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Original Research Paper

Surgery

AN ACCOUNT OF 15 YEARS EXPERIENCE OF LAPAROSCOPIC COMMON BILE DUCT EXPLORATION IN CHOLEDOCHOLITHIASIS FOLLOWED BY PRIMARY REPAIR AND ITS COMPARISON WITH OPEN CHOLEDOCHOLITHOTOMY IN DISHARI HEALTH POINT PRIVATE LIMITED, MALDA

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ABSTRACT A retrospective study of 4628 patients who underwent laparoscopic cholecystectomies with choledocholithotomy with primary repair of common bile duct , with a mean follow-up of 23.2 months is carried outto evaluate the safety and feasibility of laparoscopic choledocholithotomy via choledochotomy for the treatment of choledocholithiasis in Dishari Health Point Private Limited, a multispeciality hospital in Malda from January 2004 to January 2019.

We had to convert to open surgery in 27 patients and could complete the operation laparoscopically in rest 4621 patients. We also did open surgery in 30 patients apart from this.

We analyse the results and it was found that Laparoscopic bile duct exploration via choledochotomy followed by primary duct closure is feasible and safe for the treatment of choledocholithiasis.

KEYWORDS : Common bile duct stone; Laparoscopic common bile duct exploration; Advantages

INTRODUCTION:

Laparoscopic bile duct exploration via choledochotomy followed by primary duct closure is feasible and safe for the treatment of choledocholithiasis. With a protocol of routine cholangiography, laparoscopic common bile duct exploration, and selective use of open common bile duct exploration (when laparoscopic common bile duct exploration is not possible), the reliance on a second procedure (endoscopic sphincterotomy) can be minimized laparoscopic common bile duct exploration, a technically demanding operation, is possible at the time of laparoscopic cholecystectomy in the majority of cases, with a low complication rate and a short length of hospital stay[1].

AIMS AND OBJECTIVE:

To evaluate the safety and feasibility of laparoscopic choledocholithotomy via choledochotomy for the treatment of choledocholithiasis.

Design:

A retrospective series of 4628 patients who underwent laparoscopic common bile duct exploration, with a mean follow-up of 23.2 months along with 30 cases of open common bile duct exploration.

Time Span: 01.01.2004 to 31.12.2019

Main outcome measures: Documented removal of common bile duct stones and procedure-related complications. We also find out the average length of stay, bile leak and its management and recurrent stones in these patients.

RESULTS AND ANALYSIS:

We had to convert 27 cases out of 4628 cases of laparoscopic common bile duct exploration.

Table-1:

Operation done	No of cases	Percentage
Total choledocholithotomy	4658	100
Open choledocholithotomy	30	0.64
Laparoscopic choledocholithotomy	4601	98.78
Laparoscopic converted to open choledocholithotomy	27/4628	0.58

We could complete laparoscopic common bile duct exploration in 99.42% cases and we had to convert to open surgery in 0.58% of cases

Table-2:

Total laparoscopic choledocholithotomy Attempted	4628	Percentage
Laparoscopic choledocholithotomy completed	4601	99.42
Converted to Open choledocholithotomy	27	0.58

Table 3:

Operation done	Average length of stay in hospital
Open	8.6 days
Laparoscopic	5.2 days
Laparoscopic converted to open surgery	8.8 days

In case of laparoscopic common bile duct exploration it was seen that average post - operative length of stay for the patients was 5.2 days, whereas it was 8.6 days for open procedure and 8.8 days where we had to convert from laparoscopic to open procedure.

Table -4:

Leakage of bile in drain managed by conservatively	9	4621	0.19%
Leakage of bile in drain managed by operative intervention	12	4621	0.26%
Total	21	4621	0.45%

We encountered bile leak (>100ml) after 72 hours in drain in 21 (0.45%) cases out of 4621 patients, among which 9 (0.19%) was managed conservatively and 12 (0.26%) other required interventioms.

Table -5:

Retained stones	5/4658	0.11%
Open cholodocholithotomy	1/30	3.33
Laparoscopic choledocholithotomy	4/4601	0.09

We found retained stones in 4 (0.09%) patients of laparoscopic common bile duct exploration as compared to 1(3.33%) out of 30 patients of open operation.

DISCUSSION:

Evidence from several studies demonstrates that single stage LC and LCBDE is superior to ERCP and then LC for the management. One of the barriers to this treatment algorithm is the perceived barriers to learning the technical aspects of LCBDE[2].

The successful laparoscopic management of CBDS is dependent on several factors including surgical expertise, adequate equipment, the biliary anatomy and the number and size of CBD stones. Successful stone clearance rates for LCBDE range from 85% to 95% with a morbidity rate of 4% to 16% and mortality of 0% to 2%[3].

Between January 2007 and June 2012, Yong Zhou and his team performed laparoscopic common bile duct exploration (LCBDE) and primary closure of choledochotomy in 78 patients who were subjected to endoscopic retrograde cholangiopancreatography (ERCP) and stone removal, but failed in endoscopic stone extraction, were referred to them. No intraoperative complications were experienced in the patients. 6 patients required conversion to open cholecystectomy due to impacted stones. The mean operative time was 145 minutes. The mean postoperative hospital stay was 6days. All the patients achieved successful stone clearance. 13 cases had slight bile leaks, which resolved spontaneously. None of the patients experienced biliary peritonitis, biliary fistula, pancreatitis, or cholangitis[4].

Nine studies,including two prospective studies and seven retrospective studies, to review Laparoscopic common bile duct exploration for elderly patients with choledocholithiasis were done to conduct a meta- analysis. There were 2004 patients in this meta-analysis, including 693 elderly patients and 1311 younger patients. There was no statistically significant difference between elderly patients and younger patients regarding stone clearance rate (OR 0.73; 95% CI 0.42-1.26; p = 0.25), overall complication rate (OR 1.31; 95% CI 0.94-1.82; p = 0.12), and mortality rate (OR 2.80; 95% CI 0.82-9.53; p = 0.10). Similarly, the operative time, conversion rate, bile leakage, reoperation, residual stone rate, and recurrent stone rate showed no significant difference between two groups (p > 0.05). While elderly patients showed high risk for pulmonary complication (OR 4.41; 95% CI 1.78-10.93; p = 0.001) compared with younger patients[5].

Single-stage LCBDE is superior to ERCP + LC in terms of technical success and shorter hospital stay in good-risk patients with gallstones and CBD stones, where expertise, operative time and instruments are available[6].

Recently with the great progress in laparoscopic skills, treatment of the patients by LCBDE can be a substitute to ERCP presenting safe one-setting treatment with considerably lesser hospital stay and less expenses, less traumatic, quick recovery, and no abdominal scars. Moreover, LCBDE does not disturb the function of sphincter of Oddi and its sequelae such as papillary stricture and recurrent distal CBD stones[7,8].

CONCLUSIONS:

Laparoscopic choledocholithotomy via choledochotomy can be performed safely, without increasing the morbidity rate as compared with that of open choledocholithotomy. Thus, some of the advantages of minimally invasive surgery are preserved.

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