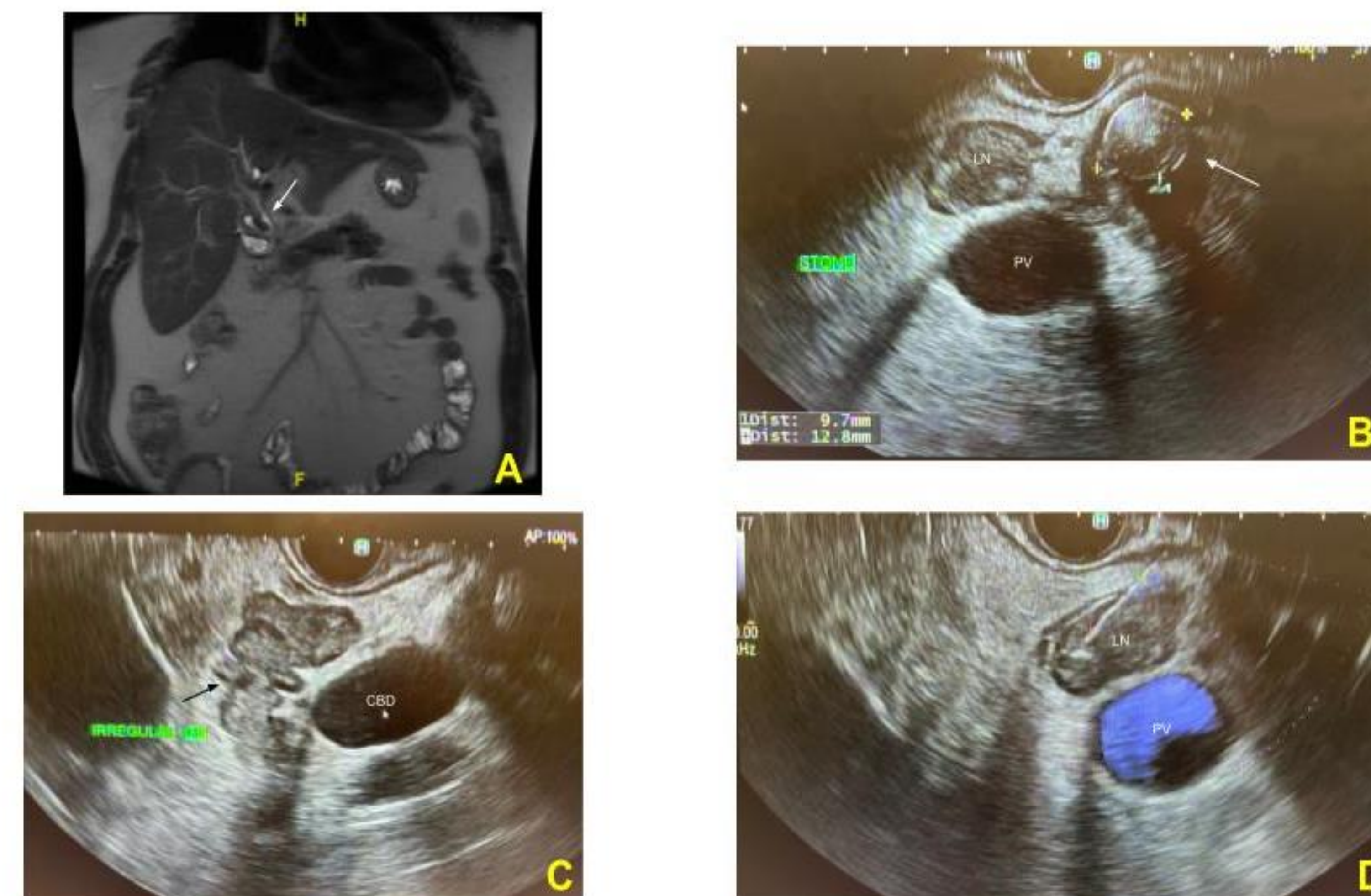
Mirizzi Syndrome (MS) is a rare complication of gallstone disease, caused by an obstructing stone in the cystic duct or the gallbladder neck, leading to mechanical obstruction of the common hepatic duct.

This case discusses the utility of EUS in improving diagnostic yield of MS and the importance of cancer screening in these patients.

## Case Presentation

- A 44-year-old male with a history of gastritis presented with right upper quadrant abdominal pain, jaundice, and scleral icterus for one week.
- Labs showed a total bilirubin of 5.4 mg/dL, AST of 66 U/L, ALT of 228 U/L, total alkaline phosphatase of 159 U/L, and CA 19-9 of 3038 U/ml.
- Ultrasound demonstrated intra- and extrahepatic biliary dilation with suggestion of a shadowing stone within the common bile duct (CBD)
- MRCP showed a 15 mm calculus presumed to be in the CBD, with a 16 mm CBD dilation.
- ERCP showed a filling defect in the midportion of the CBD, and a CBD stent was placed.
- EUS was then performed, which visualized a cystic duct stone partially extending into the CBD— a finding consistent with MS.
- An enlarged lymph node was visualized in the porta hepatis region. FNA of the lymph node as well as CBD brushings from the ERCP were both negative for malignant cells.

## Imaging



**Figure 1:**

- A.** MRI: A T2-weighted image showing a 15 mm filling defect (white arrow) within the cystic duct, partially extending into the common bile duct, consistent with an obstructing stone. Intrahepatic and extrahepatic biliary dilation is also seen.
- B.** Endoscopic ultrasound: An ovoid, hyperechoic structure, measuring 11 mm x 15 mm, with shadowing suggestive of a gallstone at the level of the cystic duct and compression of the common bile duct.
- C.** Endoscopic ultrasound: An irregularly contracted gallbladder (black arrow) with adjacent dilated common bile duct.
- D.** Endoscopic ultrasound: Fine needle aspiration of an enlarged lymph node with well defined margins in the porta hepatis region, measuring 20 mm x 15 mm in maximal cross-sectional diameter.

## Outpatient Course

Outpatient cholecystectomy 2 weeks after discharge

A 20 mm stone was removed along with the gallbladder

Surgical Findings were consistent with Mirizzi Syndrome

Intraoperative frozen section of gallbladder negative for malignant cells

CA 19-9 went from 3038 U/ml on admission to 75 U/ml post-op

## Discussion

Initial evaluation for MS should include an ultrasound or CT scan, followed by MRCP. EUS has a higher pooled sensitivity for detecting CBD stones (97%) compared to MRCP (87%). While MRCP is often used to diagnose MS, the anatomy may not be well visualized due to the proximity of the cystic duct to the CBD. Diagnosis of MS prior to surgery can be helpful in avoiding biliary tract injuries. MS evaluation should also include screening for malignancy, as MS has an association with gallbladder cancer. While elevated CA 19-9 levels are concerning for malignancy, they can also be seen in chronic benign biliary obstruction. It is important to obtain a CA 19-9 level when suspecting MS, both before and after stone removal.