

Can laparoscopic cholecystectomy be safely performed in the elderly?



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Can laparoscopic cholecystectomy be safely performed in the elderly?

AIM: *To assess the suitability of laparoscopic cholecystectomy in elderly patients, although early reports have questioned the efficacy of this procedure in that patient group.*

MATERIAL OF STUDY: *Retrospective study evaluating the medical records of the elderly patients who underwent laparoscopic cholecystectomy in our surgical unit. Data included age and gender, American Society of Anesthesiologists (ASA) score, comorbid illness, prior abdominal surgery, presentation, operative time, conversion rate, postoperative morbidity, and mortality rates and length of hospital stay.*

RESULTS: *Fifty consecutive patients age 70 or older who underwent laparoscopic cholecystectomy were studied. Postoperative complications occurred in five patients.*

DISCUSSION: *Many Studies have shown that the incidence of complicated gallstone disease in the elderly is higher when compared with that of younger patients and gallbladder disease is particularly virulent in the elderly, with high rate of acute cholecystitis, biliary tract disease, increased morbidity, and prolonged hospital stay. This poor outcome has been attributed to the presence of severe co-morbid factors associated with the aging process. Compared to open cholecystectomy, laparoscopic cholecystectomy may cause less postoperative depression of respiratory function and cell-mediated immunity. In our study perioperative mortality rate was 0%.*

CONCLUSIONS: *Laparoscopic cholecystectomy in elderly patients is a relatively safe procedure that can be accomplished with acceptable low morbidity. In this series of geriatric patients, there was no evidence of any increased risk for conversion to an open cholecystectomy, delayed recovery, or prolonged hospitalization.*

KEY WORDS: Comorbid condition, Elderly patients, Laparoscopic cholecystectomy.

Introduction

The population of elderly has increased during the last century and a high percentage of persons in their 70s have been shown to have gallstone disease. The 20% of

the abdominal surgical procedures performed in those older than 80 years are hepatobiliary^{1,2}. Although the prevalence of gallstone formation increases with age and many studies have examined the results of laparoscopic cholecystectomy in elderly patients³⁻⁶, the treatment of gallstone disease in this age group is a challenging⁷⁻⁹. This group of patients has in fact an incidence up to 55% of complicated gallstone disease, such as acute cholecystitis, jaundice, choledocholithiasis, cholangitis, and gallstone pancreatitis^{4,10}. Both acute cholecystitis and old age are significant risk factors for mortality and prolonged hospital stay after open cholecystectomy^{11,12}. Further, elderly patients frequently suffer from significant comorbid diseases and limited cardiopulmonary reserves

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that may contribute to a complicated perioperative course and increase postoperative complications rate. Acute biliary disease in the elderly was associated with a considerable increase in operative morbidity and mortality, when compared with non elderly patients¹³⁻¹⁵.

Laparoscopic cholecystectomy is currently the procedure of choice for managing gallstone disease and were demonstrated the physiological benefits and positive socioeconomic effects over the open procedure.

Laparoscopic cholecystectomy is considered less traumatic than open cholecystectomy, and the many advantages of the laparoscopic procedure include less patient discomfort, early hospital discharge, early return to a normal lifestyle, and lower cost^{6,14,16,17}. Many studies have demonstrated the applicability and advantages of the laparoscopic cholecystectomy also in the geriatric population with low rates of morbidity and mortality^{1-3,18,19} whereas open cholecystectomy have consistently demonstrated higher rates of morbidity and mortality and greater lengths of hospital stay than the general population^{11,18,19}. The purpose of this study was to evaluate the outcome of laparoscopic cholecystectomy in patients age 70 and older with gallstone disease. We reviewed our experience with the laparoscopic procedure underlining the results of laparoscopic cholecystectomy in the geriatric population in term of mortality and complication rates.

Methods

We conducted a retrospective study evaluating the medical records of fifty consecutive patients age 70 or older who underwent laparoscopic cholecystectomy at the Department of Surgery, Transplantation and Advanced Technologies – Surgery Oncology Unit, University Hospital of Catania. Data included age and gender, ASA score, comorbid illness, prior abdominal surgery, presentation, operative time, conversion rate and reasons for conversion, postoperative morbidity and mortality rates, pathologic diagnosis, and length of hospital stay. Patients were classified as having complicated gallstone disease (acute cholecystitis, biliary pancreatitis, obstructive jaundice, and cholangitis) or uncomplicated (biliary pain). Ultrasonography evidence of a dilated common duct or presence of common duct stones, serum elevations in alkaline phosphatase, transaminase, or bilirubin were indications for preoperative magnetic resonance cholangiography. Preoperative endoscopic retrograde cholangiopancreatography (ERCP) with removal of possible common duct stones was performed in all patients suspected of having choledocholithiasis. The timing for LC in patients with complicated gallstone disease was 24–72 hours from admission. Patients with acute pancreatitis related to gallstone disease underwent surgery after resolution of clinical and biochemical symptoms. The supportive treatment during the acute phase consisted of

intravenous infusion, antibiotics, and nasogastric suction when necessary. Early surgery was defined as laparoscopic cholecystectomy during the initial hospitalization usually within 5 days, whereas patients undergoing delayed surgery were treated conservatively, discharged, and readmitted for elective operation. Patients were included if surgery was performed primarily for symptomatic gallstone disease and excluded if cholecystectomy was performed incidentally or secondary to another procedure. Laparoscopic cholecystectomy was performed using a standard four-trocars technique. An open technique was used in all cases to introduce the subumbilical cannula as previously described by our group. Dissection of the gallbladder from the liver was accomplished using monopolar electrocautery. Intraoperative cholangiography was performed selectively to assist in defining the anatomy or intraoperative abnormalities. A closed suction drainage was used in all procedures.

Results

Fifty patients with a mean age of 74.9 years (range 70 to 91 years) were evaluated. Eleven patients (22%) were age 80 or older. Nineteen (38%) were males and thirty-one (62%) were females.

All patients in this series of geriatric patients were symptomatic from their gallbladder disease.

A variety of the classical symptoms of cholecystitis or cholelithiasis, consisting of epigastric pain, fatty food intolerance, nausea and emesis, right upper quadrant pain radiating to the back, biliary colic, fever, dyspepsia, were present in all patients in this series. The indications for surgery included biliary colic in 36 patients (72%), acute cholecystitis in 10 (20%) and acute pancreatitis in 4 (8%). Gallstones were present in all patients. Comorbid conditions included hypertension, cardiac disease, peripheral vascular disease, and diabetes mellitus. Twelve patients (24%) had no comorbid disease. The patients were evaluated according to the ASA classification. Thirty-one patients were classified as either class I or II, sixteen patients were classified as class III, and three were classified as class IV. ERCP was performed preoperatively in one patients who had common bile duct stones that required sphincterotomy and stone extraction. Operative time in this geriatric series of patients ranged from 45 minutes to 2 hours. Conversion to open cholecystectomy was required in three of 50 patients (6%) due to their distorted anatomy (intrahepatic gallbladder, severe acute inflammation) with inability to safely dissect the cystic duct and cystic artery or suspected cancer of the gallbladder. Five patients (10%) previously underwent abdominal surgery (eight to thirty year before) and no one of this was converted to the open procedure. Postoperative complications occurred in five patients. Two of the five complications were related directly to the surgical procedure itself including one patient with

a postoperative cystic duct leak which was treated successfully with an ERCP and sphincterotomy. One patient had a postoperative bleeding from a trocar-site requiring reoperation. Medical complications that were not directly related to the procedure itself included two patients who experienced a postoperative respiratory complication owing to the relative poor condition of the respiratory system and one patient with postoperative myocardial infarction that was admitted to the cardiac intensive care unit and was discharged from the hospital after 11 days. The mean postoperative hospital stay was 3 days (range 2-11). A few patients required more than 48 hours postoperative hospitalization. The perioperative mortality rate was 0%.

Discussion

The incidence of cholecystitis and cholelithiasis in the geriatric population over 65 years of age increases linearly ^{4,20}. In addition, elderly patients are often at a greater operative risk because of associated comorbidities. Although the definition for "elderly" is quite arbitrary for the population aged 65 years, this cutoff point has been set in the scientific literature. However in our series we considered the record of patients age 70 or older. Many Studies have shown that the incidence of complicated gallstone disease in the elderly is higher when compared with that of younger patients and gallbladder disease is particularly virulent in the elderly, with high rate of acute cholecystitis, biliary tract disease, increased morbidity, and prolonged hospital stay ^{3,6,12}. This poor outcome has been attributed to the presence of severe co-morbid factors associated with the aging process ^{4,7,21}. In this study twelve patients (24%) had no comorbid disease and only fourteen (28%) were classified as having complicated gallstone disease. The use of the laparoscopic procedure for removal of the gallbladder has persuaded more patients with cholelithiasis to have the diseased organ removed prior to have a complicated disease. Moreover most symptomatic geriatric patients are amenable to an elective laparoscopic cholecystectomy but are reluctant to have an elective open cholecystectomy. The most important advantage of laparoscopic cholecystectomy in elderly patients may be the associated reduction in morbidity and mortality rates. Laparoscopic cholecystectomy has been shown to minimally affect postoperative cardiorespiratory and muscle performance ²². Compared to open cholecystectomy, laparoscopic cholecystectomy may cause less postoperative depression of respiratory function and cell-mediated immunity ^{12,13,23}. The correlation between age and conversion to open cholecystectomy has been often reported in elective surgery for cholelithiasis as well as in acute cholecystitis ^{6,7,24}. When compared with younger patients, the elderly are more likely to be converted to open cholecystectomy with a reported range from 11% to 22%

^{3,8,25}. Conversion to open cholecystectomy is associated with several factors, such as inexperience of the surgeon, difficulty in resolving the anatomy of the patients due to the presence of adhesions for acute cholecystitis or previous abdominal surgical procedures or when concomitant intraabdominal disease is found. Conversion to open cholecystectomy was performed in 6% of our patients. This rate is lower than in previously reported series ^{1,25,26}. Advanced age was not associated with higher complication rates in our study. The mortality rate was 0%. The morbidity rate of 10% was comparable with that of other studies. The fact that 72% of our patients underwent surgery because of uncomplicated disease and that 62% had an ASA classification of I or II is consistent with the outcomes. Although the current study group was small, we found that laparoscopic cholecystectomy in elderly patients is a relatively safe procedure that can be accomplished with acceptable low morbidity. In this series of geriatric patients, there was no evidence of any increased risk for conversion to an open cholecystectomy, delayed recovery, or prolonged hospitalization. Therefore, LC should be considered and encouraged for this age group of patients with uncomplicated gallstone disease before advanced disease develops. This approach may reduce the rates for complications. As showed in many controlled trial ^{22,27} is in our opinion that low-pressure pneumoperitoneum (8-10 mm Hg) better preserves postoperative respiratory function and may limit respiratory complications in elderly patients. The elderly patients with extensive comorbid disease or who presents with severe and advanced complications of cholelithiasis was more likely to have the surgery scheduled open.

Conclusions

Laparoscopic cholecystectomy in elderly patients is a relatively safe procedure that can be accomplished with acceptable low morbidity. In this series of geriatric patients, there was no evidence of any increased risk for conversion to an open cholecystectomy, delayed recovery, or prolonged hospitalization.

Riassunto

La colecistectomia laparoscopica, grazie ad i suoi ben conosciuti benefici, è oggi considerata il trattamento ottimale per la patologia benigna della colecisti per quanto l'approccio laparoscopico sia stato a volte criticato quando riferito a pazienti anziani. Gli Autori hanno condotto uno studio retrospettivo volto a valutare i risultati ottenuti su una serie di 50 pazienti di età avanzata sottoposti a colecistectomia laparoscopica. I dati analizzati, oltre ad età, sesso, eventuali patologie associate, precedenti trattamenti chirurgici e classificazione ASA, sono stati quelli relativi alla patologia di base:

modalità di presentazione, tempi operatori, tasso di conversione, morbidità postoperatoria e tempo di degenza. I pazienti, di età uguale o superiore a 70 anni, erano tutti affetti da calcolosi della colecisti. I tempi operatori sono stati di 45 – 120 minuti con un tasso di conversione del 6 % (tre pazienti). La degenza ospedaliera media è stata di tre giorni. In conclusione la colecistectomia laparoscopica rappresenta una procedura chirurgica relativamente sicura anche per il paziente anziano. Il nostro studio non ha infatti evidenziato aumento del rischio di conversione, di complicanze e di degenza ospedaliera rispetto a pazienti più giovani. Sono comunque necessari ulteriori puntualizzazioni relative alle effettive controindicazioni della chirurgia laparoscopica nel paziente anziano.

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