

An experience of laparoscopic common bile duct exploration

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Introduction

A previously healthy 57 year old female presented with right hypochondrial pain, fever and jaundice of 3 days duration. Examination findings were suggestive of acute cholangitis which was confirmed by ultrasound abdomen, which showed multiple gall bladder calculi with dilatation of both intra hepatic and common bile ducts (CBD).

Endoscopic retrograde cholangiopancreatography(ERCP) showed a large CBD calculus, but endoscopic extraction failed.

Laparoscopic CBD exploration(LCBDE) was done under general anaesthesia. Port placements were done according to the standard configuration of laparoscopic cholecystectomy with a 5th port in the left hypochondrium.

The supra duodenal CBD appeared grossly dilated with a hard stone just below the Calot's triangle.

Exploration of the CBD started after completion of the cholecystectomy. The part of the CBD which contained the stone was visualized by retracting the duodenum away. A small vertical slit was made in the CBD over the stone which was then extracted (transcholedochal approach [1]). The CBD was closed with 3/0 polyglactin over a T tube.

An intraoperative cholangiogram was not performed since ERCP clearly showed a single stone.

We do not have facilities for choledochoscopy.

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She was discharged on day 5. T tube cholangiogram was done on day 10 was normal.

Discussion

CBD calculi are present in 10% of the patients[2] and can be approached in several ways including ERCP and open or laparoscopic CBD exploration. Recently described methods including lithotripsy and dissolving solutions need more clinical evaluation[1].

The widely practiced approach to CBD calculi is the two staged procedure which includes cholecystectomy with pre or post op ERCP. In this era of laparoscopy, CBD stones can be managed in a single staged manner with LCBDE[3].

There are no cases of laparoscopic CBD exploration reported in Sri Lanka.

ERCP has a success rate of 87-97% but about 25% of the



Figure 1. Extraction of the stone



Figure 2. T tube cholangiogram showing free bile flow

patients need two or more ERCP treatments[1]. The drawbacks of ERCP include the need for an experienced endoscopist, the need for possible >1 ERCP and the complications. The mortality from ERCP ranges from 0.2-2.3% which is mainly accounted for acute pancreatitis [4].

On the other hand the mortality of LCBDE is <1% [1]. Its success rate is 85-95% which is comparable to ERCP [1]. The procedure would be always a single stage one because one can convert it to open exploration at any time [4]. The main draw back is the need for laparoscopic expertise [1]

The first described LCBDE was in 1989 by Petelin from the USA [2]. LCBDE is now a commonly practiced approach in regional [1,4] and world wide [2] laparoscopy centers.

A successful LCBDE depends on surgical expertise, availability of equipment, biliary anatomy, and the

number and size of CBD stones.

There are two approaches in LCBDE namely transcystic and trancholedochal [1] and the former gives a better outcome [4].

Meta analyses have failed to show any benefits of having a T a tube over a primary closure[5]. The disadvantages of T tube include delayed recovery, risk of tube displacement, risk of infection and rarely, fracture of a tube fragment and retention in the CBD [6]

Conclusion

LCBDE is a safe and effective way of managing CBD stones in expert hands.

References

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Key learning points

- Approximately 10 percent of patients with gall stones will have common bile duct stones
- Laparoscopic cholecystectomy and common bile duct exploration (LCBDE) is a single stage option for surgical treatment of gall stones in the common bile duct
- The reported incidence of post-procedure acute pancreatitis is less for LCBDE compared with endoscopic retrograde cholangio-pancreatography