

Successful laparoscopic cholecystectomy in the third trimester of pregnancy

Abdul-Wahed N. Meshikbes, MB ChB, FRCS.

ABSTRACT

نستعرض هنا حالة سيدة سعودية في الخامسة و الثلاثين من العمر و التي كانت حاملاً في الثلث الأخير من الحمل حين قدمت بأعراض و علامات سريرية توحى بالتهاب حاد في الحويصلة المرارية. في البداية عولجت تحفظياً إلا أن حالتها الصحية لم تتحسن مما استدعى إلى استئصال طارئ للمرارة بالمنظار الجراحي. تحسنت حالها بعد ذلك دون أي ضرر للمريضة أو للجنين. تناقش هذه المقالة إمكانية إجراء عملية استئصال المرارة بالمنظار الجراحي بسلام في الثلث الأخير من الحمل و كذلك الاحتياطات اللازم اتخاذها للتأكد من سلامة المرأة الحامل و جنينها أثناء العملية.

We report a case of a 35-year-old lady who presented in the third trimester of her pregnancy with signs, symptoms, and radiological features of acute cholecystitis. She was initially treated conservatively, but failed to respond well. Hence, laparoscopic cholecystectomy (LC) was performed successfully with good materno-fetal outcome. This article discusses the feasibility and safety of LC in the third trimester of pregnancy and the special precautions that are needed to guarantee the safety of materno-fetal well-being.

Saudi Med J 2008; Vol. 29 (2): 291-292

From the Department of Surgical Specialties, King Fahad Specialist Hospital, Dammam, Kingdom of Saudi Arabia.

Received 4th March 2007. Accepted 5th August 2007.

Address correspondence and reprint request to: Dr. Abdul-Wahed N. Meshikbes, PO Box 18418, Qatif 31911, Kingdom of Saudi Arabia. Tel. +966 505901984. Fax. +96 (3) 855-1019. E-mail: meshikbes@doctor.com

General surgical problems during pregnancy are rare; the reported incidence is 0.001-0.23%.^{1,2} Gallbladder (GBD) disease (biliary colic and acute cholecystitis) is the second most common surgical emergency in pregnant females after acute appendicitis. Apparently, the hormonal effect of progesterone causes decreased GB contraction and biliary stasis with cholesterol precipitation and gallstone (GS) formation.³

Management of such an emergency during various trimesters of pregnancy poses a dilemma for the treating surgeon. Conservative treatment is the first line of management to avoid endangering the fetal well being. Nevertheless, failure of conservative treatment needs early and prompt surgical intervention to protect the mother and to save the fetus. The fetal loss rate in uncomplicated GS disease is less than 4%, but exceeds 60% in gallstone pancreatitis.⁴ We report a case of acute cholecystitis occurring in the third trimester of pregnancy that failed to respond to conservative medical treatment. The objective of this report is to highlight the fact that minimally invasive surgery is safe and useful in the third trimester of pregnancy and to discuss the safety of emergency LC in that sensitive period.

Case Report. A 35-year-old female was admitted as an emergency with severe colicky right upper quadrant abdominal pain and vomiting of 36 hours duration. The pain increased in severity a few hours prior to admission and became persistent and radiating to her back. She was 32 weeks pregnant with previous history of 2 cesarean sections. There was no recent history of fever or jaundice. Clinically, she was uncomfortable with pain, her pulse was 98 per minute, afebrile, and blood pressure (BP) was normal. There was no clinical evidence of jaundice. The abdomen revealed a gravid uterus of 32 weeks pregnancy with marked rebound tenderness and rigidity in the right upper quadrant and with positive Murphy's sign. Blood investigations revealed a leucocytosis of 23,000/mm³ and a normal liver function test. An abdominal ultrasonography showed a distended thick-walled GB with multiple stones and pericholecystic fluid edema. The common bile duct was of a normal caliber and a viable fetus of 32 weeks gestation was detected. She was put first on conservative therapy, but she failed to improve after 24 hours. Therefore, she was taken for LC. The procedure was conducted after abdominal insufflation at a rate of 1.3 liter per minute through an open technique at a midline point just above the fundal height to a pressure of 11 mm Hg. The trocar placement site is shown in (Figure 1). A distended inflamed GB was first freed from the adherent omentum and colon and was later

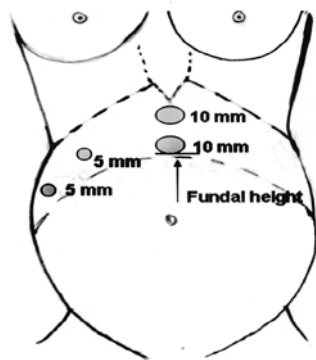


Figure 1 - Trocar insertion sites. A diagram depicting the trocar placement sites. Note the first trocar is placed in the midline just above the highest point of the uterine fundus

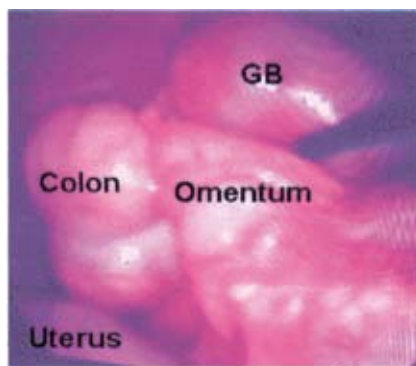


Figure 2 - Laparoscopic view showing the inflamed gallbladder with the omentum and the colonic hepatic flexure adherent to it. GB: gallbladder

aspirated (**Figure 2**). After an initial difficult dissection in the Callot's area, the cystic duct was identified, doubly clipped and cut. The operative time was 50 minutes. Her clinical condition improved dramatically and she was discharged home a day later. An ultrasound scan was carried out which confirmed the fetal wellbeing and assured the mother before discharge. She gave birth to normal full-term viable baby boy after 4 weeks.

Discussion. Pregnancy is a high-risk period in which any pregnancy-related complications or acute surgical emergencies can happen. Treating surgeons are faced with 2 patients: the mother and her fetus and the well being of both needs to be taken into account when considering any surgical intervention during pregnancy. The trend is to avoid surgery if possible in any trimester of pregnancy. If this is inevitable, then surgery can be executed safely in the second trimester, as in the first, surgery is associated with early miscarriage, and the third with premature labor. In the early laparoscopic era, pregnancy was considered as a contraindication to laparoscopy. However, later it was considered a relative

contraindication as confidence and experience improved. Its feasibility in the third trimester was questionable because of the technical difficulties that might be encountered because of the limited space. Laparoscopy is associated with a good maternal and fetal outcome and is therefore recommended in pregnant women.^{5,6} A recent study suggested that surgery during the first or second trimester is not associated with significant preterm labor, fetal loss, or risk of teratogenicity. Surgery during the third trimester is however, associated with preterm labor, but not fetal loss. Some anecdotal case reports of LC in the third trimester have started to appear recently.^{7,8} One fetal death has been reported. Certain modifications have been suggested. These include: the use of Hasson (open) technique to avoid trocar injury to uterus and fetus,⁹ adjusting the location of trocars according to uterine size, minimizing manipulation of the uterus and monitoring maternal and fetal well-being during and after the procedure.¹⁰ Another important recommendation is performance of the procedure by an experienced laparoscopic surgeon to shorten surgical times.¹⁰ Our case highlights the feasibility and safety of LC in the third trimester of pregnancy that should be considered in any pregnant female presenting with acute cholecystitis that fails to resolve conservatively or after repeated episodes of biliary colic during pregnancy.

References

1. Saunders P, Milton PJD. Laparotomy during pregnancy: an assessment of diagnostic accuracy and fetal wastage. *Br Med J* 1973; 3: 165-167.
2. Landers D, Carmona R, Crombleholme W, Lim R. Acute cholecystitis in pregnancy. *Obstet Gynecol* 1987; 69: 131-133.
3. Braverman DZ, Johnson ML, Kern Jr. F. Effects of pregnancy and contraceptive steroids on gallbladder function. *N Engl J Med* 1980; 302: 362-364.
4. Al-Fozan H, Tulandi T. Safety and risks of laparoscopy in pregnancy. *Curr Opin Obstet Gynecol* 2002; 14: 375-379.
5. Muench J, Albrink M, Serafini F, Rosemurgy A, Carey L, Murr MM. Delay in treatment of biliary disease during pregnancy increases morbidity and can be avoided with safe laparoscopic cholecystectomy. *Am Surg* 2001; 67: 539-542.
6. de Perrot M, Jenny A, Morales M, Kohlik M, Morel P. Laparoscopic appendectomy during pregnancy. *Surg Laparosc Endosc Percutan Tech* 2000; 10: 368-371.
7. Visser BC, Glasgow RE, Mulvihill KK, Mulvihill SJ. Safety and timing of nonobstetric abdominal surgery in pregnancy. *Dig Surg* 2001; 18: 409-417.
8. Eichenberg BJ, Vanderlinden J, Miguel C, Bianchi C, Robles A, McLarty R, et al. Laparoscopic cholecystectomy in the third trimester of pregnancy. *Am Surg* 1996; 62: 874-877.
9. Friedman JD, Ramsey PS, Ramin KD, Berry C. Pneumoamion and pregnancy loss after second-trimester laparoscopic surgery. *Obstet Gynecol* 2002; 99: 512-513.
10. Gurbuz AT, Peetz ME. The acute abdomen in the pregnant patient. Is there a role for laparoscopy? *Surg Endosc* 1997; 11: 98-102.