ISSN: 3049-7361

Case Report

Journal of Clinical Surgery and Anesthesia

Laparoscopic Common Bile Duct Exploration in Pregnant Female: A Case Report

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Received: July 05, 2024; **Accepted:** July 18, 2024; **Published:** July 24, 2024

ABSTRACT

Background: Non-obstetric conditions requiring surgery are rare and include appendicitis, cholecystitis and complicated adnexal mass. Laparoscopy in pregnant females has its own merits and demerits and has to be performed after weighing the risks and outcomes.

Clinical Description: A female of 30 years of age, G2P1 with 21 weeks period of gestation presented with abdominal pain and jaundice for 6 weeks.

Management: Ultrasonogram was performed to show intrahepatic biliary dilation with gall stones and common bile duct stones. She underwent laparoscopic common bile duct exploration with laparoscopic cholecystectomy.

Conclusion: Surgical management of pregnant females poses a challenge to the surgeons. Laparoscopic management should be preferred over open surgeries as they have a relatively lesser duration of hospital stay and faster recovery postoperatively.

Keywords: Pregnancy, Common Bile Duct Stones, Gall Stones, Laparoscopy

Introduction

Though non-obstetric conditions requiring surgery are rare and seen in only 1-2 per 1000 pregnancies, it is crucial for surgeons to be alert to such a situation [1]. Among such conditions, the most common causes include appendicitis, cholecystitis, and complicated adnexal mass. Recently, laparoscopy in pregnancy has been considered a safe alternative to conventional open surgery [2]. However, it is of prime importance to know the drawbacks. A few of them include an injury to the uterus during port placement and fetal distress caused by high intrabdominal pressure. Hence, it is a challenge to perform laparoscopy in pregnant females. Here we describe a case of impacted common bile duct calculi in a pregnant female, managed laparoscopically.

Clinical Description

A young pregnant woman in her thirties presented to our outpatient department with complaints of pain abdomen for 6 weeks, which had aggravated in the past 1 week. She was G2P1 with 21 weeks of gestation. She had no complaints of bleeding through her vagina, nor any history of trauma. Her previous scans were normal with no complications to the fetus. The abdominal pain was on the right side just below the costal margins. The patient had multiple episodes of vomiting, bilious, non-projectile, and moderate in amount. She also gives a history of yellowish skin discoloration for the same duration.

The uterus was palpable up to the umbilicus on clinical examination, with tenderness just below the right costal margin. There was no local rise in temperature, and bowel sounds with fetal heart rate were recorded in auscultation.

Management

An ultrasonogram of the abdomen and pelvis was advised as a non-invasive test. It revealed extrahepatic and intrahepatic biliary radical dilation with the common hepatic duct measuring 12mm. The gall bladder was distended with a 3mm wall thickness and had a mobile intraluminal calculus measuring 4mm in the fundus

Citation: Vinay HG, Naveen N, Ram Prashanth MP. Laparoscopic Common Bile Duct Exploration in Pregnant Female: A Case Report. J Clin Surg Anesth. 2024. 2(3): 1-3. DOI: doi.org/10.61440/JCSA.2024.v2.13

of the gall bladder and another one in the proximal common bile duct of 6mm. It also showed a single uterine live gestation of 19-20 weeks.

Baseline parameters were investigated and showed increased conjugated bilirubin and serum alkaline phosphatase enzyme. On serial monitoring of liver function tests, direct bilirubin showed an increasing trend from 2.14mg/dl to 4.40mg/dl. The patient was thus, prepared for laparoscopic CBD exploration with CBD stenting and cholecystectomy.

The patient was shifted to the operating room after 2 days and induced under general anesthesia. 4 ports were placed at the umbilicus, epigastrium, right para median, and right flank. The pneumo-peritoneum was maintained at 10 mm of Hg. Intraoperatively, the gall bladder was distended with an edematous wall and contained multiple calculi. CBD was dilated. CBD was opened just distal to the cystic duct insertion.

Intra-operative Chol angioscopy was done which revealed distal CBD-impacted calculi. Guide wire was passed across and the stone was retrieved with a basket. The stent was deployed and primary closure of the CBD was done using polyglactin 3-0 sutures.

Discussion

With the dawn of laparoscopy in the field of surgery, it was initially met with a lot of backslashes. It was considered counterproductive by a few surgeons who refused to incorporate it into their practice. This was attributed to the fact that it had an increasing trend of newer complications which included bile duct injuries, which were relatively less common in open surgeries [3]. However, now it is considered the gold standard for the treatment of benign biliary disease.

With multiple advancements in the field of laparoscopy every day, the application of the same in pregnant females was made. Several societies like the British Society for Gynecological Endoscopy (BSGE), the Society of American Gastrointestinal and Endoscopic Surgeons (SAGES), the Society of Obstetricians and Gynecologists of Canada (SOCG), published their guidelines for laparoscopy in pregnancy. The consensus states that the insufflation pressure of 12mm hg is considered optimum. Additionally, all pregnant females should undergo a screening for the risk of thromboembolism [3].

Concurrent management of CBD stones and gallbladder is controversial to date. Historically, ERCP preoperatively followed by LCwas the management of choice for CBD stone with GB stone. However, this mode of treatment had drawbacks as the CBD stones often escaped the eye of the radiologist making the diagnosis challenging. Recent studies have shown that laparoscopic treatment of CBD stones has equivalent results to ERCP. Laparoscopic drainage via T-tube has fewer complications and shorter hospital stays compared to EBD [4].

Here, we have performed laparoscopic CBD exploration before ERCP due to various reasons. Among many, life-threatening complications like bleeding, pancreatitis and duodenal perforation along with the high chance of the procedure turning out to be normal was debated [5]. Though the use of ERCP in pregnancy is controversial with limited data, few studies show that it is associated with increased preterm Labour, preeclampsia and intrauterine growth restriction [6,7].

Therefore, a “single-stage” laparoscopic common bile duct exploration (LCBDE) with laparoscopic cholecystectomy was attempted hoping to prevent injury to the sphincter of Oddi and decrease the hospital stay, and expenses of the patient. The main drawbacks of such a procedure included longer surgery duration and a high level of expertise requirement.

Multiple studies were done to compare the outcomes of LCBDE with ERCP and concluded that there is no potential difference [8,9]. However, the management of similar situations requiring surgery in pregnancy is different. Studies have showed that LCBDE has better outcomes compared to ERCP and other modes of management.

Conclusion

Pregnancy is a unique condition where concerns about potential harm to the fetus often create confusion in decision-making. With the significant advancements in laparoscopy and improved surgical training, more non-obstetric surgical conditions should be managed endoscopically during pregnancy.

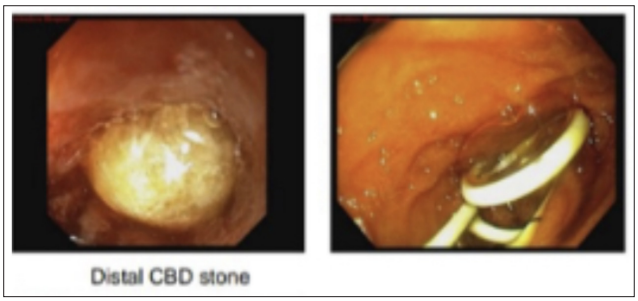

Figure 1: Distal CBD Stone

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