



TO DRAIN OR NOT TO DRAIN IN ELECTIVE LAPAROSCOPIC CHOLECYSTECTOMY – A STUDY OF 50 CASES

General Surgery

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ABSTRACT

Background: Gallstones often require surgical intervention and laparoscopic cholecystectomy is the gold standard treatment. The procedure is minimally invasive with significantly less complications. Therefore, the present study was conducted to evaluate the advantage of placement of drains following laparoscopic cholecystectomy. **Method:** A total of 50 cases presenting with cholelithiasis or cholecystitis and meeting the inclusion and exclusion criteria were included after obtaining approval from the Institutional Ethics Committee and written informed consent from all the participants. Demographic details and histories were recorded. The patients were randomized into two Groups: A (No drain) and B (Drain). Operative procedure was performed according to the standard guidelines. The drain output, length of hospital stay and postoperative complications were noted. **Results:** The two groups were similar in terms of demographic variables. The incidence of surgical site infection (SSI) and the length of hospital stay were similar in the two groups (P value: more than 0.05). **Conclusion:** It may be effectively concluded that the placement of drain following laparoscopic cholecystectomy has no added advantage in the postoperative recovery period.

KEYWORDS

Drain, hospital stay, laparoscopic cholecystectomy, surgical site infection.

INTRODUCTION

Laparoscopic cholecystectomy is an increasingly accepted method for the treatment of cholelithiasis worldwide. This procedure is minimally invasive¹ 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.^{2,3}

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.^{4,5,6} 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.^{7,8} Therefore, the present study was conducted to evaluate the benefit of placement of drains following laparoscopic cholecystectomy uncomplicated cholelithiasis.

MATERIALS AND METHOD

This randomized controlled interventional study was conducted under the Department of Surgery, MGM Medical College and Hospital, Kamothe, Navi Mumbai, from March 2023 to August 2023, following approval from the Institutional Ethics Committee.

1. A total of 50 patients of either gender aged more than 18 years and less than 70 years of age undergoing elective laparoscopic cholecystectomy for cholelithiasis or cholecystitis were included in the study. Patients undergoing emergency surgery or those having any contraindication to epidural anesthesia or laparoscopic surgery, below 18 years and above 70 years, Pregnant females, Complicated cholecystectomy with bile spillage, Empyema of gall bladder, comorbidities were excluded from the study. 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. A written informed consent was obtained from all the patients.

Demographic details of the patients were recorded. History of present illness and detailed past and personal histories were noted. Routine pre-anesthetic fitness was done. Epidural anesthesia was administered and laparoscopic cholecystectomy was performed by experienced surgeons as per the standard protocol. The patients were randomized into two Groups: Group A (No drain) and Group B (Drain). The patients were followed up till discharge. Any incidence of surgical site infection (SSI) was noted. The drain was removed before discharge unless bile or blood was present wherein re-exploration was done. The duration of hospital stay was recorded.

All the data was entered in excel and analysed.

RESULTS

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). The duration of hospital stay was similar in both the Groups; P value: 0.093 (Table 2). Re-exploration was not required in any case.

Table 1: Distribution Of Ssi In The Two Groups

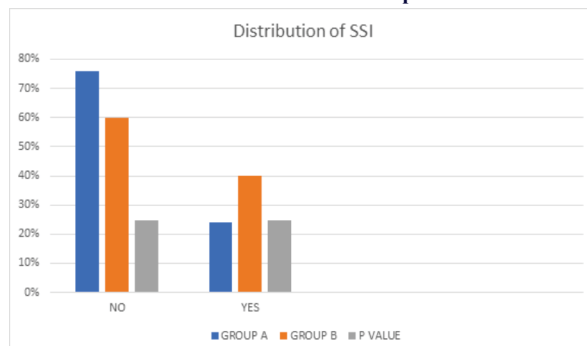
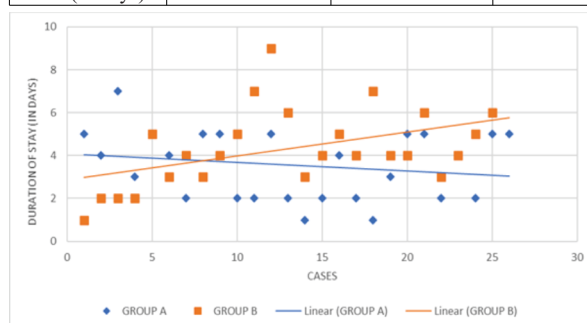


Table 2: Distribution Of The Duration Of Hospital Stay In The Two Groups

	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.⁹ Cholecystectomy is the definitive treatment of choice.¹⁰ 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 hemorrhage 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^{1,12} and longer hospital stays^{7,8,12,13}, similar^{7,12,14} or increased⁸ wound infection rates, similar^{14,15} or increased incidence of postoperative pain^{7,8,13} and similar incidence of postoperative nausea and vomiting^{7,14}.

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.¹⁶

Limitations: The present study was limited by the attendance of patients undergoing laparoscopic cholecystectomy. Therefore, the results may not be generalised.

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.

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