

Acute lithiasis cholangitis in pregnant women: About 3 cases.

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Abstract

Acute lithiasis cholangitis is rare in pregnancy. More difficult than diagnosis is prognosis for both mother and fetus, conditioned by management, which is not well codified, and must be adapted to each case. We reported clinical and paraclinical features of acute cholangitis in pregnant women, as well as management modalities.

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Abstract

Introduction :

The occurrence of acute lithiasis cholangitis is rare during pregnancy. Its incidence doesn't exceed 1/1200 parturient. It represents a medical-surgical emergency that can threaten the vital prognosis of both mother and fetus. Clinical presentation is variable, ranging from simple pain in right hypochondrium to septic shock. Medical imaging may be helpful to make diagnosis, in combination with other clinical and biological findings. The aim of our study was to describe clinical and morphological features of acute cholangitis in pregnant women, as well as management modalities.

Methods:

We report three cases of acute cholangitis complicating cholelithiasis in pregnant women, collected in the department of surgery A in “Charles Nicolle” hospital of Tunis, Tunisia.

Results:

The mean age of the patients was 31.3 ± 7 years. The mean term of pregnancy was 19 weeks. Two patients were in first trimester of pregnancy and one patient in third trimester. Abdominal pain was the main complaint in all patients and was located in right hypochondrium. Fever was noted in only one patient and jaundice in 3 patients. No patient had hyperleukocytosis, CRP was elevated in 2 patients, and liver function tests were disturbed in 3 patients. Abdominal ultrasound was performed in all patients showing a lithiasis, non-distended, and thin-walled gallbladder in all cases. Two patients had a dilated main bile duct. No patient had an abdominal CT scan or biliary MRI. All patients received both vitamin K supplementation and antibiotic therapy intravenously, then operated on. Average time from admission to surgery was one day. A right subcostal approach was performed in all cases. Cholecystectomy and cholangiography were performed in two patients showing dilated bile ducts with presence of at least two stones. A false biliary fistula was found in the third patient allowing direct access after cholecystectomy, extraction of stones, and verification of main biliary duct with choledochoscope, avoiding cholangiography. Postoperative course was simple in all patients. Hospitalization's duration was 14 days for two patients and 12 days for one patient and intensive care unit stay was one day for two patients and two days for one patient. Pregnancy was carried to term for two patients. One patient was lost to follow-up.

Conclusion:

Acute lithiasis cholangitis is a rare situation in pregnant women. Diagnosis is often easy considering typical clinical presentation, but can lead to serious complications for both mother and fetus if diagnosis is delayed. Management is based on antibiotic therapy and bile duct clearance. Endoscopic sphincterotomy may be a good alternative to surgical treatment, allowing bile ducts' clearance, postponing cholecystectomy to postpartum period.

Key words:

Cholelithiasis, acute cholangitis, pregnancy.

Introduction

The occurrence of acute lithiasis cholangitis is rare during pregnancy. Its incidence doesn't exceed 1/1200 parturient. It represents less than 7% of causes of jaundice in pregnant women [1]. Acute cholangitis is a medical-surgical emergency that can threaten the vital prognosis of both mother and fetus, because of multivisceral complications caused by severe sepsis [2]. Clinical presentation is variable, ranging from simple

pain in right hypochondrium to septic shock [3]. Medical imaging may be helpful to make diagnosis, in combination with other clinical and biological findings [4]. The aim of our study was to describe clinical and morphological features of acute cholangitis in pregnant women, as well as management modalities.

Methods

We report three cases of acute cholangitis complicating cholelithiasis in pregnant women, collected in the department of surgery A in “Charles Nicolle” hospital of Tunis, Tunisia.

Results:

1. Clinical findings:

The mean age of patients was 31.3 ± 7 years. All patients were without medical history. Two patients had multiple gestations and one patient was multiparous. The mean term of pregnancy was 19 weeks of amenorrhea. Two patients were in first trimester of pregnancy and one patient in third trimester. Duration of clinical signs was greater than 72 hours in two patients. Abdominal pain was the main complaint in all patients and was located in right hypochondrium. Fever was noted in only one patient. One patient presented nausea and vomiting. All patients were icteric at the time of diagnosis. On abdominal examination: pain on palpation of right hypochondrium was present in all patients. No abdominal mass was palpated in any case.

2. Biological findings:

The mean white blood cell count was 12100 ± 1900 elements per mm³. No patient had hyperleukocytosis. The mean hemoglobin was 12.2 ± 2 g/dL. One patient was anemic at 9.8g/dL. No patient had thrombocytopenia. The mean CRP was 26 g/L. It was elevated in two patients. Mean AST was 84 IU/L and mean ALT was 51 IU/L. Liver cytolysis was noted in all patients. Mean PAL was 233 IU/L. Cholestasis was noted in one patient. Mean total bilirubin level was 49.3 umol/L. Two patients had predominantly conjugated hyperbilirubinemia.

3. Radiological findings:

Abdominal ultrasound was performed in all patients showing a lithiasis gallbladder, non-distended and thin-walled in all cases. Two patients had a dilated main bile duct (mean diameter of main bile duct was 11.6 mm). Lithiasis in the common bile duct was observed in all three cases (Figure 1). Neither hepatic abscess nor liver or pancreas abnormalities were observed in any case.

No patient had an abdominal CT scan or biliary MRI.

4. Obstetrical findings:

All patients had a gynecological examination with obstetric ultrasound on admission, which were normal in all cases.

5. Therapeutic management:

All patients received both vitamin K supplementation and antibiotic therapy intravenously. A combination of Cefotaxime, Metronidazole and Gentamicin was used in all three patients. Average duration of antibiotic therapy was 9 ± 1.7 days. Tocolysis was indicated in only one patient in third trimester of pregnancy.

All patients underwent surgery:

The average time from admission to surgery was one day. The mean term at the time of surgery was 19 SA.

A right subcostal approach performed in all cases.

Cholecystectomy was performed in all three patients. Cholangiography was performed in two patients showing dilated bile ducts with presence of at least two stones (the number of images was limited to two in both cases, fetal protection measures with a lead gown were taken in both cases). A false biliary fistula was found in the third patient allowing direct access, extraction of stones and verification of main biliary duct with choledochoscope, avoiding cholangiography.

A choledocotomy with stone extraction was performed in two patients. Choledochorraphy with Kehr drain was performed in all three patients.

No intraoperative incidents were reported.

6. Postoperative outcomes:

Postoperative course was simple in all three patients. A postoperative cholangiography on the seventh postoperative day was carried out in both cases showing the vacuity of the bile ducts (Figure 2) (Protection of fetus with a lead gown was carried out and the number of images was equal to three). No maternal or fetal complications were noted in postoperative obstetrical ultrasound performed on the three patients. Pregnancy was carried to term for two patients. One patient was lost to follow-up.

Hospitalization's duration was 14 days for two patients and 12 days for one patient.

Intensive care unit stay was one day for two patients and two days for one patient.

Discussion:

Choledocholithiasis is a relatively rare complication in pregnancy, estimated at 1 in 1000 pregnancies [5]. The occurrence of acute cholangitis due to choledocholithiasis is estimated to be less than 1 in 1200 pregnancies [6].

Clinical presentation of acute cholangitis in pregnant women has no real particularities. Nevertheless, it requires management of both the mother and the fetus (obstetric ultrasound and fetal heart rate) because of sepsis' effects. Classic symptomatic triad or "Charcot's triad" consists on pain, fever and jaundice following each other over a period of 8 to 36 hours [5].

Biological presentation of acute cholangitis is variable. It is common to observe a hyperleukocytosis with neutrophils, blood cultures taken during fever or chills are frequently positive, disturbance of hepatic tests is the rule. This disturbance generally persists for several days after first clinical symptoms.

Medical imaging is based on abdominal ultrasound, which is the first-line examination. Two other efficient examinations allow detection of lithiasis of the main biliary tract bile duct: Biliary MRI and echo-endoscopy [4].

CT is another non-invasive method to assess biliary tree and pancreas but its accuracy is limited by its low sensitivity in the diagnosis of stones in main bile duct [7]. CT use is also limited in pregnant women due to radiation-induced teratogenesis [8].

Obstetrical examination is used to detect signs of threatened preterm birth and to check fetal vitality in order to adapt the procedure. This examination should look for gynecological pathologies that may explain the symptomatology [9].

Fetal heart rate recording is a simple and rapid examination that allows assessment of fetal well-being and also allows detection of uterine contractions [9].

Obstetric ultrasound is an important part of obstetric assessment. It is used to search for obstetric anomalies that may explain the clinical symptomatology on one hand and to assess the fetal well-being on the other. Endovaginal ultrasound can measure the length of the cervix and assess the risk of preterm birth [9].

Medical treatment of acute cholangitis classically consists of filling with fluid and electrolyte rebalancing based on crystalloids. Colloids are contraindicated during pregnancy, only 4% or 5% albumin can be used. Intravenous antibiotic therapy targeting gram negative bacteria and anaerobes is obligatory [3]. Preceded by blood cultures, it should be empirical, then adapted to the bacteriological results. The choice of molecules must take into account the teratogenic risk for fetus.

Beta-lactams, cephalosporins, amoxicillin-clavulanic acid can be widely used in combination with an aminoglycoside or metronidazole. These molecules are known to be mildly teratogenic. In order to correct possible hemostasis

disorders, the addition of vitamin K is possible and does not present a fetal risk [10].

Surgical treatment for acute cholangitis stills possible during pregnancy. This surgery presents particularities in terms of anesthesia, approach and choice of surgical modalities. Anesthetic particularities are inherent to the risk of tracheal intubation which is often more difficult with a greater risk of hemorrhage. Good pre-oxygenation with rapid induction sequence are necessary. Drugs' titration is essential as well as monitoring. Actually, there is no proven risk of teratogenicity due to anesthetic products [11].

As far as the approach is concerned, both laparotomy and laparoscopy are possible, and various studies comparing these two approaches in terms of prematurity rate (2.8% vs. 6.7%; $p = 0.27$), or death in utero (2.9% vs. 1.1%; $p = 0.41$), respectively for open and laparoscopic surgery groups, did not show statistically significant differences [12,13].

Although it is generally avoided in pregnancy, per-operative cholangiography is not correlated with a higher risk of preterm delivery or any other fetal complications [14].

Endoscopic sphincterotomy has been shown efficacy and safe in pregnancy for both woman and fetus [15]. It does not seem to increase pregnancy complications' risk and seems to be a good alternative to surgical treatment [16].

Tocolysis, lung maturation with corticosteroids and transfer to a suitable maternity unit should be discussed according to gestational age [17]. H  e stated that no study has demonstrated the benefit of prophylactic tocolysis and that its use remains a matter of choice [17].

Conclusion

Acute lithiasis cholangitis is a rare situation in pregnant women. Diagnosis is often easy considering typical clinical presentation, but can lead to serious complications for both mother and fetus if diagnosis is delayed. Management is based on antibiotic therapy and bile duct clearance. Endoscopic sphincterotomy may be a good alternative to surgical treatment, allowing bile ducts' clearance, postponing cholecystectomy to postpartum period.

Authors contribution:

- Mohamed Far  s Mahjoubi has drafted the work.
- Anis Ben Dhaou has substantively revised the work.
- Yasser Karoui, Bochra Rezg  i, and Nada Essid have made substantial contributions to the literature research.
- Mounir Ben Moussa has made substantial contributions to the conception of the work.

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Figures:

Figure 1: Abdominal ultrasound showing dilatation of main bile duct upstream of a stone.

Figure 2: Postoperative cholangiography showing bile ducts vacuity.



