ISSN: 2977-022X

Case Report

Journal of Gastroenterology & Endoscopy

Ercp without Radiation in a Twin Gestation: A Case Report on Managing Choledocholithiasis with Cholangitis During Pregnancy

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Received: September 15, 2025; **Accepted:** September 22, 2025; **Published:** September 29, 2025

ABSTRACT

Performing endoscopic retrograde cholangiopancreatography (ERCP) during pregnancy, particularly in multiple gestations, presents unique clinical and technical challenges due to potential risks of fetal radiation exposure. This case details the successful management of choledocholithiasis complicated by cholangitis in a 30-year-old primigravida at 27 weeks of twin pregnancy using a radiation-free ERCP technique guided by transabdominal ultrasonography. This report highlights procedural modifications, clinical outcome, and current literature supporting this evolving approach.

Introduction

Choledocholithiasis, the presence of stones in the common bile duct (CBD), during pregnancy is uncommon but can lead to severe complications such as cholangitis, pancreatitis, and adverse fetal outcomes if untreated. Its management poses unique challenges, balancing the need for effective treatment with the safety of the fetus. Endoscopic retrograde cholangiopancreatography (ERCP) is the preferred method for managing symptomatic biliary obstruction during pregnancy due to its minimally invasive nature. However, radiation exposure associated with fluoroscopy can pose risks to fetal health, especially in twin pregnancies. We reported the successful use of ultrasound-guided ERCP in a twin pregnancy to minimize radiation exposure and achieve a favorable maternal and fetal outcome.

Case Report

A 30-year-old primigravida at 27 weeks of gestation with a confirmed dichorionic diamniotic twin pregnancy presented with right upper quadrant pain, pruritus, jaundice, and nausea for one week. She was hemodynamically stable and afebrile at presentation, with physical examination revealing mild tenderness in the right upper abdomen. Obstetric examination confirmed live twins with appropriate growth for gestational age. Her Investigations revealed, Progressive hyperbilirubinemia with total/direct bilirubin increased from 2.8/1.6 to 4.4/2.1 mg/dL, elevated hepatic enzymes: SGOT/SGPT up to 337/477 U/L, serum bile acids significantly raised (85.30 mMol/L), leukocytosis (TLC up to 13,000/mm^3), normal renal profile and coagulation parameters. Ultrasound abdomen showed hepatomegaly with fatty infiltration, gallbladder thickening, multiple calculi, and a dilated common bile duct (CBD) measuring 16.5 mm. The distal CBD appeared obscured, suggesting distal obstruction. Obstetric sonography confirmed live twin pregnancy at 27+6 weeks with breech (Twin A) and transverse (Twin B) lie.

Based on clinical, biochemical, and imaging findings, a diagnosis of choledocholithiasis with acute cholangitis in a twin pregnancy was established. In light of progressive cholestasis and risk of worsening cholangitis, a decision was made to proceed with ERCP without fluoroscopy, guided entirely by real-time abdominal ultrasound. After pre-anesthetic and obstetric clearance, the patient underwent the procedure under conscious sedation (Midazolam 1.5 mg, Fentanyl 40 mcg, Buscopan 10 mg), with continuous fetal monitoring.

ERCP Procedure

A bulging ampulla was identified endoscopically. Selective CBD cannulation was performed and confirmed through bile aspiration

Citation: Rakesh Kumar Jagdish, Harsh Kapoor. Ercp Without Radiation in A Twin Gestation: A Case Report on Managing Choledocholithiasis with Cholangitis During Pregnancy. J Gastro Endosc. 2025. 3(3): 1-2. DOI: doi.org/10.61440/JGE.2025.v3.35

and transabdominal USG visualization. Sphincterotomy was carried out, followed by ampulloplasty with a 9 mm balloon. Multiple balloon sweeps led to successful extraction of four stones (each \~10–12 mm) along with biliary gravel. A 10 Fr × 7 cm plastic biliary stent was placed for ongoing drainage, with stent position verified sonographically. Post-procedure monitoring confirmed stable maternal vitals and fetal well-being, with both fetuses demonstrating normal cardiac activity. The patient had rapid clinical recovery and was discharged in a stable condition with outpatient follow-up advice.

Discussion

Managing biliary obstruction in pregnancy, particularly when complicated by infection, necessitates timely intervention to prevent both maternal and fetal morbidity. ERCP is the gold standard for such interventions but traditionally involves fluoroscopic guidance, which carries ionizing radiation risks-a significant concern during gestation, especially in the second and third trimesters where organogenesis is complete but fetal growth and neurodevelopment are still sensitive to radiation exposure [1].

Why Radiation-Free ERCP?

Advances in ultrasound-guided ERCP now allow safe cannulation and therapeutic maneuvers without fluoroscopy. Bile aspiration confirms CBD access, eliminating the need for contrast injection and X-ray USG can reliably confirm CBD dilation, stone removal, and stent placement in real time [2,3]

Evidence from Literature

Kahaleh et al demonstrated safe and successful ERCP in pregnancy without fluoroscopy using bile aspiration as a marker for ductal entry [3]. Lopes et al. and others confirm feasibility of transabdominal USG-guided ERCP, reducing fetal radiation risk while maintaining therapeutic efficacy [2]. A meta-analysis by Mekky et al. involving 47 studies found no significant fetal or maternal complications when ERCP was performed with radiation-sparing techniques during pregnancy. The ASGE recommends ERCP in pregnancy when clearly indicated, especially with signs of ascending cholangitis, provided measures are taken to reduce or avoid fetal radiation exposure [4-6).

Conclusion

This case reinforces the safety and feasibility of non-radiation ERCP in the treatment of symptomatic choledocholithiasis with cholangitis in a twin gestation. Use of transabdominal ultrasound guidance, multidisciplinary collaboration, and fetal monitoring ensures both maternal and fetal safety while enabling effective therapeutic intervention. This approach represents a valuable alternative to traditional fluoroscopic ERCP in pregnant patients.

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