Innovative Technique for Cholecystectomy in Twin Pregnancy Complicated with Biliary Pancreatitis

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ABSTRACT

Bilio-pancreatic disorders manifesting during pregnancy are relatively rare and the management of these conditions remains controversial. Although perioperative problems with fetal loss have been reported, recent publications have advocated an early surgical approach. We present a case of twin pregnancy with bilary pancreatitis associated with bilateral pleural effusion. Epidural anesthesia was given. A laparoscopic clip applicator was used to clip the cystic artery and cystic duct instead of conventional suture ligation thus reducing the operative time, retraction of uterus and the associated stress. This technique is recommended as an alternate means, of duct and artery ligation when the operative time has to be reduced with narrow field of vision.

Key words Bilio-pancreatic disorders, Laparoscopic clip applicator, Twin pregnancy, Cholecystectomy.

INTRODUCTION:

While 2-4% of pregnant women will be found to have gallstones during obstetric ultrasound, symptomatic bilio-pancreatic gallstone disease during pregnancy occurs in only 5 to 10 females in 10,000 gestations (0.05-0.1%).¹ Open or laparoscopic cholecystectomy is recommended as a safe procedure during pregnancy.² Biliary pancreatic disease is one of the rare and serious complications of gall stones especially if it is associated with pregnancy. Early surgery is recommended for such cases. We present a new surgical approach in such situation.

CASE REPORT:

A patient presented to emergency room with severe abdominal pain during 21-22 weeks of gestation with twin pregnancy. Pain was aggravated on sitting up and bending forward. This was her second episode of pain in the same pregnancy. She was already diagnosed to have cholelithiasis at 17 weeks and was managed conservatively for her biliary colic. Routine investigations revealed a leukocyte count of 12100/mm³. Liver function tests were within normal limits. Serum lipase was 421 u/l(normal-less than 38 u/l). Patient also became febrile during the course of her hospital stay. Ultrasound showed bulky

Correspondence: Dr. Shalin Lyall Department of General surgery Pondicherry Institute of Medical Sciences Ganapathychettykulam, Kalapet Pondicherry-605014. India Email- shalin93@gmail.com pancreas with dichorionic, diamniotic twins with approximate gestation of 21-22 weeks. It also showed bilateral pleural effusion. A diagnosis of biliary pancreatitis was made. She underwent ERCP and sphincterotomy preoperatively. Due to recurrent pain in the same pregnancy, worsening clinical condition, an open cholecystectomy was planned.

Open cholecystectomy with the use of laparoscopic clip applicator, was done to save time and to avoid undue retraction as in conventional open cholecystectomy, which could have compromised the fetus (FIg I). Epidural anesthesia was used due to respiratory complications of acute pancreatitis. Pre-operative, intra-operative and post-operative fetal monitoring was performed. Prophylactic tocolysis were not given. Patient had an uneventful recovery which was confirmed by post operative ultrasound for fetal well being (Fig II). She was discharged on the fourth post operative day.

DISCUSSION:

Pregnancy predisposes women to gallbladder disease due to hormonal changes causing an increase in gallbladder volume during fasting, an increased residual volume after emptying, an increased saturation of bile with cholesterol, and a decrease in the circulating bile salt pool. These factors result in asymptomatic cholelithiasis in 4.5% of pregnant women, symptomatic cholelithiasis in 0.05%; almost 40% of whom require surgery. Gallstone pancreatitis complicating cholelithiasis has been linked to a 15% maternal mortality rate and a 60% rate of fetal demise.



Fig I: Open cholecystectomy in twin pregnancy being performed.



Fig II: Completed cholecystectomy in almost term size uterus.

Symptomatic biliary disease which responds initially to medical management carries a relapse rate of 92% for patients presenting in the first trimester, 64% in patients who present in the second trimester, and 44% in patients who present in the third trimester. The high incidence of recurrence of biliary disease in patients managed conservatively and the potential complications of prolonged medical management has strengthened the recommendation of surgery as initial treatment of hepatobiliary disease in the second trimester. Early cholecystectomy is beneficial compared to delaying surgery beyond 2 weeks.³ However, patients who have had sphincterotomy are still at risk of developing biliary complications.⁴ The risk of gallstone pancreatitis recurrence after sphincterotomy is 0–2%.⁵

Decreasing the risks of surgery to mother and fetus are critical if surgery during pregnancy is chosen as the method of definitive treatment. Scheduling surgery during the second trimester may lead to a preferred surgical outcome, and has reported to result in a significantly lower abortion and preterm birth rate than surgery in the first or third trimesters. Studies have shown that patients with sphincterotomy within 30 days of the index admission required cholecystectomy, likely from cholecystitis, but possibly from recurrent gallstone pancreatitis.⁶ Cholecystectomy is required in 41% of pregnant patients who fail on initial medical management.⁷ Our patient was thus planned for open cholecystectomy due to recurrent pain, worsening clinical condition, high leucocyte count, high amylase and lipase.

Physiologically, the uterus during the second trimester in singleton pregnancy is of adequate size as not to obscure the operative field, as would occur with a third trimester fetus. Our case presented here added challenge due to patient's twin pregnancy and the uterine size, which was of term size. The second trimester miscarriage rate is only 5.6% compared to 12% in the first trimester, while preterm delivery rates during the third trimester are as high as 40%.⁸ There is no evidence to support the use of prophylactic tocolysis.⁹ We emphasize the use of this innovative technique especially in a resource poor setting where sophisticated instruments like harmonic scalpel or Ligasure are not available.

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