

Experience with common bile duct exploration at Lumbini Medical College

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ABSTRACT

Common bile duct stones represent a significant danger to patients, because they can lead to biliary colic, obstructive jaundice, cholangitis, or pancreatitis. Common bile duct stones either migrate from the gallbladder or form primarily within the bile ducts themselves. Primary stones are more common in South Asia and are usually sequelae of biliary infection and stasis. In the United States and other Western countries, common bile duct stones are predominantly secondary stones, having formed in the gallbladder. In patients who have gallstones, and in whom a cholecystectomy is considered, common bile duct stones can be found preoperatively, intraoperatively, or postoperatively. Ten percent to 15% of patients undergoing a cholecystectomy will be found to have choledocholithiasis at some point during their treatment. We present our case of 16 patients of common bile duct stones with or without cholelithiasis from April 2011 to March 2012. To review the treatment and outcome of patients with common bile duct (CBD) stones who underwent cholecystectomy with open common bile exploration (CBDE). We analysed the fact that cholecystectomy with common bile duct exploration still holds as a good modality of treatment where ERCP (Endoscopic Retrograde cholangio pancreaticogram) is not available. All 16 persons in age group of 20-65 years, all females with body weight in the range of 45-60 kgs undergoing inpatient common bile duct exploration during April 2011- March 2012 were included. Common bile duct exploration was successful in all patients. Mean operating time was 120+/-40 minutes and length of hospital stay was 13+/- 3 days. 3 complications (18.75%) were recorded, 2 cases of retained stone (12.5%) who underwent choledochoduodenostomy. In 16 patients undergoing common bile duct exploration, CBD stones were discovered with flexible choledochoscope and intraoperative cholangiography. None of the Gallbladder specimen revealed any feature of malignancy in final histopathological report. All patients are doing fine till date. Open common bile duct exploration can still be a gold standard technique in set up where ERCP is not available. The results of common bile duct exploration are good with less complications in experienced hands.

Keywords: Common bile duct, cholecystectomy, acute pancreatitis, cholecystitis, ERCP.

INTRODUCTION

Common bile duct (CBD) exploration for stones is required in approximately 12 per cent of patients who undergo cholecystectomy.¹⁻⁶ The foundation of modern common bile duct exploration (CBDE) was laid by Ludwig Courvoisier in 1890, with the first successful removal of CBD stones.⁷ For generations since this historical event, operative exploration of the common duct at the time of cholecystectomy has been considered the benchmark to which all other treatment modalities are compared.⁸

Endoscopic sphincterotomy (ES) has also evolved as an important tool in the management of CBD stones. The role of preoperative ES as a substitute for intraoperative cholangiography and CBDE in the patient who requires cholecystectomy is well established.^{9,10} In this study we analysed the result of Common bile duct exploration in 16 patients.

MATERIALS AND METHODS

All the patients who underwent elective procedure (15 patients) were admitted 3 days prior to surgery and were put on injection vitamin K₁ to normalize the prothrombin time. 1 patient was considered emergency common bile duct exploration for acute biliary pancreatitis who came within 7 hours of onset of pain and vomiting. Standard techniques were followed in all cases of open common bile duct exploration and for Laparoscopic common bile duct exploration. Silicon T-tube 14Fr size was placed in all the cases except in 3 cases. In 2 cases choledochoduodenostomy was done and in 1 primary repair of CBD was done laparoscopically. Antibiotics were given in all cases (inj cefotaxim 1 gm 8hrly and inj metronidazole 500 mg 8hrly) was given to all patients.

Postoperatively T-tube was clamped from 7th day and was removed by 10th day. Patients were followed up in 1 month of discharge date with final Histopathological reports. All operations were performed by the same surgical team.

RESULTS

Sixteen patients underwent OCBDE (open common bile duct exploration). One patient underwent LCBDE(laparoscopic common bile duct exploration). 1 patient required emergency surgery for acute pancreatitis who came within 7 hours of onset of pain and vomiting. In 13 patients, CBD stones were discovered with flexible choledochoscopy and intraoperative cholangiography. All of these patients underwent open choledochoscopy . Mechanical lithotripsy was employed in one patient who underwent laparoscopic common bile duct exploration. Mean operating time was 120+/-40minutes and length of hospital stay was 13+/- 3days. 3 complications (18.75%) were recorded, 2 cases of retained stone (12.5%) who was managed with choledochoduodenostomy at the same time as the stones were impacted in distal CBD. All the cases who had complications were minor wound infections. One case had bile leakage after removal of T- tube for 2 days. Final histopathological report for gall bladder did not show any evidence of malignancy for all cases. 14 were reported as chronic cholecystitis and 2 as acute cholecystitis. All the results are shown in the Table-1.

DISCUSSION

The goal of this study was to review the treatment and outcome of all patients undergoing cholecystectomy who were found to have CBD stones. Routine intraoperative cholangiography is advocated by most surgeons performing CBDE.¹¹⁻¹³ Fluoroscopy has been recommended by some authors.¹³ With high-quality fluoroscopy and image intensification, excellent cholangiograms can be obtained. Operative

choledochoscopy has reduced the incidence of retained CBD stones by permitting a more complete exploration of the biliary system.¹⁴

Traditionally, the treatment of choice for CBD stones has been open CBD exploration. Open bile duct exploration significantly increases the morbidity and mortality of simple cholecystectomy, and is related to the degree of obstructive jaundice and the presence of medical risk factors.¹⁵ The open choledocholithotomy mortality rate varies from 0 to 74%,¹⁵⁻¹⁶ but is substantially higher in cases of inflammatory complications; mortality in acute cholangitis rises to 21-32%¹⁶ and in acute pancreatitis to 3 -12%.¹⁶ But in our series there were only minor complications, no morbidity and mortality. Stone clearance rate is 87.75%. With the advent of per-operative choledochoscopy, the incidence of retained bile duct calculi in most series is 1 5%¹⁷ as compared to ours it is only 2 cases (12.25%) which was due to impacted stone.

Randomized trials have, however, shown that ES (endoscopic sphincterotomy) is the treatment of choice in patients with acute cholangitis¹⁸ or acute severe pancreatitis^{19,20} and is superior to operative choledochotomy in elderly high-risk patients²⁰ but is not free of complications.

Open common bile duct exploration can still be a gold standard technique in set up where ERCP is not available. The results of common bile duct exploration are good with less complications in experienced hands in our series.

Table-1: Preoperative, intraoperative and postoperative data for patients treated for CBD stones

S. N.	Variables	Data
1	Mean duration of Hospital stay	13+/-3days
2	Mean operation time	120+/- 40 min
3	T-tube removed (After cholangiogram) on 10th day 9th day	13(81.25%) 1(6.25%)
4	Post operative wound infections	3(18.75%)
5	leakage after removal of T-Tube	1(6.25%)
6	Chronic cholecystitis	14(87.5%)
7	Acute cholecystitis	2(12.5%)
8	Pulmonary complications	0
9	Deep venous thrombosis	0
10	Retained stones	2(12.5%)
11	Multiple stones in CBD	13(81.25%)
12	Single stone	3(18.75%)
13	Intraoperative Choledochoscopy(flexible)	14(87.5%)

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