

ORIGINAL RESEARCH

Evaluation of Outcomes of Laparoscopic Cholecystectomy in the Elderly Population: An Institutional Based Study

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ABSTRACT

Background: The present study was conducted for assessing outcomes of laparoscopic cholecystectomy in the elderly. **Materials & Methods:** A total of 100 patients who were scheduled to undergo laparoscopic cholecystectomy. Patients were divided into two groups based on age: elderly (≥ 60 years, $n = 50$) and young (< 60 years, $n = 50$). Complete demographic and clinical details of all the patients were obtained. All patients were evaluated with abdominal ultrasonography and baseline investigations required for surgery. The timing of laparoscopic cholecystectomy in patients presenting with acute phase was after the resolution of symptoms. Laparoscopic cholecystectomy was performed by the standard four-port technique. Perioperative data including conversion rate was recorded. Outcome was compared. **Results:** Mean operative time among elderly and young patients was 53.6 minutes and 51.2 minutes respectively. Conversion to open cholecystectomy was done in 3 patients of elderly group and 4 patients of young group. Non-significant results were obtained while comparing complications, time to resume normal diet and length of hospital stay among elderly patients and young patients. **Conclusion:** Elderly individuals (60 years of age or more) who undergo laparoscopic cholecystectomy had similar outcomes to younger people. Thus, even in the elderly, laparoscopic cholecystectomy is safe.

Key words: Laparoscopic Cholecystectomy, Elderly.

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INTRODUCTION

Laparoscopic cholecystectomy was first introduced by Muhe in 1986 and has now evolved to the point where it has replaced the open technique in many medical centers around the world. Today, laparoscopic cholecystectomy, rather than the open technique, is considered as the treatment of choice for gallstone disease.^{1,2} Laparoscopic removal is now the procedure of choice when cholecystectomy is indicated. However, newer, less invasive techniques, such as natural orifice transluminal endoscopic surgery (NOTES) and single incision laparoscopic cholecystectomy (SILC), are currently being

investigated as alternatives to the traditional 4-port laparoscopic removal.^{3,4}

Longer life expectancies together with a higher incidence of gallbladder stones increasing in conjunction with increasing age has resulted in a greater number of elderly patients being operated on today for symptomatic gall-bladder stones. Limited functional reserves and the presence of associated chronic comorbidities increase the operative morbidity and mortality of these patients. Although laparoscopic cholecystectomy has become the gold standard for the treatment of gallbladder stones, its safety in elderly patients is still questioned.⁵⁻⁷ Hence; the present study was conducted for assessing

outcomes of laparoscopic cholecystectomy in the elderly population.

MATERIAL AND METHODS

The present study was conducted for assessing outcomes of laparoscopic cholecystectomy in the elderly population. A total of 100 patients who were scheduled to undergo laparoscopic cholecystectomy. Patients were divided into two groups based on age: elderly (≥ 60 years, $n = 50$) and young (< 60 years, $n = 50$). Complete demographic and clinical details of all the patients were obtained. All patients were evaluated with abdominal ultrasonography and baseline investigations required for surgery. The timing of laparoscopic cholecystectomy in patients presenting with acute phase was after the resolution of symptoms. Laparoscopic cholecystectomy was performed by the standard four-port technique.

Perioperative data including conversion rate was recorded. Outcome was compared. All the results were recorded in Microsoft excel sheet and were subjected to statistical analysis using SPSS software.

RESULTS

The mean age of the patients of the elderly group and young group was 69.3 years and 52.9 years respectively. Majority proportion of patients of both the study groups were males. Mean operative time among elderly and young patients was 53.6 minutes and 51.2 minutes respectively. Conversion to open cholecystectomy was done in 3 patients of elderly group and 4 patients of young group. Non-significant results were obtained while comparing complications, time to resume normal diet and length of hospital stay among elderly patients and young patients.

Table 1: Demographic variables

Variable	Elderly	Young
Mean age (years)	69.3	52.9
Males	28	29
Females	22	21
Rural residence	31	33
Urban residence	19	17

Table 2: Comparison of intraoperative and postoperative variables

Variable	Elderly	Young	p-value
Mean operative time (Mins)	53.6	51.2	0.74
Conversion to open cholecystectomy	3 patients	4 patients	0.17
Complications	LRTI	2	0.81
	UTI	3	
	SSI	3	
Time to resume normal diet	5.3 days	4.7 days	0.33
Length of hospital stay	6.2 days	5.1 days	0.19

LRTI: Lower respiratory tract infection, UTI: Urinary tract infection, SSI: Surgical site infection

DISCUSSION

Laparoscopic cholecystectomy (LC) since its inception in 1989 has become the gold standard treatment for gall stone disease. The technique of performing LC has undergone many changes and variations. Several surgeons have tried to reduce the size and number of ports to improve cosmetic and postoperative outcomes and developed their own different versions. The most recent development in technique of LC is single incision laparoscopic surgery (SILS) or single site laparoscopic cholecystectomy (SSLC). Laparoscopic cholecystectomy is recognized as the gold standard for the surgical management of gallstone diseases. Surgery for cholelithiasis is more common in elderly patients as the incidence of gallstones increases with age (13–50%). Age is one of the critical factors affecting the mortality and morbidity rates after cholecystectomy. The use of a laparoscopic procedure in elderly patients may cause problems because comorbid conditions are very common with advanced age and may increase the postoperative complications

and the frequency of conversion to open surgery. It has been reported that laparoscopic cholecystectomy in the elderly has comparable safety and efficacy to those in younger populations.⁸⁻¹⁰ Hence; the present study was conducted for assessing outcomes of laparoscopic cholecystectomy in the elderly.

The mean age of the patients of the elderly group and young group was 69.3 years and 52.9 years respectively. Majority proportion of patients of both the study groups were males. Mean operative time among elderly and young patients was 53.6 minutes and 51.2 minutes respectively. In a previous study conducted by Shin MS et al, authors retrospectively analyzed 205 patients who were diagnosed with acute cholecystitis. The patients were assigned to three groups: group A (aged < 65 years), group B, (aged between 65 and 79 years), and group C (aged > 79 years). Significant differences were not found in the complication rate among the age groups. Open conversion was required in eight of the 114 patients in group A, seven of the 70 patients in group B, and one of the 21 patients in group C. However, no statistical

significance was found. Moreover, no difference was noted in the start of the meal and the period from surgery to last visit, but hospital stay after surgery was longer in groups b and c. When sufficient preoperative assessment and treatment were performed, complication and conversion rates were not significantly different among the age groups.¹¹

In the present study, conversion to open cholecystectomy was done in 3 patients of the elderly group and 4 patients of young group. Non-significant results were obtained while comparing complications, time to resume normal diet and length of hospital stay among elderly patients and young patients. Annamaneni RK et al, in another study assessed LC among elderly patients. Seventeen (37%) patients were ≤ 70 years of age, and twenty-nine (63%) patients were ≥ 70 years of age. Twenty-two (48%) patients had ASA scores of ≥ 3 . Patients ≥ 70 had significantly higher ASA scores. Eighteen patients ≥ 70 years had ASA ≥ 3 compared with 4 patients ≤ 70 with ASA ≥ 3 ($P < 0.05$). Twenty-two patients ≥ 70 and 8 patients ≤ 70 required urgent surgery ($P < 0.05$). Fifteen (33%) patients presented with acute cholecystitis, and 31 (67%) patients presented with a greater number of chronic symptoms. Four (9%) patients had pancreatitis on presentation, and 6 patients underwent preoperative endoscopic retrograde cholangiopancreatography (ERCP). Two of these 6 patients also underwent sphincterotomy. Urgent surgery was performed in 30 (65%) patients. The mean operative time was 103 minutes. One (2%) conversion to open cholecystectomy was required. The mean postoperative stay was 7 days (range, 1 to 46). Fourteen (30%) patients had only a 1-night postoperative stay. Patients ≥ 70 had significantly longer postoperative stays. Nine patients ≥ 70 and only 1 patient ≤ 70 stayed in the hospital for more than 7 days. Postoperative complications were noted in 6 (13%) patients, most of which were chest infections. Five patients ≥ 70 and only 1 patient ≤ 70 developed postoperative complications. No mortalities occurred. Laparoscopic cholecystectomy is safe and feasible in elderly patients.¹² Shin MS et al evaluated the effects of thorough preoperative assessment and consultation for complications on clinical outcomes in elderly patients over 65 and over 80 years. Significant differences were not found in the complication rate among the age groups. Open conversion was required in eight of the 114 patients in group A, seven of the 70 patients in group B, and one of the 21 patients in group C. However, no statistical significance was found. Moreover, no difference was noted in the start of the meal and the period from surgery to last visit, but hospital stay after surgery was longer in groups b and c. When sufficient preoperative assessment and treatment were performed, complication and conversion rates were not significantly different among the age groups.¹³

CONCLUSION

Elderly individuals (60 years of age or more) who undergo laparoscopic cholecystectomy had similar outcomes to younger people. Thus, even in the elderly, laparoscopic cholecystectomy is safe.

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