LAPAROSCOPIC CHOLECYSTECTOMY IN PATIENTS OLDER THAN 90 YEARS IN A PRIVATE HOSPITAL IN ECUADOR: A CASE SERIES

Eddy Lincango-Naranjo MD[1], Julio Campuzano MD[2], Derek Gravholt, Ricardo Negrete MD[2]
1 Universidad Central del Ecuador, Quito, Ecuador, 2 Hospital Vozandes Quito, Quito, Ecuador

Abstract

Life expectancy is increasing. It is projected that by 2050, individuals aged 90 years and older will represent 2% of the population in the USA [1]. Although Ecuadorian life expectancy is lower than others (76.4 years) [2], the incidence of gallstones and its complications rise with age because of increasing lithogenicity of bile and gallbladder dysfunction [3]. By age 90 years, > 24% of men and 35% of women have gallstones [1,4].

Elderly patients have a reduced physiological capacity, which, associated with their comorbidities, makes surgeons reluctant to perform cholecystectomy in these patients [1]. Some authors describe age as the main factor that increases the morbidity and mortality of patients undergoing surgery for acute cholecystitis [5].

Objectives

Laparoscopic cholecystectomy is currently considered the gold standard in the treatment of acute cholecystitis in the elderly and it has been shown to be a safe procedure in patients up to 85 years of age [6]. However, the optimal management of acute cholecystitis in patients older than 90 years is unclear. The objective of this study was to describe the safety of laparoscopic cholecystectomy, focusing on complication and conversion rates in patients older than 90 years, in a private hospital of a developing country.

Methods

This retrospective study included patients aged 90 years and older with acute cholecystitis who underwent laparoscopic cholecystectomy in the Hospital Vozandes Hospital Quito-Ecuador between January 2010 and December 2016. The diagnosis of acute cholecystitis and its grade was established by using the Tokyo 2013 criteria [9]. Patients with Grade III cholecystitis, in whom the systemic organ failure was transient and recovered quickly were included in the study. However, those cases when the systemic organ failure was persistent (> 9 days) and underwent percutaneous cholecystectomy were excluded. Moreover, cases with choledocolithiasis and malignant neoplasm of the gallbladder and extrahepatic bile ducts were excluded.
Frequencies, percentages, and mean were reported.

Baseline characteristics

Fifteen patients aged between 90 and 96 years were included. About 53% of patients were male and 60% of patients had ASA III. The mean leukocytes was 29,334 and the mean pre-operative hemoglobin was 14.43 g/L. Grade II cholecystitis was found in 8 (53%) patients, whereas Grade III cholecystitis in 4 (27%). Only 5 (33%) patients had a delayed surgery (surgery performed after 7 days). This was needed to stabilize these patients.

Results

Table 1. General characteristics

Variables	
Overall population, n (%)	15 (100)
Age, mean (years)	92.3
Sex, n (%)	
Female	7 (47)
Male	8 (53)
Comorbidities, n (%)	
Cardiovascular disease	9 (60)
Pulmonary disease	4 (27)
Chronic renal insufficiency	0 (0)
Diabetes	2 (13)
Pre-operative test, mean	
Leukocytes (x10 9/ml)	29 334
Hemoglobin (g/L)	14.42
ASA, n (%)	
II	3 (20)
III	9 (60)
IV	3 (20)
Cholecystitis severity, n (%)	
I	3 (20)
II	8 (53)
III	4 (27)
Time between diagnosis and surgery, days	
< 7 days	10 (67)
> 7 days	5 (33)
Operative time, mean (min)	98.3
Conversion, n (%)	
Yes	2 (13)
No	13 (87)
Reason for conversion, n (%)	
Inability to create pneumoperitoneum	0 (0)
Intraoperative bleeding	0 (0)
Improper display of structures	2 (13)
Post-operative complications, n (%)	
Hypovolemic shock	2 (13)
Delirium	1 (7)
Mortality	0 (0)
Length of hospital stay, mean (days)	7.2

Table 2. Characteristics stratified by cholescystitis severity

Variables	Delay of surgery		ASA score			Comorbidities				Conversion		Post-operative complications	
Cholecystitis severity	< 7 days (n)	> 7 days (n)	II (n)	III (n)	IV (n)	Cardiovascular disease (n)	Pulmonary disease (n)	Chronic kidney disease (n)	Diabetes (n)	Yes (n)	No (n)	Yes (n)	No(n)
I	3	0	1	2	0	3	1	0	1	0	3	0	3
II	5	3	2	6	0	5	1	0	2	2	6	2	6
III	2	2	0	1	3	3	2	1	0	0	4	1	3
Total	10	5	3	9	3	11	4	1	3	2	13	3	12

References

1. Irojah B, Bell T, Grim R, Martin J, Ahuja V. Are they too old for surgery ?Safety of cholecystectomy in superelderly patients (≥Age 90). Perm J. 2017;21:16-23.
2. Pan American Health Organization. Ecuador. Available from:https://www.paho.org/salud-en-las-americas-2017/?post_t_es=ecuador. [Last accessed on 2020 Mar 04].
3. Ekici U, Yılmaz S, Tatlıf. Comparative analysis of laparoscopic cholecystectomy performed in the elderly and younger patients:should we abstain from laparoscopic cholecystectomy in the elderly?Cureus. 2018;10:e2888.
4. Wiggins T, Markar SR, Mackenzie H, Jamel S, Askari A, Faiz O, et al. Evolution in the management of acute cholecystitis in the elderly :population-based cohort study. Surg Endosc. 2018;32:4078-86.
5. Van Heesewijk AE, Lammerts RG, Haveman J, Meerdink M, Van Leeuwen BL, Pol RA. Outcome after cholecystectomy in the elderly. Am J Surg. 2018;218:368-73.
6. De la Serna S, Ruano A, Pérez-Jiménez A, Rojo M, Avellana R, García-Botella A, et al. Safety and feasibility of cholecystectomy in octogenarians. Analysis of a single center series of 316 patients. HPB (Oxford). 2019;21:1570-6.

Results

There were only three post-operative complications: hypovolemic shock secondary to bleeding that stop without reoperation in 2 patients (13%) and delirium in 1 patient (7%). The conversion rate of laparoscopic cholecystectomy to open surgery was 13% (2 patients). The reason for conversion was the impossibility of visualizing the anatomical structures and obtaining an adequate critical view of safety due to gallbladder phlegmon in two patients. There were no cases of inability to create pneumoperitoneum. The mean surgical time was 98.3 min. Finally, all patients were discharged after a mean length of hospital stay of 7.2 days.

Conclusions

Cholecystectomy is the most common general surgery procedure performed in elderly patients and the choice of therapeutic options should not be limited either by the age per se, or by the disease severity. Based on recent advances in laparoscopic techniques, perioperative care improvement and based on the results obtained in this study, we believe that laparoscopic cholecystectomy is a valid option in patients over 90 years of age due to its relatively low rate of complications and conversion. Larger studies should evaluate this approach, as the population's life expectancy is increasing.

@eddlin
eddypa95@gmail.com