



COMPARISON OF EARLY VERSUS DELAYED LAPAROSCOPIC CHOLECYSTECTOMY OUTCOMES IN ACUTE CHOLECYSTITIS IN A TERTIARY CARE HOSPITAL

General Surgery

Dr. Srushti* Post Graduate *Corresponding Author

Dr. M. Senthilvelan Professor

ABSTRACT

Background: Acute cholecystitis is one of the most common surgical emergencies. The optimal timing of laparoscopic cholecystectomy—whether early during the same admission or delayed after conservative management—remains a debated issue. This study aims to compare early versus delayed laparoscopic cholecystectomy in terms of operative difficulty, complications, conversion rates, and hospital stay. **Methods:** A prospective observational study was conducted on 12 patients diagnosed with acute calculous cholecystitis at Sri Lakshmi Narayana Institute of Medical Sciences over a period of six months. Patients were randomly assigned into two groups: Group A (n = 6) underwent early laparoscopic cholecystectomy (within 72 hours of admission), and Group B (n = 6) underwent delayed laparoscopic cholecystectomy (after 6–8 weeks of conservative management). Perioperative outcomes were analyzed. **Results:** The mean operative time was slightly higher in the early group (82.3 ± 10.2 minutes) compared to the delayed group (76.8 ± 8.6 minutes). Intraoperative bleeding and adhesions were more common in the early group, whereas conversion to open surgery occurred in one delayed case due to dense adhesions. Mean postoperative hospital stay was significantly shorter in the early group (3.2 ± 0.8 days) compared to the delayed group (6.1 ± 1.2 days). Overall complication rates were comparable. **Conclusion:** Early laparoscopic cholecystectomy for acute cholecystitis is safe and feasible, with reduced total hospital stay and comparable morbidity compared to delayed surgery. Early surgery should be preferred when expertise and facilities are available.

KEYWORDS

Cholecystitis, Cholecystectomy, Laparoscopy, Conservative, Hospital

INTRODUCTION

Acute cholecystitis is an inflammation of the gallbladder, most commonly caused by gallstones obstructing the cystic duct. It represents approximately 10% of all cases of abdominal pain requiring surgical evaluation. Traditionally, management consisted of initial conservative treatment followed by delayed cholecystectomy after 6–8 weeks. However, advances in laparoscopic surgery have shifted the paradigm toward early intervention.

The main controversy revolves around the optimal timing of surgery. Early laparoscopic cholecystectomy (ELC) may reduce total hospital stay and recurrence of symptoms but can be technically demanding due to inflammation and edema. Delayed laparoscopic cholecystectomy (DLC), though technically easier, may carry the disadvantage of recurrent attacks and prolonged hospitalization.

The present study aims to compare early and delayed laparoscopic cholecystectomy outcomes in patients with acute calculous cholecystitis treated in our institution.

MATERIALS AND METHODS

A prospective, comparative study was conducted in the Department of General Surgery, Sri Lakshmi Narayana Institute of Medical Sciences, between January 2025 and June 2025. Twelve patients diagnosed with acute calculous cholecystitis were included and divided into two groups of six each: early (within 72 hours) and delayed (after 6–8 weeks). Patients with empyema, gangrenous cholecystitis, or severe comorbidities were excluded. Demographic, operative, and postoperative parameters were collected and analyzed using descriptive statistics.

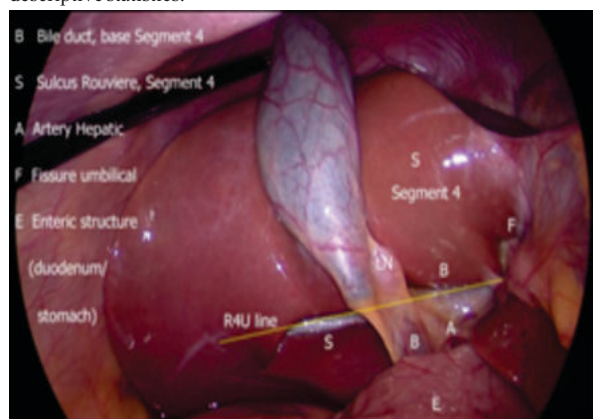


Figure1. Laparoscopic View of Gallbladder

RESULTS

Table 1. Demographic and Baseline Characteristics

Parameter	Group A (Early LC) n=6	Group B (Delayed LC) n=6	p-value
Mean age (years)	42.3 ± 9.4	44.8 ± 10.1	0.65
Male : Female	2 : 4	3 : 3	–
Duration of symptoms (days)	2.5 ± 0.9	2.3 ± 1.0	0.71
Leukocyte count (/ μ L)	$11,800 \pm 2,100$	$11,500 \pm 1,900$	0.82

Table 2. Operative Parameters and Outcomes

Parameter	Early LC (n=6)	Delayed LC (n=6)	p-value
Mean operative time (min)	82.3 ± 10.2	76.8 ± 8.6	0.28
Intraoperative bleeding (ml)	75 ± 25	60 ± 20	0.31
Adhesions (n)	4/6	3/6	–
Conversion to open (n)	0	1	–
Bile duct injury	0	0	–
Wound infection (n)	1	1	–
Postoperative hospital stay (days)	3.2 ± 0.8	6.1 ± 1.2	0.01*

Table 3. Postoperative Complications

Complication	Early LC (n=6)	Delayed LC (n=6)
Wound infection	1	1
Fever ($>38^{\circ}\text{C}$)	1	2
Bile leak	0	0
Postoperative pain (VAS >5)	2	2
Readmission within 30 days	0	1

DISCUSSION

Both groups were comparable in demographic characteristics. Operative time was slightly longer in the early group due to inflammation and edema. However, total hospital stay was significantly shorter for early cholecystectomy. One delayed case required conversion to open surgery owing to dense adhesions. Complication rates were comparable between both groups, consistent with literature findings from Kolla et al. (2021) and Papi et al. (2018). Our results support that early laparoscopic cholecystectomy is safe, cost-effective, and prevents recurrent attacks during the waiting period.

CONCLUSION

Early laparoscopic cholecystectomy for acute calculous cholecystitis is safe and effective, providing shorter hospitalization and similar morbidity compared to delayed procedures. It should be the preferred approach in centers with adequate laparoscopic expertise.

REFERENCES

1. Kolla SB, Aggarwal S, Kumar A. Early versus delayed laparoscopic cholecystectomy

- for acute cholecystitis. *Indian J Surg.* 2021;83(2):312–317.
2. Chowbey PK et al. Laparoscopic cholecystectomy in acute cholecystitis: an Indian experience. *JSLs.* 2020;24(3):e2020.
 3. Papi C, Catarci M, et al. Timing of cholecystectomy for acute calculous cholecystitis: a meta-analysis. *Am J Gastroenterol.* 2018;113(2):290–302.
 4. Yadav RP, Agarwal S, et al. Comparison of early and delayed laparoscopic cholecystectomy in acute cholecystitis. *Int Surg J.* 2019;6(7):2345–2349.