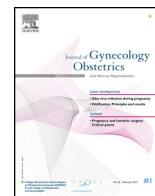




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Original Article

Laparoscopy in the second and third trimesters of pregnancy for abdominal surgical emergencies



La laparoscopie pendant les deuxième et troisième trimestres de grossesse pour le traitement des urgences chirurgicales abdominales

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ABSTRACT

Objective. – To assess complications and outcomes of pregnancies following laparoscopic abdominal surgery during the second and third trimesters of pregnancy.

Material and methods. – Retrospective single-center study of 23 cases of laparoscopic surgery in the second or third trimesters of pregnancy between January 2005 and May 2016.

Results. – The laparoscopies were performed between 15 and 33 weeks of gestation, a mean of 23 weeks + 2 days, with 6 cases in the 3rd trimester. The operations were: 11 cholecystectomies, 6 appendectomies, 1 intestinal occlusion (volvulus on a gastric band), 3 adnexal torsions, 1 ovarian cyst and 1 paratubal cyst with torsion. No secondary laparotomy was required. The postoperative courses were favorable in most cases. However, 3 appendectomies were complicated, one by chorioamnionitis and miscarriage at 20½ weeks of gestation and 2 by right iliac fossa abscesses requiring percutaneous radiological drainage, one of these women delivered a healthy term baby and the other had chorioamnionitis and preterm delivery at 34 weeks, followed by neonatal death.

Conclusion. – Laparoscopy can be safely performed for surgical indications in the second and third trimesters of pregnancy. In case of abdominal symptoms, a timely diagnosis is required to decide whether or not to operate and imaging should not be withheld particularly in case of suspected appendicitis which has a high risk of complications.

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R É S U M É

Objectif. – Évaluer les résultats et les complications des interventions par laparoscopie chez les femmes enceintes pendant les 2^e et 3^e trimestres de grossesse.

Matériel et méthode. – Une étude rétrospective monocentrique de tous les cas de laparoscopie aux deuxième ou troisième trimestres de grossesse pour des urgences abdominales, soit 23 patientes de janvier 2005 à mai 2016.

Résultats. – Les interventions ont eu lieu entre 15 SA et 33 SA, en moyenne 23 SA + 2 jours, avec 6 interventions réalisées au 3^e trimestre. Les interventions étaient 11 cholécystectomies,

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6 appendicectomies, 1 occlusion intestinale par volvulus sur anneau gastrique, 3 torsions d'annexe, 1 kyste ovarien et 1 kyste paratubaire. Aucune laparoconversion n'a été nécessaire. Les suites ont été simples dans la plupart des cas. Toutefois, 3 appendicectomies se sont compliquées, l'une d'une fausse couche tardive à 20½ SA sur chorioamniotite et 2 d'abcès de la fosse iliaque droite qui ont été drainés par voie percutanée, avec dans un cas une issue favorable et dans l'autre une chorioamniotite avec accouchement prématuré à 34 SA et décès néonatal.

Conclusion. – La laparoscopie peut être réalisée pour traiter des urgences chirurgicales aux 2^e et 3^e trimestres de grossesse. En cas de symptômes abdominaux, un diagnostic rapide est nécessaire pour poser ou infirmer une indication opératoire, notamment en cas de suspicion d'appendicite en raison du risque élevé de complications en cas d'intervention inutile ou de délai de prise en charge.

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Introduction

About 1 pregnant woman in 500 requires surgical management for non-obstetric indications, thus any obstetrician may be confronted with such situations [1]. Acute appendicitis and symptomatic gallstone disease are the most frequent surgical emergencies [2]. The highest incidence is appendicitis, which occurs in 0.04–0.2% of all pregnancies; this representing 25% of non-obstetric operations performed during pregnancy. Cholecystitis during pregnancy affects approximately 0.1% of pregnant patients despite 1–3% of pregnant patients having cholelithiasis [3]. The decision to perform surgery is often difficult to make in a pregnant woman, especially in an emergency context, because of concern about the impact on pregnancy outcome and about the conditions of the surgery itself. The laparoscopic approach to acute abdominal syndromes during pregnancy is now widely used based on several recommendations [4]. The advantages of laparoscopy are well established, allowing for early recovery and reductions in postoperative pain, hospital stays and risks of postoperative maternal hypertension and deep venous thrombosis. There are however concerns about the potential risk to the fetus due to trocar insertion, CO₂ insufflation and also regarding the technical ability to obtain proper operative exposure in the presence of a gravid uterus. In particular, there is little data on the effects of laparoscopy during the third trimester. Thus, due to risks for the pregnant uterus and potential difficulties, laparotomy remains the most common option from the end of the second trimester of pregnancy [5]. More recent literature suggests that laparoscopy can be performed without complications during the three trimesters [6–8].

The objective of our study was to evaluate the results of laparoscopic abdominal surgery in the second and third trimesters, the immediate complications and pregnancy outcomes.

Material and methods

We performed a monocentric retrospective observational study of all patients who underwent surgery in the second or third trimester of pregnancy for a non-obstetric abdominal emergency at the Louis Mourier Hospital Center (Colombes, France) from January 2005 to April 2016.

Excluded were interventions before 14 weeks gestation (WG) or ectopic pregnancy. Data were extracted from the medical records, including records of obstetric emergencies, hospitalization reports, surgical records, anesthesia records with surgery and nursing records.

All operations were performed under general anesthesia. Procedures were carried out by gynecologists-obstetricians, digestive surgeons or a mixed team in accordance with current guidelines for surgery and anesthesiology in pregnancy. All insufflation techniques were permitted (open laparoscopy, Veress

needle or direct trocar), provided that the surgeon takes into account the height of the uterus. The position and number of trocars depended on the gestational age and uterine volume. Patients were placed in left lateral decubitus to prevent aortocave compression. The intra-abdominal pressure had to be kept below 15 mmHg and intraoperative monitoring for capnia performed. Antithrombotic prophylaxis with compression stockings was systematic but not the use of preventive anticoagulation. The use of tocolytics pre- or postoperative was decided on a case-by-case basis. Fetal heart rate was checked pre- and postoperatively from viability.

Results

There were 23 laparoscopic procedures in 23 patients. The interventions were: 11 cholecystectomies, 6 appendectomies, 1 intestinal occlusion and 5 adnexal pathologies (3 ovarian torsions, 1 ovarian cyst and 1 paratubal cyst). The mean gestational age at intervention was 23 weeks + 2 days, with 6 procedures performed in the 3rd trimester. No conversion to laparotomy was required. Demographic, obstetric and surgical characteristics are presented in Table 1.

Cholecystectomies

Six pregnancies were in the second trimester and 5 in the beginning of the third trimester. The diagnosis of complications related to gallstones was made in all cases by clinical examination and ultrasound. Five patients were operated on a semi-emergency basis for recurrent biliary colics, 3 for acute cholecystitis and 1 for biliary pancreatitis; 1 had an emergency procedure for acute pain due to choledocholithiasis and 1 was a programmed procedure because of repeated biliary colics. Open laparoscopy was performed for 9 patients and subcostal insufflation with a Veress needle for 2 patients. Only one patient had peroperative cholangiography. Another patient had preoperative echo-endoscopy (EE). The others did not have any exploration of the main bile duct. Three of the 11 patients required tocolysis, 2 with postoperative nifedipine orally and one with intravenous atosiban during the procedure. The time spent in the recovery room was on average 178 minutes; it was greater than 3 hours in one case. All patients resumed colonic transit from the second postoperative day. There were no postoperative digestive complications. Ten patients had an uncomplicated pregnancy. One patient had a shortened cervix at 20 mm before surgery and another patient was hospitalized for contractions 5 days after cholecystectomy and again at 34 weeks. Three patients had gestational diabetes, 1 before surgery and 2 later in pregnancy. There were 8 vaginal deliveries and 2 cesarean sections for non-engagement; one patient did not deliver in the institution. All deliveries resulted in healthy children.

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