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ACUTE CHOLECYSTITIS IN PREGNANCY –A REVIEW

General Surgery

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ABSTRACT

Cholecystitis is an inflammation of the gallbladder caused by obstruction of the cystic duct. A gallstone usually causes the obstruction (calculus cholecystitis). However, in some cases the obstruction may be acalculous or caused by sludge. The clinical course of biliary sludge varies, from complete resolution to gallbladder obstruction. This obstruction can result in gallbladder distension and acute cholecystitis. When inflammation occurs it could either be aseptic or bacterial. Biliary disease during pregnancy is relatively rare and occurs mainly during the last trimester. Whether women who are pregnant or have multiple pregnancies are more likely to develop stones or whether they are simply more symptomatic with stones is unknown.. In our case cholecystitis responded very well to treatment with amoxicillin, with no detrimental effects for mother and child. A healthy child was born at term. In the differential diagnosis of liver function abnormalities during pregnancy, cholelithiasis should be included. : Controversy still exists regarding the optimal management of complicated gallstones during pregnancy owing to the possible risks for the fetus. Generally the management of such problems during pregnancy is conservative, however, endoscopic retrograde cholangiopancreatography (ERCP) and/or operative intervention may be required in some patients.

KEYWORDS

Acute cholecystitis; choledocholithiasis; cholelithiasis; pregnancyd

INTRODUCTION

Pregnancy is a continuous dynamic state that affect the maternal physiology at any given time throughout the 40 weeks of gestation and postpartum period. Abdominal discomfort and pain are common complaints that may be related to pregnancy itself or to non-obstetric causes. The incidence of acute abdomen during pregnancy is approximately 1 in 500 pregnancies. Appendicitis, cholecystitis, pancreatitis, and bowel obstruction are the most commonly reported nonobstetric abdominal surgical conditions seen in pregnancy. In any event, when right upper quadrant pain is reported, the differential diagnosis should encompass uterine contraction, fetal movement, uterine rupture, ectopic pregnancy, adnexal torsion or rupture, liver hematoma,, cholecystitis, cholangitis, hepatitis,pancreatitis, and peptic ulcer .

During pregnancy, the metabolic, synthesizing and excretory functions of the liver are influenced by increases in serum estrogen and progesterone [3]. The gallbladder serves as a reservoir for bile produced by the liver. Following ingestion of food with a high lipid content, the gallbladder contracts and ejects bile salts into the intestine. Elevation of estrogen during pregnancy results in cholesterol crystal aggregation, hence increasing the viscosity of bile and the risk of cholelithiasis. Progesterone induces gallbladder smooth muscle relaxation, leading to bile stasis, which in turn, also increases the risk of cholelithiasis. The incidence of acute cholecystitis in pregnancy is reported in approximately 0.2–0.5 per 1,000 pregnancies. Depending on gestational age and symptoms, different methods of management have been reported, ranging from supportive care, antibiotics, percutaneous transhepatic gallbladder drainage.

Patients And Methods

The medical records of patients admitted with a diagnosis of uncomplicated and complicated cholelithiasis during pregnancy at jawahar Lal Neharu Medical college Hospital, Bhagalpur ,Bihar from March 1999-October 2018 were reviewed retrospectively. All patients had gallstones proven by ultrasonography (US). The diagnosis of biliary colic was made in patients who presented with right upper quadrant (RUQ) pain in the absence of fever and leukocytosis. A diagnosis of acute cholecystitis was made if US findings of oedema of gall bladder wall or pericholecystic collection were noted in patients with RUQ pain associated with tenderness with or without fever and leukocytosis. Patients with gallstones who presented with epigastric pain along with elevated serum amylase >1,000 U.I. (NR 25-125 UI) in the absence of hyperlipidemia and hypercalcemia were diagnosed acute biliary pancreatitis (ABP). Obstructive jaundice (OJ) was diagnosed when patients with gallstones presented with clinical and chemical jaundice with ultrasonographic evidence of dilated common bile duct (CBD >7mm). Patients who presented with fever, leukocytosis or signs of toxemia in addition to obstructive jaundice were labeled as acute cholangitis.

All patients were initially treated conservatively with intravenous fluids and analgesia when required. Patients with acute cholecystitis and acute cholangitis (ACH) also received antibiotics (cephalosporins). All patients were assessed by obstetrician during hospitalization. Those who responded to conservative treatment were discharged and followed up in the outpatients clinics. They were readmitted after delivery for LC. Patients who did not respond to conservative treatment, were subjected to ERCP and/or LC after obtaining an informed and high-risk consent. ERCP was performed with a lead sheath protection to the gravid uterus. Brief exposure using 10-milliampire/second and 79 kilo volts radiation with minimal or no films was supplemented by video recording for documentation. Obstetricians were consulted before and after LC but not during the procedure. Laparoscopic cholecystectomy was performed using a low pressure CO_2 pneumo-peritoneum (10mmHg).

The collected data included patients age, gestational age, clinical presentation, laboratory results, sonographic findings, treatment methods, indications of endoscopic and laparoscopic intervention, complications and final outcome. Analysis of these data forms the basis of this study.

RESULT

Thirty-two pregnant women were admitted during the study period with complicated gallstone disease. The mean age was 32 years. The gestational age was; three patients in first trimester, ten in second and 19 patients in the third trimester of pregnancy. The admission diagnoses included ABP in 18 patients, BC in six, AC in four, ACH and OJ in two patients each. Twenty-two patients (69%) completely recovered on conservative treatment. All had LC after delivery with satisfactory outcome. The remaining ten patients (31%) needed further treatment for failure to respond to initial therapy or recurrent symptoms. One patient who presented with AC did not respond satisfactorily to conservative treatment. She was in her second trimester. She was operated, LC following which she had complete recovery. Another patient with RBC was also operated during her second trimester. Both patients had normal delivery. ERCP was performed on the remaining eight patients for persistent jaundice (four patients) and recurrent ABP (four patients). Six of them in their third

trimester, remained well after CBD clearance until delivery. Two patients with recurrent ABP in their second trimester had LC following ERCP. They had uneventful recovery. Overall five patients needed more than one hospitalization for recurrent symptoms (one patient with BC and four patients with ABP). Out of eighteen patients with ABP admitted, four (22%) were readmitted with recurrent pancreatitis within the same pregnancy.

DISCUSSION

Although pregnancy does increase the risk of gallstones and sludge formation in pregnant women, it does not seem to increase the likelihood of their complications . Valdivieso has studied 980 women immediately after delivery and 150 nulliparous controls and found that 12% of the former group had gallstones compared to 1.3% control group [9] . This finding is probably explained by the increase in progesterone secretion which remains high during the second and third trimester leading to smooth muscle relaxation and hence gallbladder dilatation and stasis [10] . Many studies have shown that 60-69% of pregnant women who have gallstones were asymptomatic and only discovered incidentally during prenatal check up .

The common complications of gallstones include RBC, AC, ABP, OJ and ACH. Such complications are the second common nongynecological conditions that require admission and surgical intervention during pregnancy [4] . Almost 20-30% of patients with gallstones will have biliary colic and if cholecystectomy was not performed then 30% of these patients will have recurrence of biliary colics within three months .

Biliary colic in pregnant women with gallstones, is usually managed without hospitalization, which is required only when colics are severe or frequent. Acute cholecystitis remains common in pregnant women with gallstone disease. It has been shown to be second only to acute appendicitis among nongynecological conditions that require admissions and surgery .In this study 12.5% of patients have had AC. Acute pancreatitis in pregnancy is usually biliary in origin (70-90%) and may be the first presentation of asymptomatic gallstones in 1.2-11% of cases . Acute pancreatitis has been more common in second and third trimester of pregnancy. In this study acute biliarypancreatitis was the commonest reason for admission. More than 89% of such patients were in their second and third trimester. Common bile duct stones, have been observed in 10% of pregnant women undergoing cholecystectomy [16] and accounts for 7% of cases of jaundice in pregnancy [17] . In this study only four patients (12.5%) presented with CBD stones.

The management of complications of gallstone disease in pregnancy is usually conservative, but in 10%-35% of patients this form of treatment may prove to be inadequate and further intervention is required in the form of ERCP and or cholecystectomy . In nonpregnant women with CBD stones and selected patients of acute pancreatitis, ERCP is considered safe and effective therapy. Multiple studies have investigated the role of ERCP in pregnancy . Jamidar et al have reported the fetus losses in 29 procedures [23] . The timing of ERCP in pregnancy is controversial, but most literature suggested that second trimester is the safest period . The teratogenic effect of radiation is the main concern in the first trimester, which may lead to fetus loss and abortion, [20],[23] a risk which might be reduced by using lead sheath protection to the gravid uterus [4] . However there is an increased risk of pre-term labor in the third trimester, which might be prevented significantly by using Tycolitic drugs . In the present study ten patients (31 %) needed further intervention in the form of ERCP and or cholecystectomy. This result is quite comparable to other studies . ERCP was done on eight patients in their second and third trimester. All these patients had full term normal delivery. All patients who had ERCP, were protected with lead sheath during the procedure.

Historically, surgery for biliary disease has been avoided during pregnancy for the risk of associated fetus complications . Mc Keilar et al have observed 12% fetus loss after open cholecystectomy in first trimester and high risk pre--trem labor in third trimester . The safest timing for cholecystectomy was found to be the second trimester . The present study supports the safety of LC in pregnant patient when surgery is performed during the second trimester. Five out of ten patients (50%) who required intervention in this study were having recurrent disease during the same pregnancy. This factor has to be considered when managing pregnant women with these complications. In the last decade LC has become the standard treatment for gallstones [24],[25] . Numerous case reports and series of such procedure performed in pregnant women have had a favorable outcome to both mother and fetus

In conclusion, complication of gallstone disease in pregnancy is a common problem. Biliary pancreatitis was the commonest complication encountered in the second and third trimesters during this study. Most of these complications can be managed conservatively and cholecystectomy can be deferred to post delivery. However, ERCP (using brief exposure and lead sheath protection) and/or LC can be safely performed during the second and third trimesters on those who fail to respond or have relapses, with satisfactory outcome for the mother and fetus

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