LAPAROSCOPIC CHOLECYSTECTOMY IN THE ELDERLY PATIENTS. AN EXPERIENCE AT LIAQUAT UNIVERSITY HOSPITAL JAMSHORO

Arshad M. Malik, Abdul Aziz laghari, K. Altaf Hussain Talpur, Aisha Memon, Rafique Pathan, Jan Mohammad Memon

Department of Surgery, Liaquat University of Medical and Health Sciences, Jamshoro, Pakistan.

Background: Advancing age with its associated co-morbidities increases the likelihood of postoperative complications as well as conversion rate during laparoscopic cholecystectomy. Recent studies have also questioned efficacy of this procedure in geriatric patients. The present study assesses the safety and applicability of laparoscopic cholecystectomy in geriatric patients. The objective of the present study was to asses safety and applicability of laparoscopic cholecystectomy in the elderly patients of 65 years and above. **Methods:** This is a prospective analysis of 173 patients, over 65 years of age, who underwent laparoscopic cholecystectomy from December 2002 to November 2006 at Liaquat University Hospital, Jamshoro. Patients presenting with complicated and uncomplicated gallstone disease were included in the study population and all of them were operated laparoscopically. The data included demographic details, co-morbidities, underlying biliary pathology, indications for surgery, operative and postoperative complications, morbidity and mortality, and hospital stay. The statistical analysis of the data performed on SPSS version 10. **Results:** Laparoscopic cholecystectomy undertaken in 173 elderly patients with a mean age of 69.72 years, out of whom 52 (30.05%) were males and 121 (69.94%) were females. Co-morbid conditions were identified in 53.17% (n=92) patients and included hypertension in 38 patients (21.96%), Diabetes Mellitus in 23 patients (13.29%), COPD in 19 (10.98%) patients, Coronary artery disease in 9 (5.20%) and cardiac arrhythmias in 3 (1.73%) patients. Indications for surgery included simple biliary colic in majority of patients (69.94%) and complicated stone disease in 52 (30.05%) subjects. There were 37 (21.38%) emergency laparoscopic cholecystectomies and 136 (78.61%) patients were operated electively. Mean operative time was 100 minutes with a SD 29.03. Fourteen (8.09 %) patients required conversion to OC (Open Cholecystectomy) due to various reasons. Mean hospital stay was 6.28 days. Overall 23 (13.29 %) patients developed postoperative complications. One patient died of acute MI on 2nd postoperative day. **Conclusion:** There is no undue risk in laparoscopic cholecystectomy in the elderly population and the procedure can be regarded as safe as in patients below 65 years of age.

Key words: Laparoscopic cholecystectomy, Geriatric population, Morbidity.

INTRODUCTION

Advancing age has a direct relation with the incidence of cholelithiasis and there is an increasing incidence of complications superimposed on simple disease in the geriatric population.[1] Laparoscopic cholecystectomy has evolved as Gold standard treatment for gallstone disease.[2-5] However, its safety and applicability is not well defined in the geriatric patients.[6,7] Elderly patients are more likely to present with complicated gallstone disease such as acute and chronic cholecystitis, acute gallstone pancreatitis, empyema of gallbladder, acute cholangitis etc. Furthermore, majority of elderly patients also have coexistent morbidities such as high blood pressure, diabetes mellitus etc, making surgery challenging and hazardous in terms of post-operative complications and overall morbidity.[8] Since there is a general reluctance for surgery in our society, largely due to socioeconomic reasons, there are an ever increasing number of geriatric patients presenting with complicated gall stone disease. It is therefore important to assess the applicability and safety of laparoscopic cholecystectomy in geriatric patients who already have decreased functional reserve and co-existent problems, making them more vulnerable to develop postoperative complications.[9] In addition, many similar studies have reported a significantly high conversion rate to open cholecystectomy in geriatric population.[10,11] This may be explained by the repeated attacks of acute cholecystitis, leading to distortion of the anatomy in the area of Calot's triangle.

MATERIALS AND METHODS

This prospective study was conducted at Surgical Unit-1, Liaquat University Hospital Jamshoro and various private hospitals of Hyderabad from December 2002 to November 2006. One hundred and seventy-three patients (65 years and above), presenting with complicated and uncomplicated cholelithiasis, undergoing laparoscopic cholecystectomy were included in the study. Patients with clinical, biochemical and ultrasonologic evidence of acute pancreatitis, CBD stones and Cirrhosis were excluded from the study. Physicians and cardiologists attended patients with correctable co-existent morbidities and the deranged liver functions were corrected before surgery was undertaken in majority of patients. All

operations were performed by classical four-port technique while few additional changes were made depending upon the situation such as creating an additional port, cutting the walls of oedematous and thickened gallbladder to apply graspers properly. The specific outcome measures assessed included hospital stay, conversion rate to open cholecystectomy, operative and postoperative complications. The demographic details and results were recorded on a proforma and statistical analysis done on SPSS.

RESULTS

One hundred and seventy three patients with a mean age of 69.72 years, (Range 65 to 83 years) were included in the study. The demographic details are shown in Table-1**.**

Table-1: Demographic Details

Age Group Years	Gender		Total
	Male	Female	
65–70	36	87	123 (71.09%)
71–75	7	22	29 (16.76%)
76–80	4	7	11 (6.35%)
81–85	5	5	10 (5.78%)
Sex distribution	52	121	173

Values in parenthesis are percentages

Of these 10 (5.78%) patients were 80 years or above. There were 52 (30.05%) males and 121 (69.94%) females in the study population. The indications for surgery are shown in Table-2**.**

Table-2: Indications for laparoscopic cholecystectomy in study subjects

Indication	No: of patients	Percentage
Repeated billiary colic	106	(61.27)
Chronic cholecystitis	37	(21.38)
Acute cholecystitis	19	(10.98)
Empyema	05	(2.89)
Mucocele	04	(2.31)
Cholangitis	02	(0.57)
Total	173	(99.4)

Values in parenthesis are percentages.

As expected, a large proportion of the study subjects had one or the other associated medical problem. The incidence of these co-morbidities in our study is depicted in Figure-1**.** In majority of the patients the total operating time was in the range of 90–120 minutes as shown in Table–3**.**

Table-3: The Total operative time

Time duration	No: of Patients	Percentage
60-90 Minutes	66	38.15
90 – 120 minute	93	53.75
120 –250 minutes	14	8.09

Operative complications occurred in 20 (11.56%) patients including CBD injury in 4 patients and bleeding in 6 patients. The remaining operative complications were not serious and included spillage of stones (n=6) in peritoneal cavity and minor lacerations to bowel in 4 patients. Post operative complications occurred in 23 (13.29 %) patients but their severity and incidence was not so high as to preclude laparoscopic approach in elderly patients, as is evident from Table-4.

Table-4: Postoperative Complications. (n=23)

Complication	No. of patients	Percentage
Chest infection/Pneumonia	11	6.35
Acute myocardial infarction	1	0.57
Port sepsis	3	1.73
Intraperitoneal collection	2	1.15
Minor bile leak	3	1.73
Bleeding	3	1.73

Out of total study population, 14 (8.09%) patients required conversion to open cholecystectomy due to bleeding in 6 (42.85 %), CBD injury in 4 (28.57) and totally obscured anatomy in the area of Calot's triangle in remaining 4 (28.5%) patients. The postoperative stay ranged from 2 days to 20 days with a mean hospital stay of 6.28 days as shown in Table-5. One patient died due to acute myocardial infarction on the 2nd postoperative day, constituting an overall mortality of 0.57% in this study.

Table-5: Postoperative Hospital Stay

Duration of stay	No. of patients	Percentage
48 hours	9	5.20
3–6 Days	36	20.80
7–9 Days	105	60.69
10–12	9	5.20
13–15	7	4.04
16–18	5	2.89
19–20	2	1.15

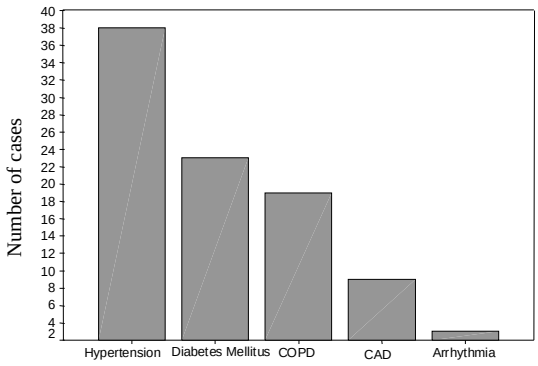

Figure-1: Co-existent medical problems

DISCUSSION

The management of gallstones has changed dramatically since the introduction of laparoscopic chole-cystectomy.[12] Acute complications of gallstone are found more commonly in the elderly population[13] and there is an increased incidence of co-existing medical problems, making them unsuitable candidates for

surgical intervention. Laparoscopic surgery has gained worldwide popularity and acceptance because of such advantages as minimal trauma and physiological dysfunction, shorter hospital stay, and early return to normality.[14-20] These advantages of laparoscopic surgery are highly desirable in elderly subjects where co-morbidities often make surgery hazardous and difficult. The associated morbidities in our study population are almost the same as reported by other similar studies.[21,22] There is a general reluctance for surgery in our country due to a general fear for surgery as well as the cost of surgery. This may be the reason for an increasing number of elderly patients attending surgical OPD's with complicated gallstone disease. The present study shows a greater proportion of complicated gallstone disease in the study subjects (30.05%), which is consistent with the results of other similar studies.[23,24] The commonest indication of laparoscopic cholecystectomy in our study population is repeated attacks of biliary colic (61.27%) and this is consistent with the observation of Tagle FM and associates[25] claiming biliary colic to be the commonest reason for laparoscopic cholecystectomy in their series. The mean operating time in our study is 100 minutes and many authors in their results report the same range.[23-26]

Twenty-three patients (13.29%) of the total study subjects developed postoperative complications, of which the commonest was chest infection, adding substantially to the postoperative morbidity in this study. A similar finding is reported by other studies.[9,27,28] The conversion rate in our study is 8.09% (n=14), which is much lower compared to the conversion rates reported by other similar studies.[10,11,29,30] Ten (5.78%) of the conversions were performed during operation for complicated gallstone disease while remaining 4 (2.31%) were done during elective, simple laparoscopic cholecystectomies. The mean postoperative hospital of 6.28 days in this study correlates with the other similar reports.[6,27] The longer hospital stay is primarily seen in patients who were operated for complicated gallstone disease. This forms the basis of recommendation by Magnuson *et al*[7] for keeping a low threshold for conversion in the elderly subjects. One patient in our study died on 2nd postoperative day due to acute myocardial infarction constituting an overall mortality of 0.57%. A similar mortality is reported by other studies.[10,13,24] The mortality in different studies reflects the association of old age with serious co-morbid conditions, making them more vulnerable to the hazards of surgery and anaesthesia.

CONCLUSION

Laparoscopic cholecystectomy can be attempted in elderly patients with a reasonable safety. We recommend that a thorough preoperative evaluation of the co-morbidities should be done and procedure should be undertaken before the disease becomes complicated.

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Address for Correspondence:

Dr. Arshad Malik, 69-70, Al-Mustafa Homes, Unit-9, Latifabad, Hyderabad, Sindh, Pakistan. Tel: +92-333-2601939
Email: arshadhamzapk@yahoo.com