



12-1-2021

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Mahmoud Mohamed

General Surgery, Sharm ElShiekh International Hospital, South Sinai, Egypt, abo.mansour20@gmail.com

Mohamed Abdel-Maksoud

General Surgery, Faculty of Medicine, Al-Azhar University, Cairo, Egypt,

moh.arafatabdmsksoud@gmail.com

Mohamed El-Kaseer

General Surgery, Faculty of Medicine, Al-Azhar University, Cairo, Egypt, dr.mohamedelkaseer@gmail.com

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How to Cite This Article

Mohamed, Mahmoud; Abdel-Maksoud, Mohamed; and El-Kaseer, Mohamed (2021) "Acute cholecystitis in elderly patients; Management and outcome," *Al-Azhar International Medical Journal*: Vol. 2: Iss. 12, Article 11.

DOI: <https://doi.org/10.21608/aimj.2021.99525.1593>

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Acute cholecystitis in elderly patients: Management and outcome

Mahmoud Mohamed Mohamed Mansour^{1*} M.B.B.CH, Mohammed Arafat Abdel-Maksoud² MD, Mohammed Hassan EL-Kaseer² MD

*Corresponding Author:

Mahmoud Mohamed Mohamed Mansour
abo.mansour20@gmail.com

Received for publication October 07, 2021; Accepted December 25, 2021; Published online December 25, 2021.

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doi: 10.21608/aimj.2021.99525.1593

¹Risedent of General Surgery Department, Sharm El-Sheikh International Hospital, Egypt.

²General Surgery Department, Faculty of Medicine, Al-Azhar University Cairo, Egypt.

ABSTRACT

Background: The most prevalent consequence of cholelithiasis is acute cholecystitis (AC), which is also one of the most common diseases needing emergency surgery in the elderly.

Aim of the work: to assess the characteristics, management, results, and danger factors for complications of acute cholecystitis in the elderly patient. Furthermore, proof of our current management strategy or recommendations for its modification was sought.

Patients and methods: Twenty patients over sixty-five years old with acute cholecystitis were submitted to elective laparoscopic cholecystectomy at Al-Azhar University hospitals. Sixteen of them were females (80%) and four were males (20%).

Results: The mean operative time for all nineteen patients undergoing successful laparoscopic cholecystectomy was 82 minutes, Complications developed in three cases of laparoscopic cholecystectomy. These complications were: Operative bleeding: occurred in two cases. Bile leaking: occurred in one case.

Conclusion: Although delayed laparoscopic cholecystectomy is linked with greater intraoperative and postoperative complications than early intervention, surgeons should favor early laparoscopic cholecystectomy for the treatment of acute cholecystitis due to the benefit of a shorter hospital stay.

Keywords: Cholecystitis; Intraoperative; Laparoscopic Cholecystectomy; Cholelithiasis; Elderly.

Disclosure: The authors have no financial interest to declare in relation to the content of this article. The Article Processing Charge was paid for by the authors.
Authorship: All authors have a substantial contribution to the article.

INTRODUCTION

Acute cholecystitis (AC) is a frequent disease that accounts for around one-third of all surgical ward emergency admissions .

Cholelithiasis, which affects 10% to 15% of the general population, is linked to more than 90% of the cases .

Gallstones and acute cholecystitis are significantly linked to age, according to previous research.⁸

Up to 20–40% of asymptomatic individuals with gallstones may ultimately develop symptoms (annual incidence 1–3%), and AC was the initial symptomatic manifestation of the illness in 10–15 percent of patients.¹⁵

It's reasonable that acute cholecystitis is becoming one of the most common reasons for emergency surgery, given the aging of the population and the increasing incidence of gallstones in older people .

The elderly are at a higher risk of developing acute cholecystitis, with up to 6% of older individuals developing severe acute cholecystitis.⁶

The gold standard for the treatment of acute calculous cholecystitis is laparoscopic cholecystectomy, with early intervention preferred.¹

Disease features, co-morbidities, and low functional status, on the other hand, enhance the risks associated with surgical intervention in the elderly, potentially leading to higher morbidity and death .

The majority of research classifies patients as elderly if they are 65 or 75 years old, but these age ranges may not be the most suitable from a practical standpoint.³

However, the best way to treat acute cholecystitis in individuals above the age of 85 remains unclear .

Early laparoscopic cholecystectomy seems to be effective in older individuals, according to certain research.¹⁴

The goal of this training was to gauge the characteristics, management, results, and risk issues for snags of acute cholecystitis in old enduring. Still, proof of our current management strategy or recommendations for its modification was sought.

PATIENTS AND METHODS

Twenty patients over sixty-five years old with acute cholecystitis were submitted to elective laparoscopic cholecystectomy at Al-Azher University hospitals. Sixteen of them were females (80%) and four were males (20%).

Every patient submitted to Full history taking with special attention to fatty dyspepsia, Jaundice, and fever, thorough clinical examination, general and local. Routine laboratory investigations: Complete blood picture & blood sugar, renal function tests, and liver function tests

Radiological investigations: Abdominal ultra-sound was essential for diagnosis; special attention was given to the following: Size of the gallbladder, presence of stones, the wall thickness of gallbladder, character of the containing bile .

Preoperative preparation: Patients were permitted nothing by mouth for 12 hours before surgery and were given: Intravenous fluids for rehydration and correction of electrolyte imbalance when present, broad-spectrum antibiotics and antispasmodics, antipyretics, and anti-inflammatory drugs. A urinary catheter and a nasogastric tube were inserted in patients having repeated vomiting or abdominal distention or shortly before anesthesia. The various treatment options were explained to the patient including conservative treatment and laparoscopic cholecystectomy with the possibility of conversion to open surgery. Monitoring during anesthesia included electrocardiography, blood pressure, and urine output.

Positioning of the patient and surgical team (North American positioning): The patient lies in the prone site with pins square spread, the surgeon was standing to the left of the tolerant, the chief junior was standing to the right of the patient to manipulate the gallbladder and run contact, a laparoscopic video camera operator was standing to the left of the surgeon.

Postoperative care: Nasogastric tube and urinary catheter were usually removed in the recovery room. Intravenous antibiotics were continued postoperatively for 2-5 days depending on the clinical course of the patient. All patients were given pain killer medication as needed. Oral fluids were given on return of bowel sounds. Diet was given on passing stools. Drains were removed within 48 hours and ultrasonography was done before removal.

Postoperative follow-up: All patients stood exposed for tail awake at one and three months after the laparoscopic cholecystectomy. This follow-up included abdominal ultrasound, liver function tests, and also the preoperative investigations were repeated.

Statistical analysis: The data were entered into a computer and statistically evaluated using the SPSS

27.0 software (Statistical Package for Social Science .)

Frequencies and relative percentages were used to depict qualitative data .

The difference between qualitative variables was calculated using the Chi-square test .

In data that was not regularly distributed, the Kruskal Wallis test was employed to determine the difference between quantitative variables in more than two groups .

In non-normally distributed data, the Mann-Whitney test was employed to determine the difference between quantitative variables in two groups .

To determine the correlation between quantitative variables, Spearman's correlation coefficient is employed.

RESULTS

This study included twenty patients over sixty-five years old with confirmed acute cholecystitis. Sixteen of them were females (80%) and four were males (20%). Most of the 55% had grade II, 30% had grade I, and 15% had grade III. All patients were admitted to the Emergency Unit of the Department of Surgery, Al-Azher University Hospitals. A total of twenty patients were subjected to laparoscopic cholecystectomy. Table (1)

Diagnosis depended primarily upon clinical presentation, where upper right abdominal pain was the dominant complaint. Table (2)

The mean operative time for all nineteen patients undergoing successful laparoscopic cholecystectomy was 82 minutes. Table (3)

Complications developed in three cases of laparoscopic cholecystectomy. These complications were: Operative bleeding: occurred in two cases. The first case was bleeding from the liver bed during dissection of the gallbladder, it was controlled by diathermy. The second case was due to a partial tear of the cystic artery during its dissection which was controlled by proximal clipping of the artery. Bile leaking: occurred in one case. This was due to injury of the gallbladder with cautery during its dissection. The escaping bile was aspirated and adequate lavage was performed at the end of the operation. Table (4)

A drain was left for 24h in all patients (100%) of all patients. The cruel span of visits in the clinic was 2.2 days (range: 1-5 days). Table (5)

There was a greater risk of severe complications in both groups in patients with higher age and severe AC grade. In addition, medical diseases were allied by an enlarged peril of any type of complications. Also, delayed operation showed more risk for complications. Table (6)

	Number	%
Males	4	20%
Females	16	80%
AC grade		
Grade I	6	30%
Grade II	11	55%
Grade III	3	15%

Table 1: Shows sex distribution of the cases.

Clinical presentation	No	%
Symptoms:-		
1- Pain in the right upper abdomen.	17	85%
2- Diffuse abdominal pain.	3	15%
3- Nausea and/or vomiting.	18	90%
4- Fever (>38 C).	18	90%
Signs:-		
1- Tenderness in the right upper abdomen.	20	100%
2- Positive Murphy's sign.	15	75%
3- Palpable gallbladder.	5	25%
4- Clinical jaundice.	-	-
5- Scars of previous operations	4	20%

Table 2: The clinical presentation of our patients.

IOP time	Minutes
Mean±SD	82±10.1

Table 3: Mean intraoperative time of laparoscopic cholecystectomy.

Complication	Number	%
Operative bleeding	2	10%
Bile leakage	1	5%
Total	3	15%

Table 4: Complications of laparoscopic cholecystectomy.

	(n=20)
Mean length of stay	2.2±1.1 (1-5)
Drain left for 24h	20(100%)

Table 5: Post-operative results.

	OR (CI 95%)	P-value
Age	2.62(2.2-2.8)	0.021
Gender	1.2(0.82-1.7)	0.413
AC grade	3.23(3.1-4.2)	0.003
Previous operations	1.09(0.61-1.1)	0.524
Medical diseases	4.25(4.1-5.9)	0.002
Early versus delayed operation	5.4(5.0-7.6)	<0.001

Table 6: Binary logistic regression analysis for complications.

DISCUSSION

The most prevalent consequence of cholelithiasis is acute cholecystitis (AC), which is also one of the most common diseases needing emergency surgery in the elderly.

Cholelithiasis is responsible for 90–95 percent of all cases of AC, with acalculous cholecystitis accounting for the remaining 5%–10%.

Up to 20–40% of asymptomatic individuals with gallstones may ultimately develop symptoms (annual incidence 1–3%), and AC was the initial symptomatic manifestation of the illness in 10–15 percent of patients.⁵

With more laparoscopic expertise, surgeons began attempting early laparoscopic cholecystectomy for acute cholecystitis.

However, only a small percentage of surgeons undertake early laparoscopic cholecystectomy.

Furthermore, the precise timing, possible advantages, and cost-effectiveness of laparoscopic cholecystectomy in the treatment of acutely inflamed gallbladder remain unknown and disputed.¹²

Compared four timing groups of laparoscopic cholecystectomy (72 hours, 4–14 days, 3–6 weeks, and >6 weeks after onset of symptoms) in a retrospective analysis of 100 patients and found that the best timing for laparoscopic cholecystectomy for

acute cholecystitis is within 72 hours, which provides the shortest total hospital stay compared to operations performed later.¹¹

The purpose of this research was to assess the characteristics, management, effects, and peril aspects for snags of acute cholecystitis in the elderly patient. Furthermore, validation of our current management strategy or recommendations for its modification

In this research, we looked at the clinical features, therapy, and results of 20 patients with AC who were 65 years or older.

In our study 100% of patients presented with abdominal pain, 90% presented with fever and vomiting.

Abdominal pain is the most common symptom of AC, with 72–93 percent of patients experiencing right hypochondrial pain and epigastric discomfort at any age.

In research focusing on older individuals, the same range of 73–98 percent typical right hypochondrial and epigastric discomfort was found.¹³

Acute cholecystitis has been linked to atypical discomfort or no pain at all in 12 percent and 5% of older individuals, respectively.⁹

In two investigations, vomiting was observed in 38–48 percent of older individuals.^{9, 13}

The rate of positive Murphy's sign among older individuals was found to be 75% in one research.

Murphy's sign had a sensitivity of 0.48, a specificity of 0.79, and a positive predictive value of 0.58 in the diagnosis of acute cholecystitis in the elderly, according to another research.¹³

Some writers consider all patients above the age of 80 to be "elderly" or "very elderly," thus they are considered high-risk patients.¹⁰

The Tokyo guidelines do not consider senior age to be a risk factor in and of it, but they do highlight the fact that older patients are more likely to develop severe AC.¹⁶

In our study, there was a greater peril of severe snags in patients by higher age than severe AC grade. In addition, medical diseases stood allied with a bigger danger of any type of complications. Also, delayed operation showed more risk for complications. As previously shown, we believe that laparoscopic cholecystectomy may be successfully done in many patients aged up to 85 years.

The best way to treat AC in people beyond the age of 85, on the other hand, is less apparent.

Some research indicates that early laparoscopic cholecystectomy produces excellent outcomes in older individuals; however, the majority of these studies involved patients under the age of 65, with just a few studies focusing on patients beyond the age of 65.

Even in those few studies, the majority of patients were between the ages of 80 and 85, with just a few

patients older than 85, and there was no particular study of the >85-year-old group.

The goal of this research was to examine the features, management, and results of AC in very old individuals; based on the hypothesis that cholecystectomy is the optimal therapy for CA when feasible.

The major risk factor in AC, according to Escartn et al. (2019), was the severity of the disease, not the age.

There were no significant changes in clinical features or outcomes between the two age groups, according to the research.

Multivariate analysis on 325 patients with acute cholecystitis and found the following independent factors that correlate with cholecystostomy: advanced age over 65 years ($p = 0.001$), a history of abdominal surgery ($p = 0.023$), a higher ASA score ($p = 0.015$), white blood cell (WBC) count ($p = 0.023$), and C-reactive protein ($p = 0.023$).⁴

Even if some of the studies covered nonacute situations or did not include Grade III AC, the findings in terms of morbidity and mortality were similar to previously published data on cholecystectomy in octogenarians.⁷

This research has several flaws, such as small sample size and the lack of prospective data (follow-up for 24 months).

CONCLUSION

In conclusion, although delayed laparoscopic cholecystectomy is linked with greater intraoperative and postoperative complications than early intervention, surgeons should favor early laparoscopic cholecystectomy for the treatment of acute cholecystitis due to the benefit of a shorter hospital stay.

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