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LAPAROSCOPIC COMMON BILE DUCT EXPLORATION WITH T-TUBE – A CASE SERIES

General Surgery

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ABSTRACT

Laparoscopic CBD exploration for choledocolithiasis is a minimally invasive and cost effective method of treatment.Laparoscopic cbd exploration procedures are a way better in comparison to open procedures in clinical outcomes[1].In this case series we document our experience in laparoscopic CBD exploration with T-Tube placement in five patients in saveetha medical college.There was no major complications post operatively like bile leak or pancreatitis.There was no cases of retained stone.The mean hospital stay was 3 days.Lap CBD exploration reduces the post op complications , mortality and morbidity for CBD stones.

KEYWORDS

CBD(common bile duct), LFT(liver function test),LCBDE(Laparoscopic common bile duct exploration), MRCP (Magnetic resonance cholangiopancreatography),ERCP(Endoscopic retrograde cholangiopancreatography) USG(Ultrasonogram),LC (Laparoscopic cholecystectomy)

In the olden days when open cholecystectomy was performed,open CBD exploration was the treatment of choice for choledocolithiasis.In the new era where lap cholecystectomy was done for cholelithiasis[1]. The treatment options for choledocolithiasis has changed from an open procedure to a minimally invasive procedure. Howeve rbetter surgical skills are needed for laparoscopic CBD explorartion and T-TUBE placement[4].

The aim and objective of the study is to asses the outcome of Laparoscopic CBD exploration and T-Tube placement Here we share our experience with lap CBD exploration with T-Tube placement.

MATERIALS AND METHODOLOGY

The study period is from jan 2019 to march 2019 in saveetha medical college.This study involves 5 patients who were diagnosed as a case of choledocolithiasis

Inclusion criteria

1. Patients with elevated LFT
2. USG shows CBD dialatation>7mm
3. MRCP showing cbd dilatation and cbd stones.

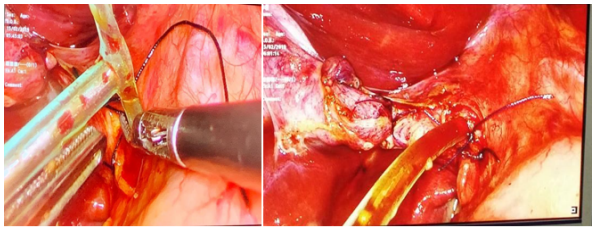
Exclusion criteria

1. CBD not dilated

The patients who were confirmed with cholelithiasis and choledocolithiasis were subjected to clinical and laboratory work up and patients were planned for surgery.

Laparoscopic CBD exploration was done using the standard four port method. After dissection around Calot's triangle and clipping of the cystic artery and duct, choledochotomy was made in the supraduodenal part using harmonic scalpel or unipolar cautery hook. Stones were expressed out by gentle milking of the common duct and by using a 5 french rigidureteroscope and was basketed out followed by flushing of the entire ductal system with copious amounts of normal saline. Ductal clearance was confirmed using a 5 fr ureteroscope inserted through the epigastric port. After ensuring CBD clearance, T-tube was then inserted into the CBD through the choledochotomy site. Choledochotomy was closed using poly glactin suture (3-0 vicryl) followed by completion of cholecystectomy and drain placement.

All patients were given intravenous antibiotics on pod 0 and and orals were started on the same day and was shifted to oral medications on the post operative day 1.Abdomen drain was removed on post op day 1 when the drain was less than 10ml.The patients were discharged on pod 3 with the T-Tube.After two weeks a T-Tube cholangiogram was done on day 12 , following which T-Tube was blocked intermittently for 24 hours and the T-Tube was removed after 14 days.



DISCUSSION

Pre-operative ERCP followed by LC is the most commonly used treatment modality for management of choledocholithiasis[2]. ERCP carries a high rate of morbidity and mortality mostly due to post-procedure pancreatitis, duodenal perforation and bleeding[2]. It also causes injury to sphincter of oddi which should be avoided in younger patients.

LCBDE with T-Tube offers a one stage treatment with similar or better stone clearance rate and with a shorter hospital stay. It also preserves function of sphincter of oddi and hence prevents reflux related complications. LCBDE has been found to be safe even in elderly Population[2]. Despite the simplicity and success of LCBDE, many surgeons across the globe are still not comfortable or confident regarding the procedure.

The top reasons for not performing LCBDE were: Availability of a reliable ERCP, lack of equipment, and lack of skill performing LCBDE. They concluded that many surgeons are uncomfortable performing LCBDE, and advanced training may be needed. There is a risk of surgeons losing the art, which may still be required in cases of unavailability or failure of ERCP.

Stone clearance during LCBDE can be confirmed by IOC (intra operative cholangiogram) or choledochoscopy. Intra-operative choledochoscopy is better than IOC for determining ductal clearance after TD LCBDE and is less cumbersome and less time-consuming.[4] Choledochotomy after LCBDE is conventionally managed by T-tube closure. Primary closure of choledochotomy is a safe and effective

option with less operative time and hospital stay[5]. Biliary stentalso reduces cost and hospital stay as compared toT-tube. There is lack of randomized trial comparingprimary closure with biliary stent[5].

The T-tube drainage helps to prevent bile stasis, decompress the biliary tree, and minimize risk of bile leakage. T-tube has also provided an easy percutaneous access for cholangiography and extraction of retained stones[5].

The indications of T-Tube are[4]

1. To prevent bile leak from the dochotomy site at the lower end of the CBD[4]
2. Lrge CBD more than 2 cm with multiple primary stones.[4]

The T-Tube is also useful for removing retrained calculi, by flushing or by burhennes technique using baskets for stone retrieval.Following this the T-Tube is kept insitu for 2 weeks and then a T-Tube cholangiogram is doine and then it is removed.If stones are detected they can be removed by endoscopic stone removal or through the mature T-Tube tract.[4]

In patients having cholangitis, it is advisable to go for drainage of biliary obstruction by ERCP followed by LC. LCBDE can be offered to all other patients with CBD stones if expertise is available[3]. If laparoscopic exploration fails, it is prudent to convert it to open bile duct exploration and removal of ductal stones.

RESULTS

1. Lap CBD exploration along with T-Tube placement was successful in all patients with no conversion rates.
2. The operating time was reduced the average operation time was around 140 to 160 minutes
3. None of the patients had residual stones in T-Tube cholangiogram
4. There was no post operative biliary leak or any signs of peritonitis.

CONCLUSION

Keeping in view the reduced morbidity, better stone clearance, lesser hospital stay, lesser number of procedures per patient, reduced time taken for surgery and reduced rates of complications, it can be concluded that a single staged laparoscopic common bile duct (CBD) exploration and T-Tube placement with cholecystectomy is a good alternative to conventional Endoscopic Retrograde Cholangiopancreatography followed by laparoscopic cholecystectomy for the management of choledocholithiasis.

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