



A COMPARATIVE STUDY OF ROLE OF DRAIN IN LAPROSCOPIC CHOLECYSTECTOMY IN CASES OF CALCULUS CHOLECYSTITIS

Dr. Jayesh V. Parikh HOU and Professor, Department of General Surgery, B.J. Medical College, Civil Hospital, Ahmedabad.

Dr. Parth R. Dalal Assistant Professor, Department of General Surgery, B.J. Medical College, Civil Hospital, Ahmedabad.

Dr. Vasant T. Padhiyar* 3rd Year Resident, Department of General Surgery, B.J. Medical College, Civil Hospital, Ahmedabad. *Corresponding Author

ABSTRACT

Laparoscopic cholecystectomy has become the gold standard treatment for gall stone disease. This procedure is also associated with difficulties and complications. So, many surgeons adopted drainage of GB fossa after procedure to drain bile or blood to check for injury to CBD or vessels, which is protective. Putting a drain is also associated with post Op pain, longer hospital stay. This study is about merits and demerits of putting a drain in GB fossa of 50 patients undergoing elective laparoscopic cholecystectomy.

KEYWORDS : Laparoscopic Cholecystectomy; Calculus Cholecystitis

INTRODUCTION

Laparoscopic cholecystectomy has revolutionized the treatment of gallstone disease, being the most remarkable surgical innovations of 20th century. As all other surgical interventions, laparoscopic cholecystectomy is also associated with number of complications, which may range from mild to serious and even life threatening at times. To prevent such complications routine drainage was adopted in laparoscopic cholecystectomy because of the fear of collection of bile or blood, requiring open procedures and to allow carbon dioxide insufflated during laparoscopy to escape via the drain site, thereby decreasing the shoulder pain. On the other hand, drain use may increase infective complications and delay discharge. This serves as a basis to undertake present study to compare the effect of drain versus no drain use on outcome of laparoscopic cholecystectomy.

MATERIALS AND METHODOLOGY

The study was conducted at the department of General Surgery by senior faculties, at publicly funded tertiary care institution. 50 patients with symptomatic gallstone disease were admitted for elective surgery from October 2016 to October 2018. After obtaining Written informed consent, the patients were divided into two groups- Group A and Group B on random basis,

Group A: (n= 25) Sub-hepatic space was drained by an abdominal drain (Ryle's tube No. 20) which was brought out through mid axillary port.

Group B: (n= 25) Non-drainage of Sub-hepatic space

All patients were subjected to Laparoscopic cholecystectomy under General anesthesia. Laparoscopic cholecystectomy was performed using three port or four port technique. In 25 patients in group B non-drainage of sub-hepatic space was used, in the group A sub-hepatic space was drained by a abdominal drain (Ryle's tube No. 20) which was brought out through mid axillary port. All the patients in both experimental and control group were evaluated for outcome measures postoperatively including Abdominal pain (Visual Analogue Scale), Shoulder pain, Drain site infection, Wound infection, Fever, Duration of post-operative hospital stay, Nausea, Vomiting, Hemorrhage.

RESULTS AND DISCUSSION

In the present study symptomatology distribution of patients shows RHC pain most common symptom followed by Nausea / Vomiting in both drain and no drain group.

Minor symptoms are epigastric pain, fever and right shoulder pain.

- Both groups are homogenous in term of symptoms (p = 0.7013)

| Symptoms | No. of patients with drains (n=25) | No. of patients without drains (n=25) |
|---------------------|------------------------------------|---------------------------------------|
| RHC pain | 24 | 24 |
| Epigastric pain | 7 | 10 |
| Nausea / Vomiting | 20 | 18 |
| Fever | 7 | 4 |
| Right shoulder pain | 0 | 0 |

- In present study, 15 patients with intra-operative adhesions need for drain kept while 4 patients with intra-operative adhesions did not need for drain kept.
- In laparoscopic cholecystectomy, intra-operative adhesions increase need for drain kept and this difference is statically significant. (p value= 0.0002)
- In present study, 3 patients have normal calot's triangle absent, in which 2 have mirizzi syndrome and one patient have absent cystic duct. In all three patients drain kept. Out of three patients, one patient had biliary leak occurred in post-operative period and manage conservatively, and remaining 2 patient had only drain site pain occurred.
- But in present study, need for drain in abnormal calot's triangle patients is statistically insignificant (p value= 0.074). This may be due to small sample size.
- Laparoscopic cholecystectomy with drain took slightly more time than laparoscopic cholecystectomy without drain but this difference was statistically significant.(p value=0.0001)
- Consequently, more operative time requirement in drain group may be due to anterior axillary 4th port insertion and keeping the drain.

| | Intra-operative Adhesions | | Normal Calot's Triangle | | Intra-operative Duration Average Duration |
|--|---------------------------|--------|-------------------------|--------|--|
| | Present | Absent | Present | Absent | |
| No. of patients with drains (n=25) | 15 | 10 | 22 | 3 | 106.8± 11.44min |
| No. of patients without drains (n=25) | 4 | 21 | 25 | 0 | 79.6± 15.13min |

- Incidence of post-operative pain is more in patients with drain group (Average pain score 6.6) as compared to no drain group (Average pain score 3.8) and this value is statistical significant (p value = 0.0001).
- The study of Sharma et al found similar findings that patients with drain group had higher pain score (Average pain score 5.41) as compared to no drain group (Average pain score 3.45) with p value = 0.005.
- In present study, without drain group most (76%) of patients were discharged within 3 days of operation while in with drain group most (76%) of patients were required post-operative hospital stay 4-7 days and 16% of patients were more than 7 days.

| | Post-operative Pain | | | Post-operative Hospital stay | | |
|---------------------------------------|---------------------|----------|--------|------------------------------|----------|---------|
| | Mild | Moderate | Severe | 1-3 days | 4-7 days | >7 days |
| No. of patients with drains (n=25) | 0 | 20 | 5 | 2 | 19 | 4 |
| No. of patients without drains (n=25) | 9 | 16 | 0 | 19 | 6 | 0 |

CONCLUSION

In this study, results indicate that routine drainage of gallbladder bed after elective laparoscopic cholecystectomy cannot be beneficial. Drainage causes more postoperative pain, prolongs the operative time, increase drain site pain and infection, wound infection and prolongs the hospital stay. However, in selected patients with potential bile leak e.g. imperfect closure of cystic duct, bile staining of liver bed suggesting the possibility of missed accessory duct, difficult cholecystectomy due to inflamed gallbladder and/or adhesions, abnormal calot's triangle, drainage can be beneficial. At the same time drainage shouldn't be done only for the false sense of security as it can neither prevent postoperative biliary peritonitis nor bleed, unless great care is taken during surgery.

Difficult laparoscopic cholecystectomy can be judge by pre-operative criteria of high WBC count, palpable gall bladder, previous attack of acute cholecystitis, previous abdominal surgery and USG findings of thickened gallbladder wall, impacted stone at neck and pericholecystic collection and intra-operative criteria of inflamed gallbladder, intra-peritoneal and peri-GB adhesions, structural anomalies and abnormal calot's triangle. Patients with absent of such criteria's can be operated with three port laparoscopic cholecystectomy, without drain and can be discharged within 24-48 hours. Final conclusion can be drawn by doing this study for operation done by experience senior surgeon, larger sample size and longer follow-up.

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