

# First Trimester Hepatic Subcapsular Hematoma Following Endoscopic Retrograde Cholangiopancreatography

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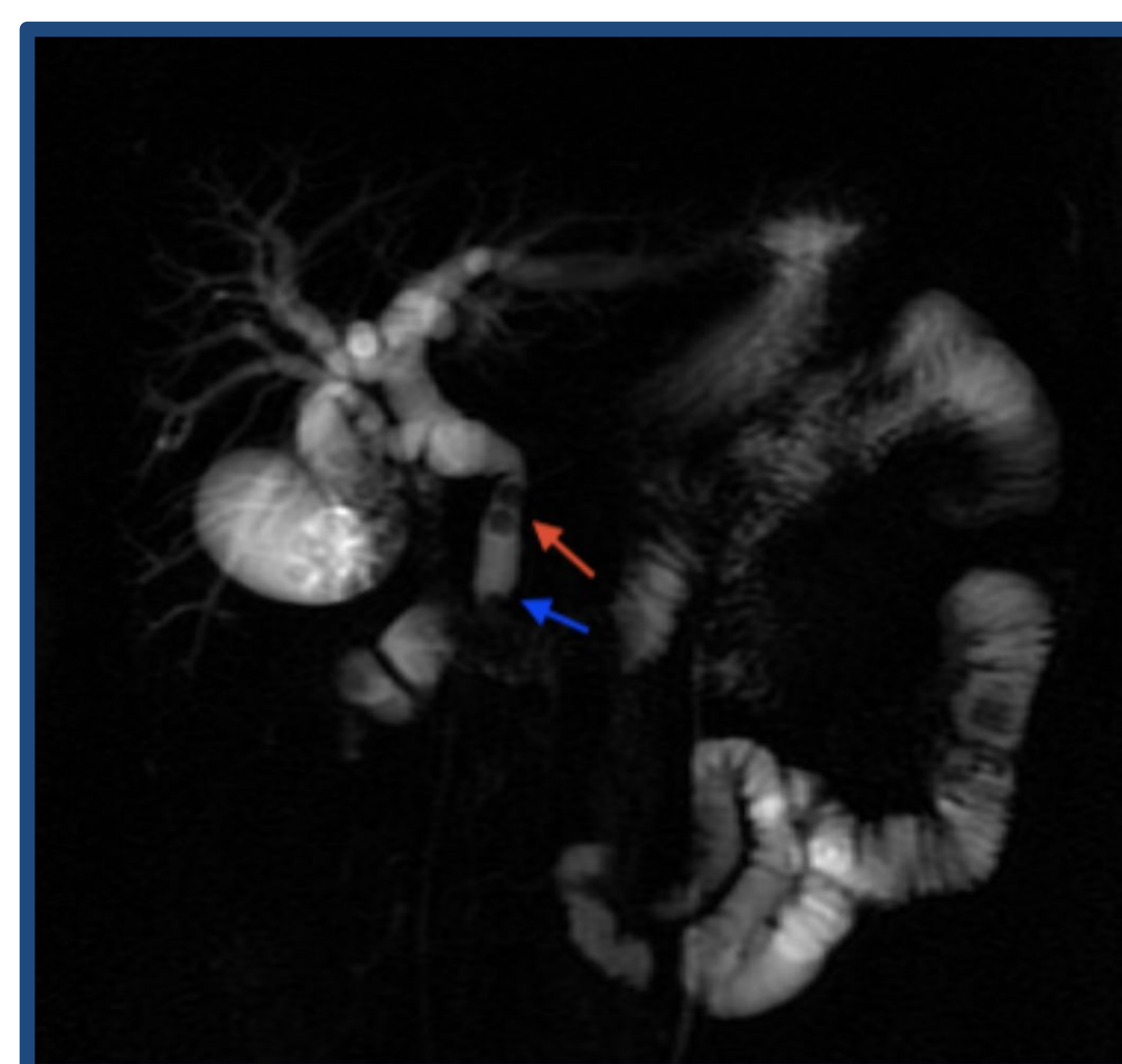
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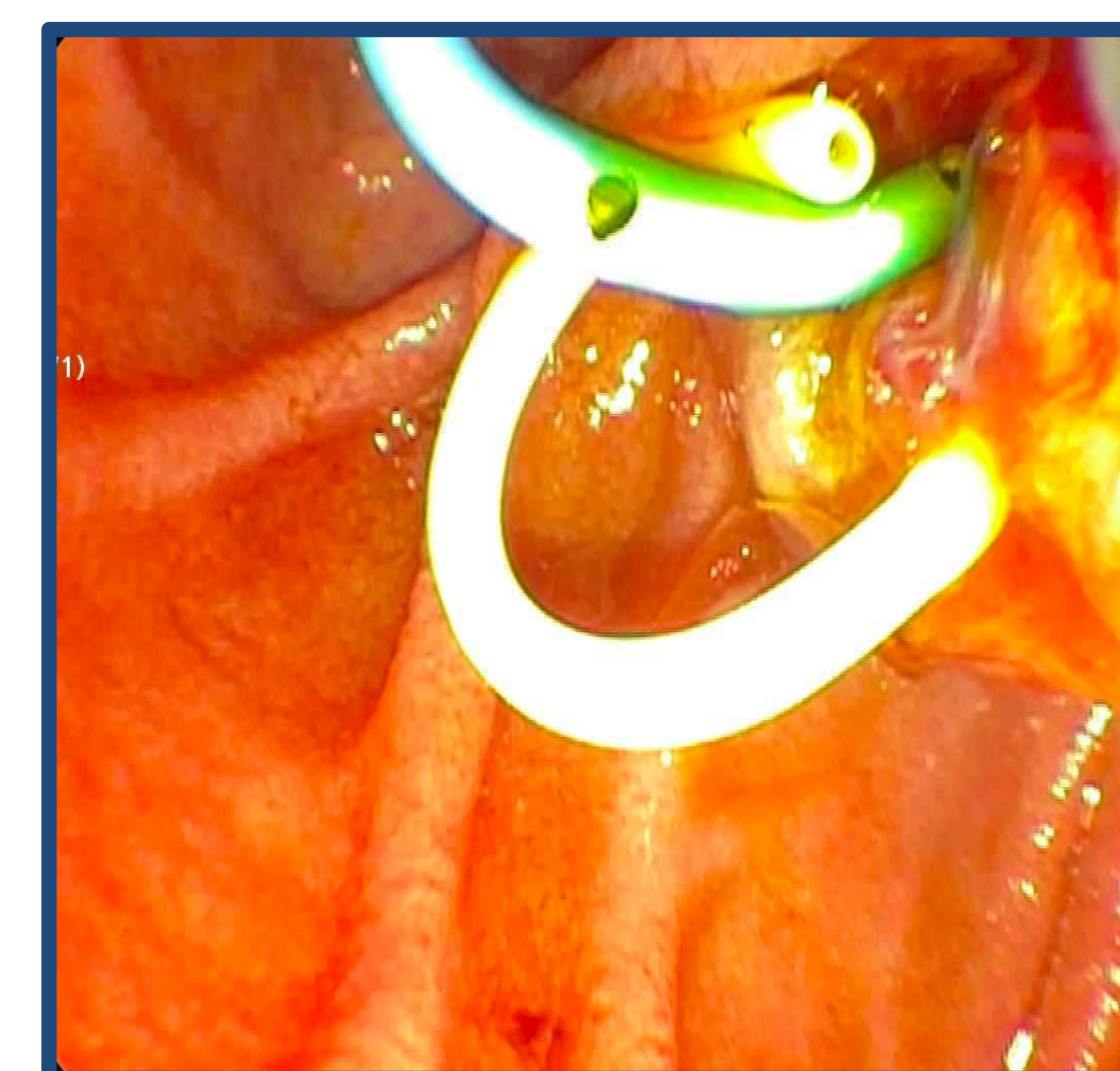
## Case Presentation and Management

- A 24-year-old female presented to the emergency department with right upper quadrant pain, nausea, vomiting, and jaundice.
- Bloodwork revealed a b-HCG of 53,783, corresponding to a 5-8 week pregnancy, and elevated LFTs (ALP 413, ALT 197, AST 141, Total bilirubin 5.0, Direct bilirubin 3.8) as indicative of a cholestatic pattern.
- Abdominal ultrasound showed evidence of cholelithiasis with a dilated common bile duct (CBD) of 1.2 cm. Magnetic resonance cholangiopancreatography revealed numerous small layering gallstones suggestive of acute cholecystitis with biliary duct dilatation.
- Therapeutic ERCP with double wire technique was performed. In efforts to minimize fluoroscopy exposure, a total of two fluoroscopic images were taken, one to confirm wire placement in the pancreatic duct and the other to confirm wire placement in the bile duct. Two 0.025 mm angled-tipped hydrophilic wires were placed into the pancreatic duct and the bile duct, respectively. Sphincterotomy was successfully performed, followed by sphincteroplasty.
- The bile duct was swept with a 12mm balloon but only one stone was extracted. To avoid further fluoroscopy exposure, double plastic stents were placed into the common bile duct and a single pigtail plastic stent into the pancreatic duct.
- The following day, she became hemodynamically unstable. A hepatic function panel showed improved cholestatic pattern after ERCP decompression with new development of hepatocellular injury, likely related to ischemic hepatopathy.
- A computed tomography angiogram revealed a 3.9 cm hepatic subcapsular hematoma (HSH) with capsular retraction and parenchymal distortion of the superior right hepatic lobe.
- Following an unsuccessful catheter embolization, aggressive conservative management with blood transfusions and close monitoring was successful in stabilizing the patient. The patient ultimately had a spontaneous abortion.
- Three months later, she returned for an outpatient ERCP with biliary stent removal and stone extraction.

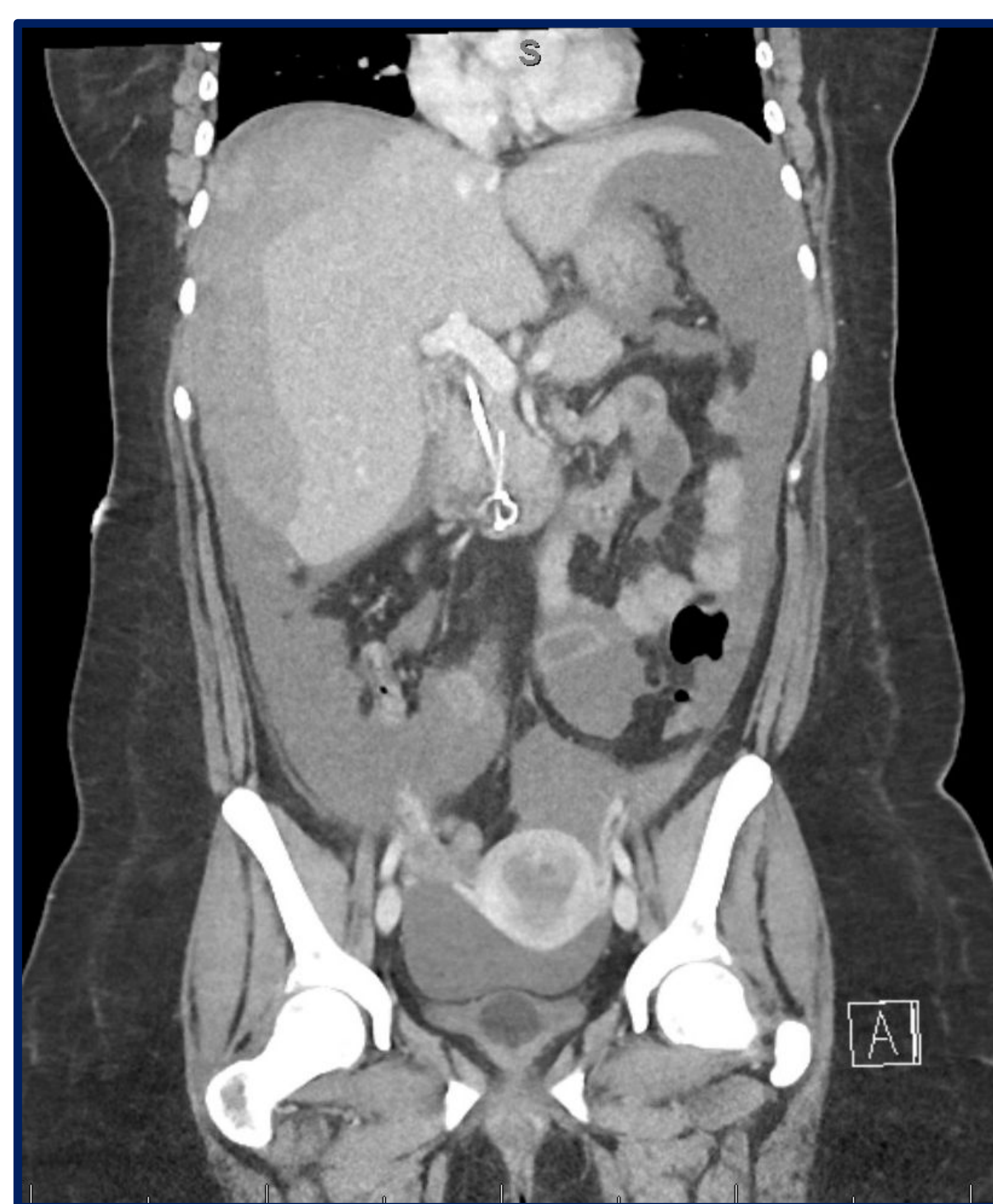
## Imaging



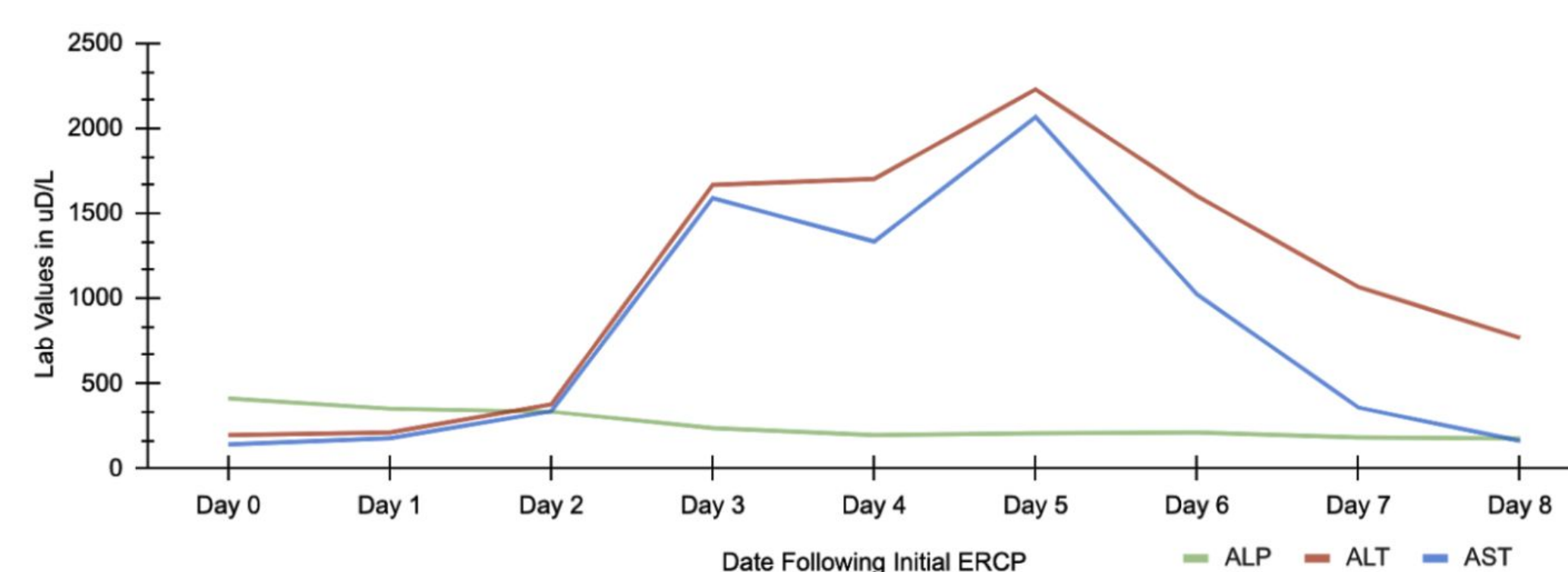
**Figure 1.** MRCP imaging with demonstrated choledocholithiasis with a red arrow showing two stones visible in the mid common bile duct. One obstructing stone is also shown with a blue arrow in the distal common bile duct.



**Figure 2.** Major papilla status post sphincterotomy and sphincteroplasty, blue biliary stent and white pancreatic stent.



**Figure 3.** Computed tomography of the abdomen showing hypodense subcapsular collection suggestive of hemorrhage on the right side of the liver. A plastic pancreatic stent and biliary stent are visible.



**Figure 4.** Serial labwork following ERCP-induced liver injury.

## Discussion

- Endoscopic retrograde cholangiopancreatography (ERCP) is commonly utilized to treat pancreaticobiliary diseases and is considered safe in pregnancy.<sup>1</sup> We describe a case of therapeutic ERCP indicated for choledocholithiasis in a newly pregnant patient which resulted in rare complications due to wire trauma, including hemorrhagic shock and hepatic hemorrhage.
- As most cases of HSH take days to present with symptoms, HSH can be difficult to diagnose if abdominal pain does not occur early. The source of pain can become more challenging to diagnose post-ERCP, considering other commonly known ERCP-related complications such as acute pancreatitis.
- HSH has the highest maternal and perinatal fetal mortality rates out of all known hepatobiliary diseases. While maternal mortality rate has decreased over the past few decades from 22% to 16%, perinatal fetal mortality rates have stayed virtually unchanged at 30%.<sup>2</sup> Early diagnosis and aggressive, multidisciplinary management of HSH is critical in reducing perinatal mortality rates.

## Conclusions

This case highlights the possibility of guide wire trauma leading to spontaneous abortion in a first trimester pregnancy. Post ERCP HSH can be difficult to diagnose as clinically significant guide wire injuries are rare and angled-tipped hydrophilic wires are often perceived as harmless. While optimal safety measures must be implemented and every effort should be taken to reduce radiation exposure to protect the mother and the fetus during ERCP, there is sufficient evidence to suggest that fluoroscopy is generally safe in pregnant women.<sup>1-4</sup> Adequate and appropriate use of fluoroscopic guidance is essential to ensuring safe biliary cannulation and wire manipulation when performing ERCP.<sup>4</sup>

## References

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