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Case Report

Successful Endoscopic Management of Residual Choledocolithiasis in Pregnancy: A Case Report

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Abstract

The state of pregnancy generates a series of physiological changes that increase the risk of pathologies compared to non-pregnant women. At the level of the bile duct, bile salt stasis occurs, which increases the ability to generate stones. However, most patients are asymptomatic and respond adequately to expectant management and medical therapy. The rate of complications is low, with acute cholangitis, choledocholithiasis and acute pancreatitis being the indication for invasive management in obstetric patients.

We present a clinical case of an obstetric patient with a history of cholecystectomy who presented residual choledocholithiasis with a subsequent episode of acute cholangitis and obstructive jaundice that required management with endoscopic retrograde cholangiopancreatography.

Keywords: Choledocholithiasis, Pregnancy, Cholangitis, Endoscopic retrograde cholangiopancreatography

Introduction

Choledocholithiasis or main bile duct stones are defined as the presence of stones in the common bile duct as a consequence of their formation in situ in the bile duct (primary choledocholithiasis) or secondary to the migration of stones from the gallbladder (secondary choledocholithiasis).[1] Residual choledocholithiasis, a variety of secondary choledocholithiasis, is documented in less than 2% of postcolectomy patients and is defined as the presence of stones in the common bile duct less than two years after cholecystectomy.[2]

Pregnancy is associated with a higher incidence of stones in the bile duct, with cholelithiasis and its complications being the second cause of non-obstetric surgery in pregnant women, with an incidence of around 4%.[3]

Medical treatment is usually the choice in asymptomatic patients or without complications; however, endoscopic retrograde

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cholangiopancreatography (ERCP) or laparoscopic surgery is the therapy of choice in the event of complications that compromise maternal-fetal well-being.

We present the case of a pregnant patient with a history of cholecystectomy who presented residual choledocholithiasis as a complication and subsequent acute cholangitis, for which invasive management with ERCP was indicated, which was successfully tolerated.

Clinical Case

Female patient, 23 years old, from Cartagena-Bolívar, housewife, with a history of laparoscopic cholecystectomy for cholelithiasis 7 months ago, with a pregnancy of 22.1 weeks of gestation by first-trimester ultrasound who consults the emergency service due to a clinical picture of four days of evolution, consisting of insidious onset, colicky pain in the right upper quadrant of intensity 6/10 on a pain analog scale, radiating to the dorsal region, which is exacerbated by meals and is attenuated at night , also reports that for 24 hours he has presented icteric coloration in the sclera and palms of the hands associated with dark urine.

On physical examination we found normal vital signs, TA: 118/68, HR 78 bpm, FR 18 rpm, T 37.4° saturation of 99% on room air, with icteric tint in the sclera and hands, abdominal examination revealed a globular abdomen due to a gravid uterus. , UA 21 cts, single fetus alive, fetal heart rate 143 beats per minute, no uterine dynamics perceived, with pain on deep palpation of the right hypochondrium, no signs of peritoneal irritation, normal configured external genitalia, vaginal examination with normothermic vagina , long, central, soft neck, closed internal cervical os.

Paraclinical examinations are performed on admission where a mixed profile (hepatocellular and cholestatic) is appreciated. The paraclinical tests are summarized in Table 1. Abdominal ultrasound plus cholangioresonance is performed, showing the absence of a gallbladder due to surgical history and the presence of a residual calculus in the common bile duct; once it is assessed by the gastroenterology service, it is considered as a possible diagnosis of biliary lithiasis at the level of the common bile duct and they indicate conservative medical management due to the pregnant state.

During the hospital stay, the patient evolves torpidly, with general malaise, the appearance of fever spikes with body temperature at 38.6 degrees Celsius, increased intensity of pain in the right hypochondrium and recurrent emetic episodes, for which new paraclinical tests are indicated that result in elevation of bilirubins compared to admission data, with elevated alkaline phosphatase and transaminases compatible with a cholestatic pattern. The paraclinical controls are summarized in Table 2.

Table 1: Admission paraclinics.

Paraclinical	Result
Hemoglobin	12.40g/dL
hematocrit	35.80%
White blood cell count	8.49 x10^3/µL
Platelet Count	423.00 x10^3/µL
Prothrombin Time PT	12.8 sec
Partial Thromboplastin Time	28.10 sec
Total bilirubin	2.78mg/dl
Direct bilirubin	2.08mg/dl
Indirect Bilirubin	0.7mg/dl
Alkaline phosphatase	589.83U/L
Gamma Glutamyl Transferase GGT	203.3U/L
Alanine Amino Transferase GPT	241.38U/L
Aspartate Amino Transferases GOT	295.22U/L
C-Reactive Protein	9mg/dl

Table 2: Paraclinical control tests.

Paraclinical	Result
Hemoglobin	11.20g/dL
hematocrit	32.60%
White blood cell count	9.85 x10^3/µL
Platelet Count	420.00 x10^3/µL
Prothrombin Time PT	12.8 sec
Partial Thromboplastin Time	30 sec
Total bilirubin	3.67mg/dl
Direct bilirubin	3.06mg/dl
Indirect Bilirubin	0.61mg/dl
Alkaline phosphatase	489.30U/L
Alanine Amino Transferase GPT	304.6U/L
Aspartate Amino Transferases GOT	251.87U/L
C-Reactive Protein	12.5mg/dl

The procedure is performed without any complications, confirming the diagnosis of choledocholithiasis.The intraoperative findings were as follows: evidence of dilated intrahepatic and extrahepatic bile duct with 18mm common bile duct, evidence of filling defect in the distal third of the common bile duct, which corresponds to a 12mm gallstone, a wide sphincterotomy was performed, a Dormia basket was introduced and The stone was removed, a Fogarty balloon was inserted, biliary sludge was removed and a stent was placed in the bile duct Figure 1.

In her immediate postoperative period, the patient is stable, with a favorable evolution of the clinical picture, afebrile, without abdominal pain, with control paraclinics that show a decrease in

bilirubin and a progressive decrease in alkaline phosphatase and transaminases. Fetal well-being was confirmed with obstetric ultrasound, so it was decided to discharge the patient with outpatient follow-up by gastroenterology and obstetrics.

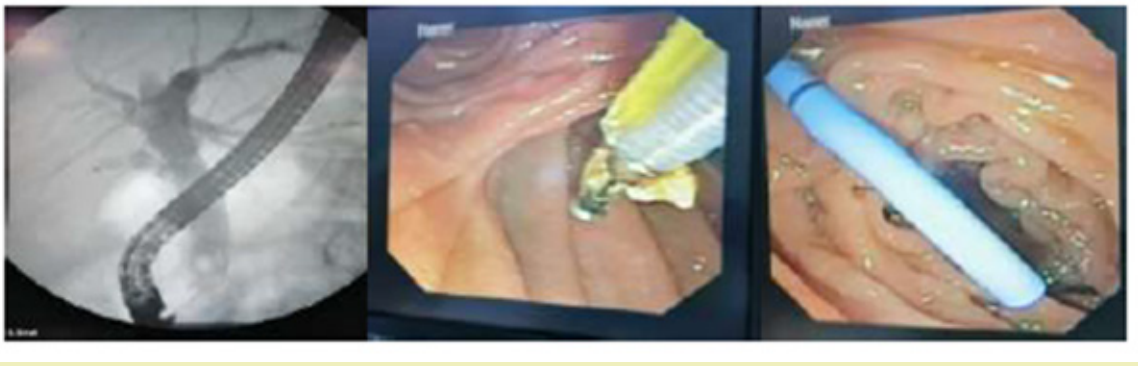

Figure 1: Intraoperative findings in the bile duct.

Discussion

The tendency to stone formation in pregnancy is high due to changes in the physiology of the bile duct; pregnancy modifies the composition of bile and produces supersaturation of cholesterol with an increase in cholic acid and the reserve of other bile acids; In addition, the hormonal change causes an inhibition of the contraction of the bile duct muscles, promoting the precipitation of cholesterol crystals and the formation of stones.[4]

Cholelithiasis and its subsequent complications are the second cause of non-obstetric surgery in pregnant women, just after acute appendicitis. The prevalence of asymptomatic stones in pregnant women ranges from 2.5% to 12%. However, the presence of complications such as acute cholecystitis, choledocholithiasis and acute pancreatitis are infrequent, the presence of residual choledocholithiasis being even less common in a pregnant woman with a history of recent cholecystectomy as in the case of our patient.[5]

The symptoms of gallbladder disease during pregnancy are similar to those that occur in non-pregnant women; colicky abdominal pain located in the epigastrium or in the right upper quadrant that spreads to the scapular region, right flank and shoulder is the most frequent symptom and is usually associated with hyporexia, nausea, vomiting, dyspeptic symptoms and sometimes food intolerance fatty; however, many of the pregnant women are asymptomatic during pregnancy and postpartum, making the diagnosis incidentally with prenatal ultrasound performed for other reasons.[6]

Once the presence of stones in the bile duct is documented, regular follow-up should be carried out to determine the progression of the disease, with abdominal ultrasound being the first test to be performed with diagnostic utility, detecting stones in the bile duct as small as 2 mm with a sensitivity around 95% and with the advantage of not causing ionizing radiation that puts fetal well-being at risk.[7,8]

During pregnancy, if common bile duct stones are suspected, radiographic images of the bile duct may be obtained provided the mother's pelvis is protected, fetal well-being is ensured, and the total radiation dose is less than 5 absorbed radiation doses. However, it is recommended that radiographic imaging be limited to the second and third trimesters. Performing ERCP as a diagnostic and therapeutic option is safe with a preterm delivery rate of less than 5%; however, its indications are limited to acute cholangitis, persistent jaundice, or severe pancreatitis with suspected choledocholithiasis, and the fetus should be protected from radiation and fluoroscopy time minimized.[8]

The initial treatment is conservative management, especially in asymptomatic patients, with early indication of intravenous fluids, analgesic and antibiotic management in order to reduce maternal and fetal morbidity associated with surgery. Pain control is mandatory during pregnancy with hydration and drugs that do not compromise the maternal-fetal duality such as paracetamol or NSAIDs, both being category B.

In more severe cases, surgical management by laparoscopic approach has been associated with a better prognosis because open surgery during the first trimester predisposes to abortion and in the third trimester to premature delivery.[9] However, to date there are no conclusive clinical trials that compare medical management vs. surgical management with respect to cholelithiasis, choledocholithiasis and symptomatic relapse, with the decision of invasive management guided by clinical judgment.

Conclusions

Pregnancy is an additional risk factor for the appearance of stones in the bile duct due to biliary stasis and precipitation of bile salts. The management of choice for choledocholithiasis associated with pregnancy is controversial even due to the lack of conclusive clinical trials. The current recommendation for initial therapy is

medical management, however, in the presence of complications such as acute cholangitis, obstructive jaundice, and severe pancreatitis due to gallstones in the bile duct, invasive management is indicated and laparoscopic cholecystectomy or ERCP with fetal protection is preferred as emergency therapy. First line in this type of patients, since they reduce the risk of catastrophic complications for the mother and the fetus.

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Conflicts of Interest

Authors declares that there is no conflicts of interest.

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