

LAPAROSCOPIC MANAGEMENT OF PRIMARY CBD STONE AFTER CHOLECYSTECTOMY

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Abstract: Choledocholithiasis usually results from stones originating in the gallbladder and migrating through the cystic duct. Primary bile duct stones, on the other hand, form within the bile ducts and usually are of the brown pigment variety. Unlike secondary stones, primary stones are associated with biliary stasis and bacteria. Primary CBD stone formation after cholecystectomy is not reported in literature with laparoscopic management of the CBD stones. Here we report a case of a 50 year old female who was diagnosed as a case of choledocholithiasis for which LCBDE was done.

Keywords: Primary CBD stone, choledocholithiasis, LCBDE, Laparoscopic management.

1. INTRODUCTION

Minimally invasive surgery has great advantages over its conventional counterpart in the treatment of various pathologies. It is the gold standard for such procedures as cholecystectomy, esophageal hiatus surgery, and appendectomy. The benefits of decreased postoperative pain, length of stay, and improved aesthetic outcome have been solidly proven.¹⁻³

Laparoscopic cholecystectomy was introduced in 1987 and promptly become the gold standard for surgical treatment of gallstone disease. It was only the matter of time before going to the next level with minimally invasive bile duct surgery: laparoscopic common bile duct exploration (LCBDE). The first reports of outcomes of this technique appeared in 1991. Since then, multiple series have shown that it is an effective procedure with low morbidity and mortality rates.⁴⁻⁷ The technological development and surgical team's experience have lead to great results in laparoscopic surgery of the common bile duct. Primary CBD stone formation after cholecystectomy is not reported in literature with laparoscopic management of the CBD stones.

Here we report a case of a 50 year old female who was admitted with complaint of pain in right hypochondrium and past history of open cholecystectomy 20 years ago. After investigation she was diagnosed as a case of choledocholithiasis for which LCBDE was done.

1.1 Case History

A 45 year old female was brought for complaint of pain in epigastric region, radiating to back since last 3 years & occasional episodes of vomiting which contained food particles and was greenish in colour. Patient had h/o open cholecystectomy 25 years back. On examination vitals were stable there was a right upper paramedian incision scar(cholecystectomy 25 year back), with mild tenderness in upper abdomen. There was no pallor or icterus.

USG abdomen was done which revealed absent gall bladder (h/o cholecystectomy) with dilated CBD around 10mm having multiple calculi in its lumen. MRCP was done which showed dilated IHBR and CBD with multiple calculi (4mm, 9mm, 11mm in its proximal part and 7mm, 10 mm in distal part). Serum bilirubin was 1.5 mg/dl and alkaline phosphatase was 565 u/l.

Patient was planned for LCBDE and laparoscopic exploration was done (Figure 1) with 5 port placement. Intraoperative finding – dense adhesions of omentum, stomach and small bowel with the anterior abdominal wall at previous surgery

scar site (Figure 2). After careful dissection adhesions were removed after which CBD was visualised. The supra duodenal CBD appeared grossly dilated with hard stony feeling. The part of CBD which contained the stone was visualized by retracting the duodenum away. A small vertical slit was made in the CBD over the stone (transcholedochal) and multiple stone were extracted, one stone had a look of stag horn calculi (Figure 3). The proximal and distal clearance was checked using ureteroscope. The CBD was closed with 3-0 vicryl after placing a T- tube (Figure 4). Post-op period was uneventful and T-Tube was removed following T-tube cholangiogram after 2 weeks. Patient was in follow up for 3 months in OPD.

2. DISCUSSION

The clinical clues of common bile duct (CBD) stones were recognized during the Roman Empire by Soranus of Ephesus, who described jaundice, itching, dark urine, and acholic stools. Not all common bile duct stones render such a classic clinical scenario, but they still carry risk if left unidentified and untreated. Common bile duct stones have been noted in 10-15% of patients with cholelithiasis, and this incidence increases with age to over 80% in those who are over 90 years old⁸. Choledocholithiasis usually results from stones originating in the gallbladder and migrating through the cystic duct. These secondary bile duct stones are cholesterol stones in 75% and black pigment stones in 25% of patients. Cholesterol stones are formed in the presence of cholesterol saturation, biliary stasis, and nucleating factors. Behavioural factors associated with cholesterol gallstones include nutrition, obesity, weight loss, and physical activity. Biologic factors linked to gallstones include increasing age, female sex and parity, serum lipid levels, and the Native American, Chilean, and Hispanic race⁹. The formation of black pigment stones is associated with hemolytic disorders, cirrhosis, ileal resection, prolonged fasting, and total parenteral nutrition.⁸

Primary bile duct stones, on the other hand, form within the bile ducts and usually are of the brown pigment variety. These tend to be lower in cholesterol content and higher in bilirubin content as compared with secondary stones. Unlike secondary stones, primary stones are associated with biliary stasis and bacteria.¹⁰ Common bile duct stones may be silent and are often discovered incidentally. In these patients, biliary obstruction is transient, and laboratory tests may be normal. Common duct stones are also defined as retained if they are discovered within 2 years of cholecystectomy, or recurrent if they are detected more than 2 years after cholecystectomy. In 1890, Ludwig Courvoisier was the first to perform a choledochotomy and remove a CBD stone. One hundred years later, LC was in its infancy.

Laparoscopic common bile duct exploration through the cystic duct or with formal choledochotomy allows the stones to be retrieved during the same procedure. The transductal approach (via the CBD) is indicated for stones greater than 8 mm in size, and for stones proximal to the insertion of the cystic duct. The transductal technique should not be performed in a CBD less than 10 mm in diameter, as this may lead to postoperative stricture.

3. CONCLUSION

Laparoscopic surgery is now the gold standard approach for cholelithiasis and choledocholithiasis - secondary and primary both as demonstrated in our case.



Figure 1. Laparoscope placed with pneumoperitoneum created showing the previous surgery scar pulled down due to adhesions with the viscera

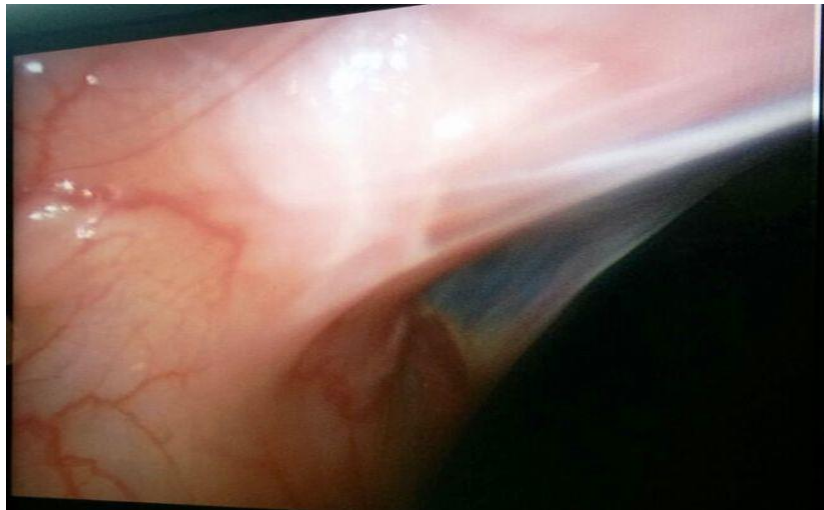


Figure 2. Laparoscopic view showing adhesions of abdominal wall with the viscera

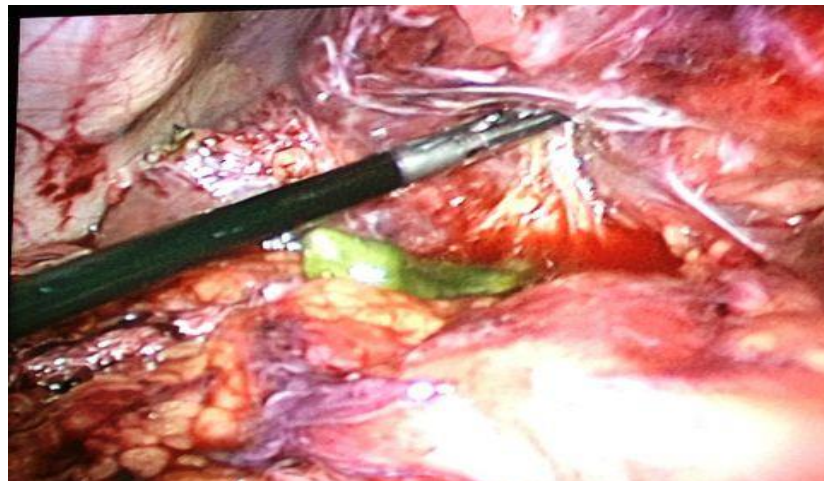


Figure 3. One of the CBD stone delivered outside the CBD



Figure 4. Post op day 3 photo showing T-Tube in situ

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