Laparoscopic cholecystectomy in pregnancy

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ABSTRACT

Objectives: Laparoscopic cholecystectomy is established as the treatment of choice for symptomatic gall stones. Many surgeons considered pregnancy to be a contraindication for laparoscopic cholecystectomy. This study aims at evaluation of the use, benefits and risks of laparoscopic cholecystectomy during pregnancy. Settings: The Department of General Surgery in Al-Mouwasat Hospital (250 Beds) in Dammam, Eastern Province, Saudi Arabia. Subjects: Of the 200 patients or more who underwent laparoscopic cholecystectomy by the author in this hospital, between March 1993 and February 1995, 5 were pregnant females. Three of them had acute cholecystitis and two had repeated episodes of biliary colic. Intervention: Laparoscopic cholecystectomy was performed in all five pregnant females during their first or second trimester. Results: Laparoscopic cholecystectomy was successful in all of them. No postoperative maternal or fetal complications were encountered. Conclusion: With the development of experience with this procedure, an increasing number of pregnant patients are being operated upon. We conclude that laparoscopic cholecystectomy is applicable and safe during pregnancy.

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Symptomatic gall stones tend to worsen during pregnancy due to the relaxing effect of pregnancy hormones on the gall bladder and the biliary tract. Conservative treatment is the first option in the management of both acute cholecystitis and symptomatic gall stones in pregnant patients. Surgery is often avoided during pregnancy due to increased incidence of spontaneous abortion and premature labor among these patients. Cholecystectomy has been increasingly called for in cases with failure of conservative management. Laparoscopic cholecystectomy is as safe and effective as open cholecystectomy for symptomatic gall stones in both elective and acute presentations. Because of the marked benefits over open cholecystectomy, laparoscopic cholecystectomy is now considered to be the treatment of choice. Laparoscopic cholecystectomy was considered for some time to be contraindicated in pregnancy. Laparoscopic cholecystectomy has recently been reported as being safe during pregnancy. This study, reports five cases of pregnant patients with both symptomatic gall stones and acute cholecystitis who underwent laparoscopic cholecystectomy safely with no fetal or maternal complications.

Materials and methods. The record of all patients who underwent laparoscopic cholecystectomy by the author between March 1993 and February 1995 in Al-Mouwasat Hospital, Dammam, Saudi Arabia, were reviewed. Out of more than 200 patients, 5 were pregnant females. Data analyzed included age, estimated gestational age, presentation mode, symptoms and preoperative investigations. Operative notes were studied for operative findings and operative time. Postoperative outcome, hospital stay and outcome of pregnancy were also studied. Preoperative pelvic ultrasound was performed in all cases to check the vitality and age of fetus. Laparoscopic cholecystectomy was performed using the standard four puncture technique. Insufflation was obtained by the open method using Hasson cannula. Pneumoperitoneum was maintained at

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intra-abdominal pressure of 12mm Hg. None of the patients had intraoperative cholangiography. All patients received tocolytic drugs in the immediate postoperative period as prophylaxis against spontaneous abortion (in the form of: Ritodrin HCL, 10mg tablets and hydroxyprogesterone caproate, 500mg 1m every other day, for three days).

**Results.** Five pregnant females were operated upon, all presented as an emergency. Three presented with acute upper abdominal pain and were diagnosed as having cholecystitis by ultrasonography. The other two presented with repeated severe biliary colic which required hospital treatment. Conservative treatment was initiated in all cases in the form of intravenous fluids, antispasmodics and antibiotics. Treatment continued for 48-72 hours after which cholecystectomy was believed necessary. The patients' age varied between 24 to 36 years old (average age was 29.6). Gestational ages varied between 6 and 15 weeks (average age was 9 weeks). Preoperative tests including liver function tests and pelvic ultrasonography were within normal limits. The average operative time was 69 minutes (range between 40 and 120 minutes). The diagnosis of acute cholecystitis was confirmed in three patients in the form of empyema in two, and patchy gangrene with marked adhesions in the third. Laparoscopic cholecystectomy was completed successfully and all three patients had suction drains left in the subhepatic space for 36-48 hours (average 40 hours), with an average amount of drainage fluid, 213.3 ml (range between 50 and 500 ml). The two patients with chronic calculus cholecystitis had no drains left at the end of their procedure. There was no postoperative maternal or fetal mortality or morbidity. None of the patients had spontaneous abortion or premature delivery. The average postoperative hospital stay was 62.4 hours (range between 48 and 72 hours). All patients delivered healthy full-term infants.

**Discussion.** Management of symptomatic gall stones during pregnancy is initially conservative. Cholecystectomy is indicated for complicated or persistent forms when adequate treatment fails to relieve the symptoms. The incidence of symptomatic gall stone disease during pregnancy is estimated to be 0.05% and up to 40% of them require surgery. Operating on pregnant patients increases the risk of spontaneous abortion, premature labor or fetal malformations. The risk of spontaneous abortion was estimated to be 12%, 5/6% and 0% in the first, second and third trimesters respectively? Laparoscopic cholecystectomy is well established to be the treatment of choice for symptomatic gall stones due to its benefit to the patients which includes less postoperative pain, shorter hospitalization and convalescence time and better cosmetic outcome. Pregnancy was considered to be a relative contraindication to laparoscopic cholecystectomy, but with growth of experience and confidence of the interested and suitably trained surgeons, more successful cases have been reported. However, there is little known about the effects of carbon dioxide insufflation, increased intra-abdominal pressure and the posture of the patient on the fetus. The technique of laparoscopic cholecystectomy was altered when operating on pregnant females, by the use of the open technique and Hasson cannula to establish pneumoperitoneum (to avoid injury to the gravid uterus by the Verres needle) and to reduce the intra-abdominal pressure to less than 12mm Hg. The use of tocolytic drugs in the perioperative period is recommended in all cases to reduce the danger of spontaneous abortion. The growth of the uterus above the level of the umbilicus in the third trimester would make the procedure difficult and hazardous and is better avoided.

**Conclusion.** This study shows that when indicated, laparoscopic cholecystectomy may be safely performed during the first and second trimesters, as it provides many advantages when compared with open cholecystectomy, provided it is performed by an experienced team.

**References**