ORIGINAL RESEARCH PAPER
Volume - 12 | Issue - 10 | October - 2023 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

T-TUBE DRAINAGE VS. PRIMARY CLOSURE AFTER OPEN CHOLEDOCHOTOMY

General Surgery

Dr. Shiva Chandra Sai Arvini
Dr. K. Suhas Chaitanya
Dr. Srinath Reddy

ABSTRACT

Background: Endoscopic retrograde cholangiopancreatography (ERCP) is the main treatment for choledocholithiasis, but in a small number of cases, especially when the stone is large and impacted, the procedure may not be successful. In these cases, the patient will need either open or laparoscopic common bile duct exploration followed by T-tube placementinsertion. Typically, a T-Tube cholangiogram is carried out on the tenth postoperative day, and the tube is removed on the twelve to fourteenth day. Alternatively, to assure duct clearance with or after post-exploratory choledochoscopy, primary closure of the duct .Can be done without a biliary stent. **Methods:** This study involved 30 patients who had open choledocholithotomy after a failed endoscopic extraction. After choledochotomy, group B (n=15) underwent primary duct closure while group A (n=15) had T-tube insertion. **Results:** One patient suffered bile leakage in Primary closure which is managed by ERCP and stenting and Avg duration of hospital stay is 6-10 days.2 patients suffered bile leak after T Tube removal, managed by ERCP & stenting. One patient developed a fever, which was managed conservatively.Avg hospital stay is 12-16 days. **Conclusions:** If a stone-free duct can be guaranteed preoperatively using choledochoscopy, primary closure over the biliary stent following cholecystectomy and/or choledocholithotomy should be the preferable approach in choledocholithiasis.

KEYWORDS

INTRODUCTION

The frequency of gall stone disease in India is about 4%, making it one of the most prevalent issues affecting the digestive tract. Choledocholithiasis and cholelithiasis are related. about 10% to 15% of patients. There are various techniques of removing obstructions from the common bile duct and Endoscopic extraction is a popular technique. present procedure. However, there are some situations that cannot this approach, and surgical removal is the only option that can in such circumstances. either surgical extraction or open surgery or laparoscopic surgery. Post-choledocholithotomy T-tube insertion, whether open or laparoscopic, is a common procedure. The rationale for T-tube implantation is that it offers (a) postoperative decompression of the CBD in the event of an outflow obstruction (b) radiological visualisation of the CBD (c) and (d) a potential path for the removal of any remaining stone.

Nutritional abnormalities and fluid and electrolyte imbalance might result from external bile drainage using a T-tube. Furthermore, it raises the risk of cholangitis and wound infection.However, it results in lost man days and a longer hospital stay (>10 days). As an alternative, the common bile duct can be largely closed after choledocholithotomy with or without the implantation of an intraductal stent, provided that the absence of stones in the ductal system can be verified by rigid or flexible post-exploratory intraoperative choledochoscopy.

The study's objective was to assess the morbidity and length of hospital stay in patients undergoing common bile duct T-tube implantation with primary bile duct closure over primary closure in cases of choledocholithiasis following CBD exploration.

MATERIALS AND METHODS:

The study was conducted in Dept of General Surgery Narayana Medical College from September 2022 to June 2023.

30 pts were included in the study, 15 pts of group A underwent primary closure, and 15 in group B, T tube drainage was done after CBD exploration.

The pts were evaluated with routine investigations including CBC, LFT, Coagulation screening, Renal function test, abdominal usg, chest X-ray, ECG, and MRCP (in a few pts)

Inclusion Criteria-

Preoperative ultrasound or MRCP evidence of CBD stones
USG/MRCP suggests impacted stones or stones>12mm in size.

Exclusion Criteria-

Patients with malignancy, renal failure, pancreatic pathology causing jaundice, and other severe comorbidities.

All the patients underwent cholecystectomy and Choledo cholithotomy

Group-A

(Primary Closure)
15 patients
3 males,12 females
Age range- 30-60 years
CBD was closed with Vicryl 3-0 atraumatic needle
The subhepatic abdominal drain was placed

Group- B

(T-Tube drainage)
15 patients
4 males,11 females
Age range 30-65 years
T-Tube of 12/14F was placed, and CBD closed over it
Subhepatic drain placed
Cholangiogram done on post-op day 10
Tube clamped for 24 hrs, then removed

RESULTS

Comparison of the outcome of results in both groups was based on the following parameters-
Number of patients with postoperative complications
The average duration of hospital stay in days

GROUP-A(Primary closure)-
One patient suffered bile leakage managed by ERCP and stenting
Avg duration of hospital stay- 6.866 SD 1.06 (6-10 days)

GROUP-B (T-Tube drainage)-
2 patients suffered bile leak after T Tube removal, managed by ERCP & stenting. One patient developed a fever, which was managed conservatively. Avg hospital stay- 13.33 SD 1.39 (12-16 days)

DISCUSSION

Choledocholithotomy is a complex procedure with appreciable morbidity and mortality.Though complication rates in both groups are not significantly different, in T tube drainage patients, biliary leakage, persistent biliary fistula, skin excoriation, and infection delay healing

& prolongs hospital stay.

T-tubes are uncomfortable, and require continuous management as the risks of displacement & obstruction are always present.

The mean hospital stay in the T tube insertion group was much longer as compared to the primary closure group.

CONCLUSIONS

Both primary closure & T tube drainage are equally effective in the management of choledocholithiasis. However, primary closure of CBD after open choledochotomy is safe with shorter hospital stay compared to T tube drainage.

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