

ORIGINAL ARTICLE

A Prospective Comparative Study of Early Versus Delayed Laparoscopic Cholecystectomy in Acute Cholecystitis

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Abstract

Background: Acute cholecystitis is a pathology of inflammatory origin, usually associated with cholelithiasis, with a high incidence in the environment. The treatment of acute cholecystitis involves an important socioeconomic impact. There are two surgical therapeutic options: early laparoscopic cholecystectomy (ELC) during the same admission or delayed laparoscopic cholecystectomy (DLC) during a later admission after conservative treatment.

Aim and Objective

Aim: To evaluate and compare the effectiveness between the early laparoscopic cholecystectomy vs delayed laparoscopic cholecystectomy in the treatment of acute cholecystitis.

Objectives:

- To compare the timing of surgery, number of days of antibiotic coverage.
- To compare the number of days of hospital stay.
- To compare the intraoperative, post-operative complications, conversion to open cholecystectomy and follow up.
- To compare the overall mortality and morbidity.

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Patients and Methods:

It is a prospective study taking 65 patients were randomly selected to exclude any bias satisfying inclusion and exclusion criteria for the study, were admitted to the Dept. of General Surgery, MKCG Medical College and Hospital, Berhampur, Ganjam, Odisha, During the period from March 2023 to February 2025.

Results: In the study out of 65 patients, 33 patients underwent ELC and 32 patients underwent DLC, who were selected randomly. The mean duration of timing of surgery in ELC and DLC were 47.36 minutes and 65.75 minutes respectively. The mean duration of antibiotic coverage in ELC and DLC was found to be 3.58 days and 5.50 days respectively. The complications like adhesions, bleeding, edematous gallbladder, bile leak, gallbladder perforations were noted in both the groups. But these were comparatively lower in ELC than in DLC. On comparing the mean duration of hospital stay in ELC and DLC it was found to be 4.67 days and 6.50 days respectively. In the group of ELC the follow up period was almost uneventful. But in the DLC group there were readmissions recurrently and also complications like gallstone induced pancreatitis was seen. Hence, the follow up period revealed that ELC is better than DLC.

Conclusion: From the present study, we conclude that as compared to patients who underwent DLC, the parameters like mean timing of surgery, mean duration of antibiotic coverage, number of complications, mean duration of hospital stay, complaints in the follow up period are comparatively less in patients who underwent ELC. Hence, in patients of acute calculous cholecystitis, ELC is safe and preferable method of choice as compared to DLC, finally leading to reduction in the cost of treatment for the patient.

KEYWORDS

- Cholecystectomy in Acute Cholecystitis • ELC and DLC

INTRODUCTION

In the developmental stages of laparoscopic cholecystectomy, acute cholecystitis was considered a contraindication for the procedure. With the increasing experience in laparoscopic surgery, a number of centers have reported the use of laparoscopic cholecystectomy for acute cholecystitis, suggesting that it is technically feasible and safe. The traditional treatment (initial) of acute cholecystitis includes bowel rest, intravenous hydration, and correction of electrolyte abnormalities, analgesia, and intravenous antibiotics. Following this treatment, patients with uncomplicated disease are managed on outpatient basis and are called for laparoscopic cholecystectomy after a period of 6-8 weeks.

Early open cholecystectomy had been established as the preferred treatment of acute cholecystitis to reduce morbidity, mortality and the total hospital stay. Although

widely discussed in the past, unequivocal evidence exists supporting the superiority of early laparoscopic cholecystectomy within 72hrs over delayed laparoscopic cholecystectomy with respect to outcome and the cost of treatment. Delayed cholecystectomy potentially increases the chances of further gallstone related complications during the waiting interval and thus additional hospital admission on recent evaluation has indicated early laparoscopic cholecystectomy to be safe option in acute cholecystitis.

MATERIALS

It is a prospective study taking 65 patients were randomly selected to exclude any bias satisfying inclusion and exclusion criteria for the study, were admitted to the Dept. of General Surgery, MKCG Medical College and Hospital, Berhampur, Ganjam, Odisha, During the period from March 2023 to February 2025.

Inclusion Criteria:

All radiological proven cases of acute calculous cholecystitis.

Exclusion Criteria:

- Patient with acalculous cholecystitis.
- Patients with carcinoma gallbladder.
- Patients with cholangitis, choledocholithiasis.
- Patients who are not willing to be the part of study.

METHODS

In the study out of 65 patients, 33 patients underwent ELC and 32 patients underwent DLC, who were selected randomly. All the patients in the study were randomly selected on odd and even basis and were clinically and radiologically proven to be cases of acute calculous cholecystitis. ELC was performed within 72 hours of onset of pain and rest patients were managed conservatively for 6 weeks and were performed DLC. This survey interviews were conducted in confidential settings using a pretested questionnaire in the local language. The data collection included (1) Timing of cholecystectomy, (2) Number of days of antibiotic coverage, (3) Number of days of hospital stay, (4) Number of complications, (5) Follow-up period. Patient's comfort was maintained during the interview. The data was collected after obtaining informed consent in their local language, in the presence of eye witness.

OBSERVATION AND RESULTS

Table 1: Age incidence

Age (years)	Frequency	Percentage
20-30	2	3
31-40	20	30
41-50	27	42
51-60	13	20
61-70	3	5
Total	65	100

Table 2: Gender Distribution

Gender	Frequency	Percentage
Male	23	35
Female	42	65
Total	65	100

Table 3: Relationship with Diet

Diet	Frequency	Percentage
Vegetarian	20	30
Mixed diet	45	70
Total	65	100

Table 4: Clinical Presentation

Complaints	Frequency	Percentage
Fever	48/65	73
Right hypochondrium pain	47/65	72
Bilious vomiting	51/65	78

Table 5: Serum Bilirubin Estimation

Serum Bilirubin(mg/dl)	Frequency	Percentage
0.2-0.55	26	40
0.6-1.2	39	60
Total	65	100

Table 6: USg Findings - Gall Bladder Wall Thickness

Wall Thickness (mm)	Frequency	Percentage
Less than 4mm	25	38
More than 4mm	40	62
Total	65	100

Table 7: Mean Timing of Surgery of ELC Vs DLC

Parameter	Timing of Lap. Cholecystectomy	
	Early (ELC)	Delayed (DLC)
Mean timing of surgery (mins)	47.36	65.75

Table 8: Mean Duration of Antibiotic Coverage ELC Vs DLC

Parameter	Timing of Lap. Cholecystectomy	
	Early (ELC)	Delayed (DLC)
Mean duration of antibiotic coverage (days)	3.58	5.50

Table 9: Intra-op Complications of ELC Vs DLC

Complications	ELC (n=33)	DLC (n=32)
Adhesions	5 (15%)	5 (16%)
Bile leak	1 (3%)	0 (0%)
Gallbladder perforation	3 (9%)	1 (3%)
Bleeding	0 (0%)	5 (15%)
Conversion to open	6 (18%)	9 (28%)

Table 10: Mean Duration of Hospital Stay ELC Vs DLC

Parameter	Type of Cholecystectomy	
	Early (ELC)	Delayed (DLC)
Mean duration of Hospital Stay (days)	4.67	6.50

Table 11: Follow Up Period in ELC vs DLC

Parameter	Type of Cholecystectomy	
	Early (ELC) (n=33)	Delayed (DLC) (n=32)
Bile Leak	3	2
Pancreatitis	2	7

CONCLUSION

From the present study, we conclude that as compared to patients who underwent DLC, the parameters like mean timing of surgery, mean duration of antibiotic coverage, number of complications, mean duration of hospital stay, complaints in the follow up period are comparatively less in patients who underwent ELC. Hence, in patients of acute calculous cholecystitis, ELC is safe and preferable method of choice as compared to DLC, finally leading to reduction in the cost of treatment for the patient.

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