



COMPARATIVE STUDY OF DRAIN VS NO DRAIN IN LAPAROSCOPIC CHOLECYSTECTOMY

General Surgery

Dr. P. Sartaz
Hussain

Department of General Surgery, Narayana Medical College and Hospital, Nellore.

Dr K. Suhas
Chaitanya

Department of General Surgery, Narayana Medical College and Hospital, Nellore.

ABSTRACT

Aims and Objectives: To assess the outcome in laparoscopic cholecystectomy with drain and no drain. **Methods:** This study was a randomized controlled study conducted on 50 patients who were hospitalized in the Department of General Surgery, Narayana medical college and hospital, from January 2022 to June 2023 and underwent laparoscopic cholecystectomy. Patients were divided into two groups, with no drain (Group A) and another drain (Group B). Data such as Age distribution, Sex distribution, incidence of SSI and hospital stay in days. **Results:** Total 50 patients finished the study; The two groups were similar in terms of age (mean age of Group A: 41.08 ± 12.39 years and Group B: 42.84 ± 13.08 years; P value: 0.093) and gender distribution (P value: 0.395). The mean drain volume was 11.07 mL of serosanguineous fluid. SSI was noted in 32% of the cases. The incidence of SSI was similar in the two Groups; P value: 0.246. **Conclusion:** The routine use of drain following laparoscopic cholecystectomy for uncomplicated cholelithiasis has no added benefit in the postoperative recovery, especially in the prevention of complications or reducing the duration of hospital stay.

KEYWORDS

Cholecystectomy, Cholelithiasis and Laparoscopic Cholecystectomy

INTRODUCTION:

Laparoscopic cholecystectomy is an increasingly accepted method for the treatment of cholelithiasis worldwide. This procedure is minimally invasive and has the advantages of a shorter hospital stay, earlier return to daily activities and reduced pain and complications as compared to the traditional methods and open surgeries. Although this is a less invasive procedure, it has been associated with shoulder tip pain, nausea and vomiting in the postoperative period which may be due to high-pressure CO₂ insufflation during the operation and the accumulation of gas in the right subphrenic area.

However, the routine use of drains following laparoscopic cholecystectomy is controversial. In some patients with biloma or hematoma, drains are routinely recommended to prevent fluid build-up in the abdominal cavity and infection and to detect early leaks. Some studies have found placement of drains to be harmful and have adverse impact on the postoperative recovery. Drains have been associated with increased risk of infection and longer hospital stays. Therefore, the present study was conducted to evaluate the benefit of placement of drains following laparoscopic cholecystectomy uncomplicated cholelithiasis.

AIMS AND OBJECTIVES:

To assess the outcome in patients underwent laparoscopic cholecystectomy with drain and no drain.

MATERIALS AND METHODS:

50 patients diagnosed with cholelithiasis were participated in this randomized control study over a period of 18 months. In this study, patients admitted with uncomplicated cholelithiasis (both males and females) in the Department of General Surgery at Narayana Medical College and Hospital, Nellore, served as the clinical material. The study was conducted (over an 18-month period) from January 2022 to June 2023.

Sample size: 50 cases

Inclusion Criteria:

Elective Laparoscopic surgery - cholelithiasis.

Exclusion Criteria:

Those who undergoing emergency surgery, contraindication to epidural anesthesia or laparoscopic surgery, stones in the common bile duct, cholangitis, pancreatic duct obstruction, malignancy of the biliary tree, cases where the surgery had to be converted to open cholecystectomy and those refusing to give consent to participate in the study were also excluded.

Comparative Parameters:

Drain quantity, post operative pain, incidence of surgical site infection

and duration of hospital stay.

Statistical Analysis:

The outcomes of the two groups were compared and analysed using SPSS software, in this study.

RESULTS:

Total of 50 patients, the two Groups were similar in terms of age (mean age of Group A: 41.08 ± 12.39 years and Group B: 42.84 ± 13.08 years; P value: 0.093) and gender distribution (P value: 0.395). The mean drain volume was 11.07 mL of serosanguineous fluid. SSI was noted in 32% of the cases. The incidence of SSI was similar in the two Groups; P value: 0.246

Table 1: Distribution Of SSI Among The Two Groups.

SSI	Group A	Group B	P value
NO	76%	60%	0.246
YES	24%	40%	

The duration of hospital stay was similar in both the Groups; P value: 0.093. Re- exploration was not required in any case

Table 2: Distribution Of Duration Of Hospital Stay Between Two Groups

DURATION	Group A	Group B	P value
Stay (in days)	3.48 ± 1.61	4.32 ± 1.84	0.093

DISCUSSION:

Cholelithiasis or gall bladder stones and cholecystitis, or inflammation of gall bladder are commonly encountered disease entities requiring surgical intervention. Cholecystectomy is the definitive treatment of choice, with the recent advances and availability of laparoscopic procedures, the mortality and morbidity associated with the procedure has decreased considerably. However, the practice of postoperative placement of drain is being continued.

There was an inclination towards placement of drain following cholecystectomy to prevent the intra- abdominal collection of fluids and to detect any complication of bile leak or haemorrhage at the earliest. However, following recent advances especially the laparoscopic techniques, the complication rates have reduced significantly, ranging from 0.5% to 6%.¹¹ Therefore, the present study evaluates any benefit conferred by the placement of drain following laparoscopic cholecystectomy.

In the present study, both the groups were similar in terms of baseline characteristics of age and gender. The mean drain volume in the cases with drain was 11.07 mL of serosanguineous fluid. The incidence of SSI was similar in both the groups (P value: 0.246). When assessed according to the hospital stay, the duration was also similar in the two

groups (P value: 0.093). Thus, our study showed that placement of drain conferred no added advantage in the postoperative period following laparoscopic cholecystectomy. Over the years, multiple studies have been conducted in different regions of the world to assess the efficacy of placement of drain after laparoscopic cholecystectomy. Various studies have assessed different parameters to evaluate the efficacy of drain placement. Studies have observed that drain placement led to longer operative time and longer hospital stay similar or increased wound infection rates, similar or increased incidence of postoperative pain and similar incidence of postoperative nausea and vomiting.

Thus, drain placement provides no added advantage in terms of reducing complications or hospital stay. In fact, placement of drain may increase the incidence of wound infection by foreign body reaction and may also lead to prolonged hospital stay due to requirement of removal of drainage prior to discharge. A meta-analysis in 2014 involving 12 studies and 1939 cases also concluded that drain placement after elective cholecystectomy is not advantageous, particularly in the cases where a dry operative field could be achieved at the end of the operative procedure

CONCLUSION:

The routine use of drain following laparoscopic cholecystectomy for uncomplicated cholelithiasis has no added benefit in the postoperative recovery, especially in the prevention of complications or reducing the duration of hospital stay.

REFERENCES:

1. Kapoor T, Wrenn SM, Callas PW, Abu-Jaish W. Cost Analysis and Supply Utilization of Laparoscopic Cholecystectomy. *Minim Invasive Surg.* 2018;2018:7838103.
2. Keus F, de Jong JA, Gooszen HG, van Laarhoven CJ. Laparoscopic versus open cholecystectomy for patients with symptomatic cholelithiasis. *Cochrane Database Syst Rev.* 2006 Oct 18;(4):CD006231.
3. Rubert CP, Higa RA, Farias FV. Comparison between open and laparoscopic elective cholecystectomy in elderly, in a teaching hospital. *Rev Col Bras Cir.* 2016 Feb;43(1):2-5.
4. Kanwer DB, Kaman L, Nedounsejane M, Medhi B, Verma GR, Bala I. Comparative study of low pressure versus standard pressure pneumoperitoneum in laparoscopic cholecystectomy: a randomised controlled trial. *Trop Gastroenterol.* 2009;30(3):171-4.
5. Donatsky AM, Bjerrum F, Gogenur I. Intraperitoneal instillation of saline and local anesthesia for prevention of shoulder pain after laparoscopic cholecystectomy: a systematic review. *Surg Endosc.* 2013;27:2283e2292.
6. Dey A, Malik VK. Shoulder Tip Pain Following Laparoscopic Cholecystectomy-a Randomized Control Study to Determine the Cause. *Indian J Surg.* 2015 Dec;77(Suppl 2):381-4.