

# A Retrospective Study to Compare Laparoscopic Cholecystectomy and Open Cholecystectomy in Elderly Patients

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## A B S T R A C T

**Introduction:** LC is very safe as well as productive treatment approach for acute cholecystitis as compared to open cholecystectomy (OC). Hypothetical advantages of laparoscopic approach incorporate diminished hospitalization and cost, diminished torment, evasion of vast entry point with enhanced cosmesis and decreased post-agent recuperation time with an early come back to work. Study aimed to compare laparoscopic cholecystectomy and open cholecystectomy in elderly patients with acute cholecystitis.

**Material and Methods:** The present study was conducted in the department of general surgery, Mahatma Gandhi Hospital, Bhilwara, Rajasthan (India). For the study, we retrospectively viewed the medical records of patients aged 75 years or more with acute cholecystitis who underwent Laparoscopic cholecystectomy (LC) and compared patients who underwent open cholecystectomy (OC). A total of 24 (12 each for LC and OC) were selected. The analysis of preoperative, intra-operative, and postoperative parameters was done and was compared.

**Results:** The Male/Female ratio in LC and OC group was 7/5 and 6/4 respectively. The mean age of patients in LC group was 82.1±3.8 years and in OC group was 79.5±4.2 years. The comparison of data between both groups showed non-significant difference for all variables. The mean operative time period for LC was 95.3 minutes and for OC was 89.8 minutes.

**Conclusion:** Laparoscopic cholecystectomy is safer procedure in comparison to open cholecystectomy. The postoperative stay at hospital was shorter with Laparoscopic cholecystectomy.

**Key words:** Cholelithiasis, Cholecystectomy, Laparocopy, Surgery

## INTRODUCTION

Acute cholecystitis is a genuine surgical crisis for elderly patients. Laparoscopic cholecystectomy (LC) is the best quality level operation for uncomplicated cholelithiasis.<sup>1</sup> A few examinations have additionally discovered that LC is very safe as well as productive treatment approach for acute cholecystitis as compared to open cholecystectomy (OC).<sup>2,3</sup> Hypothetical advantages of laparoscopic approach incorporate diminished hospitalization and cost, diminished torment, evasion of vast entry point with enhanced cosmesis and decreased post-agent recuperation time with an early come back to work. In spite of the fact that it indicated early encouraging outcomes, late trials demonstrate an expansion in the occurrence of agent difficulties; particularly common bile duct damage.<sup>4</sup> Costly instruments, particular preparing and long expectation to absorb information likewise restrain the utilization of laparoscopy.<sup>5</sup> This has prompted a great deal of soul seeking and various endeavors at looking at the benefits and bad marks of laparoscopic opposite open cholecystectomy.<sup>6</sup> Hence, the present study was planned to compare laparoscopic cholecystectomy and open cholecystectomy in elderly patients with acute cholecystitis.

## MATERIAL AND METHODS

The present study was conducted in the department of general surgery, Mahatma Gandhi Hospital, Bhilwara, Rajasthan (India). The ethical clearance for the protocol of study was obtained from the ethical committee of the institute. For the study, we retrospectively viewed the medical records of patients aged 75 years or more with acute cholecystitis who underwent Laparoscopic cholecystectomy (LC) and were compared patients who underwent open cholecystectomy (OC). A total of 24 (12 each for LC and OC) were selected. The analysis of preoperative, intra-operative, and postoperative parameters was done and was compared. The selected patients had history of abdominal pain and tenderness at right upper quadrant showing clinical picture of acute cholecystitis and were admitted in emergency. The confirmation of the diagnosis of acute cholecystitis was done by ultrasound in which signs of thickened gall bladder wall and pericholecystic fluid were seen. Standard four-port technique was used to perform laparoscopic cholecystectomy.

## STATISTICAL ANALYSIS

The statistical analysis of the data was done using SPSS software for windows. The significance of the data was

checked using Chi-square test and Student's t-test. A p-value<0.05 was predetermined to be statistical significant.

### RESULTS

A total of 24 elderly patients were included in the study.

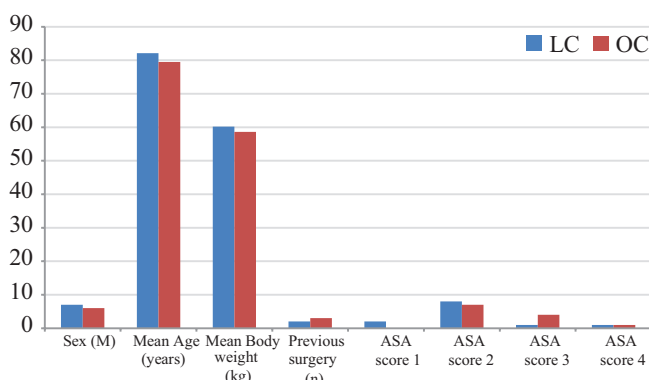
Variables	LC	OC	p-value
Sex (M/F)	7/5	6/4	0.22
Mean Age (years)	82.1±3.8	79.5±4.2	0.31
Mean Body weight (kg)	60.2±9.3	58.6±8.3	0.46
Previous surgery (n)	2	3	0.09
ASA physical status score			
1	2	0	0.06
2	8	7	0.72
3	1	4	0.23
4	1	1	0.33

**Table-1:** Comparison of demographic variables for both groups

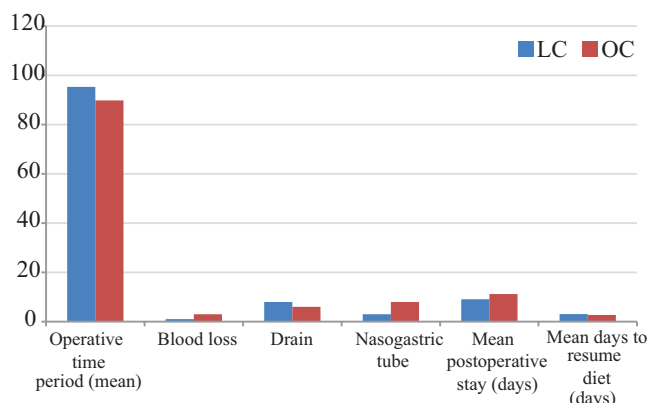
Variables	LC	OC	p-value
Operative time period (mean)	95.3	89.8	0.81
Blood loss, >500 mL	1	3	0.23
Drain	8	6	0.52
Nasogastric tube	3	8	0.02*
Mean postoperative stay (days)	9.1	11.21	0.01*
Mean days to resume diet (days)	3.1	2.7	0.16

\*Significant

**Table-2:** Comparison of post operative parameters for both the groups



**Figure-1:** Showing comparison of demographic variables for both groups



**Figure-2:** Comparison of post operative parameters for both the groups

Out of 24 patients, 12 patients underwent Laparoscopic cholecystectomy and 12 underwent open cholecystectomy. The surgical procedure for LC and OC were performed by experienced medical officers. Table 1 shows the comparison of demographic data between LC group and OC group. The Male/Female ratio in LC and OC group was 7/5 and 6/4 respectively. The mean age of patients in LC group was 82.1±3.8 years and in OC group was 79.5±4.2 years. The mean body weight of LC and OC group was 60.2±9.3 kg and 58.6±8.3 kg respectively. The history of previous surgery was present in 2 patients in LC group and 3 patients in OC group. The ASA physical status score 2 was seen in majority of patients in both the groups. The comparison of data between both groups showed non-significant difference for all variables (p>0.05)[Fig 1]. Table 2 shows the comparison of postoperative parameters for both the groups. The mean operative time period for LC was 95.3 minutes and for OC was 89.8 minutes. Blood loss more than 500 mL was seen in 1 patient for LC and 3 patients for OC. The nasogastric tube was employed in 3 patients in LC and 8 patients in OC. The mean postoperative stay after completion of procedure was 9.1 days for LC and 11.21 for OC. The difference for nasogastric tube and mean postoperative stay was statistically significant with p-value less than 0.05 [Fig 2].

### DISCUSSION

The occurrence of cholelithiasis and the frequency of complications would be expected to increase with advancing age, consequently biliary surgery is carried out more often for elderly patients. LC is the preferred treatment for elderly patients with symptomatic cholelithiasis due to lower morbidity rate and shorter hospital stay than those of patients underwent OC.<sup>4</sup>

In the current study, we compared laparoscopic cholecystectomy with open cholecystectomy in elderly patients. We observed that the mean operative time in OC is more as compared to LC. Similarly, the complication of blood loss was seen more in OC as compared to LC. The postoperative stay in hospital was more in OC as compared to LC. Lujan JA et al<sup>7</sup> compared the results of laparoscopic cholecystectomy (LC) with those of open cholecystectomy (OC) in the treatment of acute cholecystitis. Conversion to OC from LC was required in 15% of the patients. Complications occurred in 14% and 23% of the patients in the LC and OC group respectively with no significant differences between both groups. The length of the hospital stay averaged 8.1 days and 3.3 days for the OC group and for the LC group respectively. The study reported Laparoscopic cholecystectomy as a safe and suitable alternative to OC in patients with acute cholecystitis with a low rate of complications, a shorter hospital stay, and offers the patient a more comfortable postoperative period than OC. Hasan K et al<sup>8</sup> retrospectively reviewed charts of patients who underwent LC. Four LC groups were defined: elective LC – Group I; interval LC – Group II; LC during acute cholecystitis – Group III; and LC following percutaneous cholecystostomy (PCC) – Group IV. There was significant difference in operative time between the groups (p < 0.05). The conversion rate was highest in Group III (24.8%) where

as there was no significant difference between Groups I and II, and between Groups III and IV. A steady increase of conversion and complication rates were illustrated between the groups of elective LC, interval LC and LC post PCC.

Spatariu A et al<sup>9</sup> concluded that conversion performed for laparoscopic cholecystectomies is a proof of ripening and professional responsibility, a fit solution for cases in which the advantages of laparoscopic surgery are overwhelmed by the risks found during surgery; gangrenous acute cholecystitis is one of the most important causes of conversion--72%; the shirt front around the gallbladder was converted in 82.4% of cases; conversion is more frequent in men--11.7%; acute cholecystitis with symptoms found for more than 96 hours are converted in 15.1% of cases

LC for acute cholecystitis offers, lower morbidity, and less mortality rate than open surgery, hence is a safe treatment approach with a shorter postoperative stay. It should be commenced as early as the diagnosis of acute cholecystitis is established and if possible before 3 days following the onset of symptoms which can result in reduction of both the conversion rate and the total hospital stay as medical and economic benefits.<sup>10-14</sup>

## CONCLUSION

From the results of present study, we conclude that Laparoscopic cholecystectomy is safer procedure in comparison to open cholecystectomy. The postoperative stay at hospital was shorter with Laparoscopic cholecystectomy.

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