



IS LAPOROSCOPIC CHOLEDOCHODUODENOSTOMY ALTERNATIVE TO FAILED ERCP FOR DIFFICULT CHOLEDOCHOLETHEASIS?

Grubnik Mariia, Dr; Ilyashenko Vadym, PHD; Grubnik Volodymyr, MD, Professor

Odesa National Medical University, Odesa, Ukraine

Odesa Regional Hospital, Odesa, Ukraine

Municipal Hospital 11, Odesa, Ukraine

INTRODUCTION

Choledochoduodenostomy (CCD) was widely used for benign biliary obstruction early in the 20th century but largely abandoned after the advent of ERCP with sphincterotomy. We assessed outcomes of laparoscopic CCD (LCCD) in patients with difficult, recurrent choledocholithiasis after multiple failed ERCPs and contrasted them with contemporaneous ERCP results.

AIM

The aim of this study was to evaluate the feasibility, safety, and long-term outcomes of laparoscopic side-to-side CDD in patients with benign difficult choledocholithiasis after failed or non-feasible ERCP, with particular attention to distal intrapancreatic CBD narrowing.

METHOD

From 2018 to 2025, 29 consecutive patients underwent LCCD after unsuccessful ERCP. The operation used four trocars, a 1.5–2.0 cm longitudinal choledochotomy on a dilated common bile duct (CBD), a corresponding duodenotomy just inferior to the CBD, and a side-to-side anastomosis fashioned with absorbable V-Loc™ 3-0 sutures; cholecystectomy was performed in all cases. During the same period, 398 patients with choledocholithiasis underwent ERCP with sphincterotomy using standard technique. Outcomes were recorded prospectively.

RESULTS

Twenty-nine patients (mean age 67.8 ± 8.6 years) (Table1) underwent laparoscopic CDD. Complete duct clearance at the index operation was achieved in 28/29 (96.6%), with choledochoscopy-guided laser lithotripsy in 5 (17.2%). Distal intrapancreatic CBD narrowing was identified in 21/29 (72.4%). Mean operative time was 102 ± 10.5 minutes, mean estimated blood loss was 90 ± 32 mL, and mean hospital stay was 5.2 ± 1.8 days (Table 2). All postoperative complications were limited to Clavien-Dindo grade II; there were no conversions, bile leaks, or mortality. During follow-up (range 6-60 months; mean 46 ± 12 months), no patient developed recurrent CBD stones, reflux cholangitis, or anastomotic stricture; sump syndrome occurred in 1 (3.4%) patient and was treated endoscopically (Table3).

Table 1. Baseline characteristics and indications (n=29).

Variable	Value
Age, years	67.8 ± 8.6 (range 52-85)
Sex	Women 21 (72.4%); men 8 (27.6%)
ASA physical status	II: 20 (69.0%); III: 9 (31.0%)
Obstructive jaundice	14 (48.3%)
Acute cholangitis	7 (24.1%)
Preoperative PTBD	6 (20.7%)
Failed ERCP - periampullary diverticulum*	12 (41.4%)
Failed ERCP - large stone(s) 15-30 mm*	8 (27.6%)
Failed ERCP - multiple stones (7-23) *	6 (20.7%)
Failed ERCP - altered anatomy/prior surgery*	2 (6.9%)
Recurrent stones after LC + ERCP/EST	7 (24.1%)

Table 2. Operative and postoperative outcomes (n=29).

Outcome	Value
Conversion to open surgery	0
Operative time, minutes	102 ± 10.5 (range 75-118)
Estimated blood loss, mL	90 ± 32
Complete CBD clearance at index operation	28/29 (96.6%)
Laser lithotripsy used	5 (17.2%)
Distal CBD narrowing on choledochoscopy	21 (72.4%)
Overall postoperative complications (Clavien-Dindo grade II)	6 (20.7%)
Bile leak / anastomotic failure	0
Postoperative ileus	1 (3.4%)
Cardiac arrhythmia	1 (3.4%)
Clavien-Dindo grade III-V complications	0
Pulmonary complications	4 (13.8%)
Unplanned intensive care unit admission	0
30-day mortality	0
Length of stay, days	5.2 ± 1.8

Table 3. Long-term outcomes (n=29; follow-up 6-60 months).

Outcome	Value
Reflux cholangitis	0
Recurrent CBD stones	0
Anastomotic stricture	0
Clinically significant bile reflux gastritis	Not observed (among those evaluated endoscopically)
Sump syndrome	1 (3.4%); treated endoscopically
Reintervention	1 endoscopic procedure

CONCLUSIONS

In carefully selected patients with difficult, recurrent choledocholithiasis after failed ERCP, laparoscopic CCD provided excellent safety (0% mortality, no major morbidity or reoperation) and durable outcomes, with manageable late sump syndrome. In contrast, standard ERCP in this timeframe was associated with 5.8% severe complications and 1.3% mortality. LCCD should be considered a valuable rescue option when endoscopic therapy fails.

ABBREVIATIONS

Abbreviations: ASA, American Society of Anesthesiologists; CBD, common bile duct; ERCP, endoscopic retrograde cholangiopancreatography; EST, endoscopic sphincterotomy; LC, laparoscopic cholecystectomy; PTBD, percutaneous transhepatic biliary drainage. *More than one reason for ERCP failure could be present in a single patient (Table1).

CONTACT INFORMATION

Odesa National Medical University
Dr. Grubnik Mariia
Ph. +380934225318
E-mail dr.mgrubnik@gmail.com