

Original Research

Assessment of Early versus Delayed Laparoscopic Cholecystectomy in Acute Cholecystitis

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ABSTRACT:

Background: Due to fear of increase morbidity and high rates of conversion to open surgery laparoscopic cholecystectomy was not advised in patients with acute cholecystitis previously. At the present time, acute cholecystitis is a well-known cause of acute abdominal pain and the ultimate treatment is laparoscopic cholecystectomy. But the concern that is when to perform surgery is still controversial. The aim of present study is to evaluate the safety and feasibility of early LC for acute cholecystitis and to compare the results with delayed LC. **Methods:** A total of 150 laparoscopic cholecystectomies were performed for acute cholecystitis and evaluated for duration of surgery, postoperative stay, intraoperative and postoperative complications stay by chi square test and paired t-tests using SPSS software. 75 patients underwent laparoscopic cholecystectomy within 48 h to seven days of beginning of symptoms (group A) and 75 patients underwent surgery after 6 weeks of beginning of symptoms (group B). **Results:** Total hospital stay was significantly reduced in group A as compared to group B thus, reducing the overall total cost. We found in our study that the conversion rate in early laparoscopic cholecystectomy and delayed laparoscopic cholecystectomy was 6.66% and 4%, respectively, this difference is insignificant. **Conclusion:** Early cholecystectomy significantly reduces the duration of hospital stay and costs in patients with acute cholecystitis. Laparoscopic cholecystectomy can be performed anytime of presentation of acute cholecystitis. Although delaying laparoscopic cholecystectomy was associated with more complications and higher costs

Key words: Acute cholecystitis, Timing of surgery and Laparoscopic cholecystectomy.

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INTRODUCTION:

The appropriate timing for the management of acute cholecystitis with cholelithiasis for laparoscopic cholecystectomy is still in question.¹ Two techniques are available for the management of acute cholecystitis. In first technique early laparoscopic cholecystectomy is performed (within 7 days of onset of symptoms)² as definitive treatment after establishing diagnosis and surgical fitness of the patient in the same hospital admission. In the second technique conservative treatment is done which is successful in about 90% of the cases and then delayed cholecystectomy is performed in the second hospital admittance after a period of 6–12 weeks.³ The preference of what technique to be applied depends upon hospital infrastructure, surgical expertise, and patient's condition.

Laparoscopic cholecystectomy has turn out to be the gold standard in the treatment of symptomatic gallstones. The main advantages of laparoscopic

cholecystectomy includes less postoperative pain, less time required for hospitalization and recovery, and better cosmetic results.⁴ At first Laparoscopic cholecystectomy was not indicated in patients with acute cholecystitis due to fear of high morbidity and high rates of conversion to open surgery.⁵ The probable risk of severe complications and the high conversion rate of Laparoscopic cholecystectomy in period of acute inflammation is a chief concern.⁶ Afterward, because of expanding experience and trust in Laparoscopic cholecystectomy and technical support, the signs of early Laparoscopic cholecystectomy were reached out to incorporate patients with acute cholecystitis. Still most specialists were already in conformity that conservative treatment with antibiotics pursued by interim elective Laparoscopic cholecystectomy a little while after the acute inflammation subsides could result in a more safe operation with a lower transformation rate.⁷ Keeping above views in mind we conducted the present study to

evaluate the safety and feasibility of early LC for acute cholecystitis and to compare the results with delayed LC..

METHODS

We examined 150 laparoscopic cholecystectomies performed at Department of General Surgery, Govt. Medical College Datia, M.P. , India for acute cholecystitis. All patients included had features of acute cholecystitis on USG at the time of acute presentation at our hospital or elsewhere. Of these, 75 cholecystectomies were performed for acute cholecystitis within 48 h to seven days of symptoms attack (group A), 75 patients underwent surgery 6 weeks or more after the onset of symptoms (group B). They were compared on the following parameters:

1. Duration of surgery.
2. Duration of post operative stay.
3. Presence of major biliary injury and other surrounding organ injury

Technique

We performed laparoscopic cholecystectomy using a four port technique. The 10 mm umbilical port is used for a 30° laparoscope. A 10 mm epigastric port serves as the main working port; while a 5 mm right hypochondriac port in the midclavicular line acts as the left-hand port for the surgeon. A 5 mm port as right lateral port in anterior axillary line is used by the assistant to hold the fundus of the gallbladder and retract it upward. In case of acutely inflamed tense gallbladders, the contents are first aspirated using a suction & cautery. The Calot's triangle is then dissected and the cystic artery is cauterized with bipolar or unipolar cautery after clipping at proximal end. The cystic duct is divided between ligatures and/or clips. The gall-bladder is then dissected off the liver bed using hook with cautery. Inflamed gallbladders are retrieved with or without using an endobag through the umbilical port or through the epigastric port. Port sites are irrigated regularly. Drain is put through the right lateral port if spillage of gallbladder content occurs.

RESULTS:

Table 1: Outcomes.

	GROUP A	GROUP B
Number of cases	75	75
Males, females	21, 54	25, 50
Age (mean age in years)	50.16± 11.89	52.22±14.11
Duration of surgery (Minutes)	56.25±8.15	52.75±9.25
Post operative stay (Days)	4 ±0.85	5 ±0.78
Total hospital stay (Days)	6±3.1	9.2±2.23
Conversions	5 (6.66%)	3 (4%)

Table 2: Intra operative complications.

Complications	Group A (75)	Group B (75)
Major biliary injury	0	0
Other organ injury	0	0

Table 3: Post operative complications

Complication	Group A (75)		Group B (75)	
	Frequency	%age	Frequency	%age
Wound infection	3	2.66%	2	2.66%

DISCUSSION:

The possible risk of severe complications and the high conversion rate of Laparoscopic cholecystectomy in the phase of acute inflammation is a main concern.^{7,8} Afterwards, the outcome of increasing experience and confidence in Laparoscopic cholecystectomy and technical support, the indications of early Laparoscopic cholecystectomy were extended to include patients with acute cholecystitis. Now a day's Laparoscopic cholecystectomy is accepted as the method of choice for treatment of cholecystitis.⁶ In our study the mean age of patients was 50.16 years in group A and 52.22 years in group B. In group A there were 21 males and 54 females; in group B there were 25 males and 50 females. Acar T et al⁹, and Sinha R¹⁰ also reported more female patients in their respective studies. Hirota M et al¹¹ stated that this condition is seen three times more in women than men.

The mean operation time in our study was 56.25 minute in group A and 52.75 minutes in group B. The difference was not statistically significant. Agarwal R et al² in their study also reported increased although insignificant difference in duration of surgery in early laparoscopic cholecystectomy. The longer duration of surgery for group 1 compared to group 2 could be attributed to the significantly higher percentage of gall bladder filled with pus, gangrenous gall bladder come across during surgery, and the time taken for endobag retrieval and drain placement, although it was comparable in both groups.⁶

Total hospital stay was significantly reduced in group A as compared to group B thus, reducing the overall total cost of the treatment. Our study agrees with studies done by Agarwal R et al² and Chauhan HR and Charpot RV⁶ who also showed a significant difference in the duration of hospital stay between both groups.

We found in our study that the conversion rate in early laparoscopic cholecystectomy and delayed laparoscopic cholecystectomy was 6.66% and 4%, respectively, this difference is insignificant. Kum CK et al⁷, Siddiqui T et al¹², also stated that early laparoscopic cholecystectomy to be safe option in acute cholecystitis, although conversion to open cholecystectomy rates may be higher.

The problem of biliary tract injury is the major concern in the routine use of the laparoscopic approach for acute cholecystitis. There was neither mortality nor

the major bile duct injuries in our study as reported by Al-Hajjar N et al.¹³ Only the minor complications were more in early laparoscopic cholecystectomy. There was insignificant difference in the rate of wound infection in both the groups. The above discussion indicates that early laparoscopic cholecystectomy is preferable in patients with acute cholecystitis.

CONCLUSION:

Laparoscopic cholecystectomy can be performed anytime of presentation of acute cholecystitis. Although delaying laparoscopic cholecystectomy was associated with more complications and higher costs.

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