

MANAGEMENT OF COMPLICATED GALLSTONE DISEASE DURING PREGNANCY

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خلفية الدراسة: هناك خلاف حول المعالجة المثالية للمرارة المحصاة المختلطة وخطورتها على الجنين أثناء فترة الحمل وغالباً ما تكون المعالجة بطريقة محافظة ولكن بعض الحالات تحتاج تنظير الطرق الصفراوية الراجعة مع أو بدون التدخل الجراحي. أهداف الدراسة: تقييم الإستجابات وتوقيت وخطورة تنظير الطرق الصفراوية الراجعة والتدخل الجراحي في حالة الإختلاطات الحادة لحصيات المرارة أثناء فترة الحمل وتأثيرها على الجنين. طرق الدراسة: تمت الدراسة الإسترجاعية لملفات ٣٢ امرأة مصابة بحصيات المرارة مع إختلاطاتها وذلك في مجمع الرياض الطبي في الفترة من مارس ١٩٩٨م-أكتوبر ٢٠٠٢م. شملت الدراسة أعمار المريضات ، التطاهر السريري ، عمر الحمل ، الفحوصات المخبرية ، كيفية تنظير الطرق الصفراوية الراجعة والتدخل الجراحي. النتائج: استجابت ٢٢ من بين ٣٢ امرأة للعلاج المحافظ وأجريت عملية استئصال المرارة بعد الولادة لعشر مريضات ، منهن اثنتان أجري لهما عمل جراحي بسبب مغص مراري معاود والتهاب مرارة حاد. أجري تنظير الطرق الصفراوية لثمان مريضات بسبب يرقان انسداد والتهاب بنكرياس متكرر ، وأجري لإثنتين منهن عملية استئصال المرارة مباشرة بعد التنظير الصفراوي. بقيت كل المريضات بحالة جيدة حتى الولادة. الإستنتاج: يمكن معالجة معظم إختلاطات المرارة المحصاة خلال فترة الحمل بطريقة محافظة وتأجيل الجراحة لما بعد الولادة. يحتاج عدد قليل من المريضات للتنظير الصفراوي ومن ثم التدخل الجراحي أو التدخل الجراحي فقط والذي يمكن أن يجرى بأمان في الثلث الثاني والثالث من الحمل.

Background: 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. **Aim of study:** The aim is to evaluate the management of complicated gallstone disease with particular reference to the indications, timing and risks of ERCP and operative intervention during pregnancy and its effect on fetus outcome. **Patients and methods:** This retrospective study was conducted on 32 pregnant women, who were admitted with complication of cholelithiasis at Riyadh Medical Complex (RMC) through the emergency during the period of March 1998-October 2002. Their files were evaluated for age, presentation, gestational age, hematological, radiological, fetus assessment, management, fetus out come and how ERCP and surgery were performed. **Results:** Among the 32 pregnant women studied, 22 responded satisfactorily to conservative treatment. They had laparoscopic cholecystectomy (LC) after delivery. Ten patients needed further treatment, two were operated for acute cholecystitis (AC) and recurrent biliary colic (BC). Eight patients had ERCP for obstructive jaundice and recurrent pancreatitis following which two had LC cholecystectomy. All patients remained well until delivery. **Conclusion:** Majority of gallstone complications during pregnancy can be managed conservatively. Surgery can be deferred until delivery. Few patients who needed ERCP and/or surgery can be managed safely during second and third trimester (*Saudi Journal of Gastroenterol 2003; 9 (3): 135-8*).

Keywords: Pregnancy, ERCP, laparoscopic cholecystectomy.

Pregnancy is a well-known predisposing factor for

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the formation of cholesterol gallstones. It has been reported in 3.3%-12.2% of pregnant women⁽¹⁻³⁾. Recurrent biliary colic, acute cholecystitis and acute biliary pancreatitis (ABP) are common complications of gallstones and represent the second most common non-gynecological conditions requiring hospitalization and intervention in pregnant woman⁽⁴⁾. Controversy in the management of such problems in gravid

women still exists owing to the high incidence of maternal and fetus complications associated with ERCP and open cholecystectomy in the past^(5,6). The tremendous improvement in both ERCP and laparoscopic techniques, rendered intervention in such patients possible and safe with low maternal and fetus problems notably when performed in the second and the third trimesters with prior consultation with the obstetricians^(7,8). The aim of this study is to report our experience in the management of complicated gallstone disease with particular reference to indications, timing, risks of ERCP and surgery during pregnancy and its effect on fetus outcome.

Patients and methods

The medical records of patients admitted with a diagnosis of complicated cholelithiasis during pregnancy at Riyadh Medical Complex from March 1998-October 2002 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-milliampere/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 CO₂ 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.

Results

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⁽²⁾. 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^(1,9).

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^(10,11).

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^(4,12). 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^(13,14). Acute pancreatitis has been more common in second and third trimester of pregnancy^(4,15). In this study acute biliary pancreatitis 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^(6,18,19). In nonpregnant women with CBD stones and selected patients of acute pancreatitis, ERCP is considered safe and effective therapy^(20,21). Multiple studies have investigated the role of ERCP in pregnancy^(22, 23). 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^(5,24). 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⁽²¹⁾. 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^(4, 19). 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⁽¹⁹⁾. Mc Keilar et al have observed 12% fetus loss after open cholecystectomy in first trimester and high risk pre-term labor in third trimester⁽⁵⁾. The safest timing for cholecystectomy was found to be the second trimester^(5, 22). 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^(7,8,26,27).

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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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