

## Laparoscopic Cholecystectomy in the Elderly

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**Aim:** Our aim was to evaluate the rate of laparoscopic surgery in elderly patients with gallstones and to compare it with their younger counterparts. The relation between age and the rate of conversion was also evaluated.

**Materials and Methods:** Medical records of the patients who underwent surgery for gallstones during the last six years were evaluated. Patients were divided into two groups according to their age as below and above 65 years. Age, sex, type of operation and rate of conversion were all recorded for both groups and analyzed.

**Results:** There were 1783 patients aged under 65 years in Group 1 and 318 patients over 65 years in Group 2. The majority of the patients in each group were female. 1916 patients underwent laparoscopic surgery and the remaining 185 patients underwent open surgery. Laparoscopic cholecystectomies were converted to open due to various problems in 151 cases. The conversion rates were 8% vs 10% in Groups 1 and 2, respectively.

**Conclusions:** Although laparoscopic cholecystectomy is performed more often in younger patients, age does not seem to be a predictive factor for either conversion or morbidity; thus, laparoscopy could also be safely used in the elderly.

**Key Words:** Laparoscopic cholecystectomy, elderly, conversion

### Yaşlılarda Laparoskopik Kolesistektomi

**Amaç:** Yaşlılarda safra kesesi taşı nedeni ile uygulanan laparoskopik cerrahi sıklığını ve konversiyon oranlarını gençlerle karşılaştırmalı olarak değerlendirilmesi amaçlandı.

**Yöntem ve Gereç:** Son altı yıl boyunca safra taşı nedeni ile cerrahi uygulanan hastaların tıbbi kayıtları değerlendirildi. Hastalar 65 yaş altı ve 65 yaş üstü olmak üzere iki gruba ayrıldı. Yaş, cins, operasyon tipi ve konversiyon oranları her iki grup için değerlendirildi.

**Bulgular:** I. Grupta yaşları 65 in altında olan 1783, II. Grupta ise yaşları 65 ve üstünde olan 318 hasta vardı. Her iki grup için de hastaların çoğunluğunu kadınlar oluşturmaktaydı. Toplam 1916 hasta laparoskopik, 185 hasta açık teknikte opere edildi. Laparoskopik uygulanan 1916 hastanın 151 inde değişik nedenlerle konversiyon yapıldı. Konversiyon oranları genç grupta %8 , yaşlı grupta %10 olarak bulundu.

**Sonuç:** Laparoskopik kolesistektomi genç hastalarda daha yaygın olarak kullanılmasına rağmen; yaş tek başına ne konversiyon ne de morbititede belirleyici bir faktör gibi gözükmemektedir. Bu nedenle laparoskopik yaşlılıkta da güvenle uygulanabilir.

**Anahtar Sözcükler:** Laparoskopik kolesistektomi, yaşlılık, konversiyon

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### Introduction

Laparoscopic cholecystectomy (LC) is recognized as the gold standard in the current treatment of gallstone diseases (GD). Although the benefits of the laparoscopic approach to gallbladder removal over the open approach are well documented, the procedure is associated with increased biliary tree injuries (1).

Currently, LC has become the first choice in treatment of symptomatic GD in the elderly, especially before the development of severe conditions such as acute cholecystitis or dense adhesions from chronic cholecystitis (2).

The present report is the total experiences of a general surgery department of a teaching hospital during the last six years.

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**Materials and Methods**

The patients who underwent cholecystectomy between 1 January 2001 and 1 October 2006 were evaluated (Table). They all had asymptomatic, symptomatic or complicated GD. Patients were divided into two groups according to their age as below 65 years (Group 1) and 65 years or above (Group 2). There were 1783 patients in Group 1 and 318 patients in Group 2 (Figure1). Patients who had contraindication because of high intraabdominal pressure or severe intraperitoneal adhesions underwent open surgery. The majority of the patients in both groups underwent LC (93% vs 83%). Age alone was not the contraindication for LC. Four-trocar site standard laparoscopic technique was used in all patients. All patients were evaluated preoperatively by ultrasonography. Ultrasonographic evidence of dilated bile duct or presence of bile duct stones, and serum elevations in alkaline phosphatase, transaminase, or bilirubin levels were all indications for preoperative endoscopic retrograde cholangiopancreatography.

**Results**

There were a total of 2101 (546 M) patients, with a mean age (range) of 50 (18-80) years. 1916 (91%) patients underwent laparoscopic surgery and the remaining 185 (9%) patients underwent open surgery. One hundred fifty-one of 1916 patients having LC were converted to open technique due to various problems (Figure 2). These problems were classified into four groups as anatomic difficulties, hemorrhage, bile duct injuries and other injuries (Figure 3). Anatomic difficulties were the commonest reason for the conversion and in most of those cases, visualization of Calot triangle was not adequate. There were five bile duct injuries in Group 2, including three D type, one E1 type and one E2 type according to Strasberg-Bismuth classification (1). These were all treated during the same procedure either by hepaticojejunostomy, or T tube drainage or primary suture. Other injuries were associated with the wall of the visceral organs, including serosal layer to whole thickness. They were repaired by primary sutures in the

Table. Distribution of cholecystectomies.

	Group 1 < 65 years		Group 2 ≥ 65 years	
	LC	OC	LC	OC
N (%)	1651 (93)	132	265 (83)	53
Age	43 (18-64)		69 (65-80)	
Sex (M/F)	383/1268	58/74	88/177	17/36
Conversion Rate (%)	124 (8)		27 (10)	

LC-Laparoscopic cholecystectomy. OC: Open cholecystectomy.

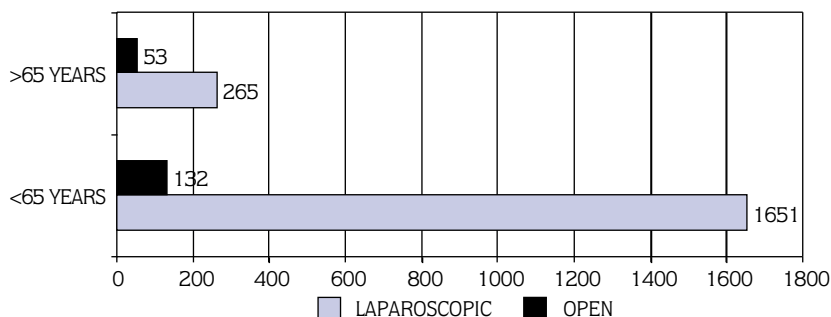


Figure 1. Cholecystectomies performed in the last six years.

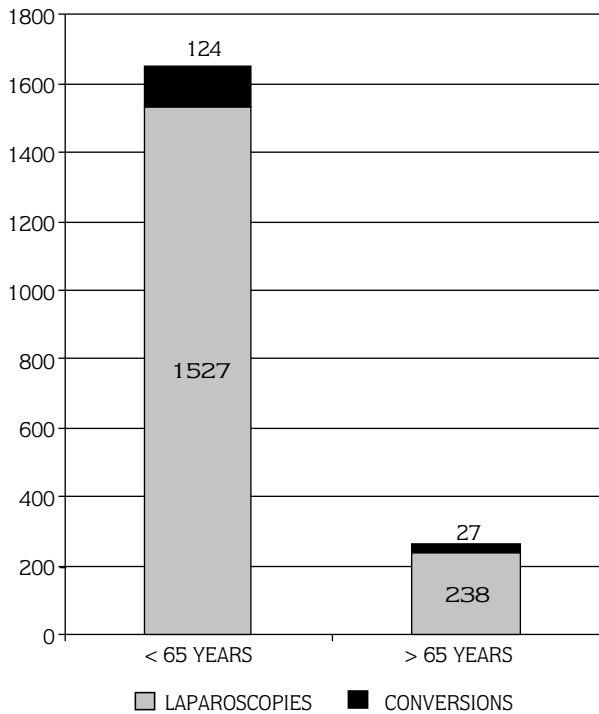


Figure 2. Conversion rates.

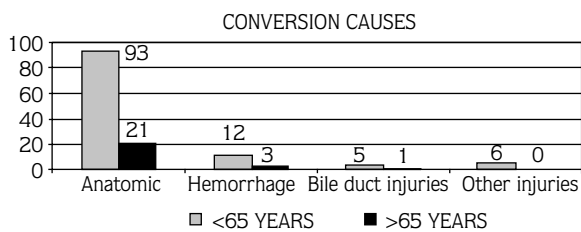


Figure 3. Reasons for conversion in each group.

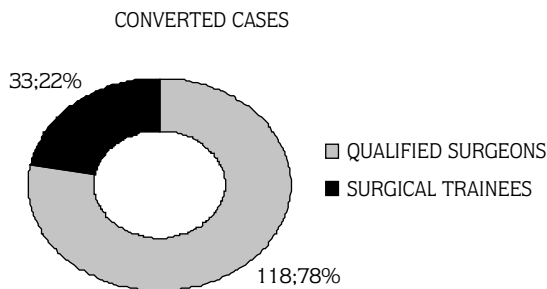


Figure 4. Ratio of procedures in converted cases performed by qualified surgeons versus surgical trainees.

same session. Procedures in the converted cases were performed by surgical trainees in 22% (n:33) and by qualified surgeons in 78% (n:118) (Figure 4). Hospital stay was 1 (1-2) day/s for laparoscopy and 3 (2-7) days for open surgery. There was no hospital mortality.

**Discussion**

Emergency surgery on older patients with gallstones may have fatal outcome due to increased comorbidities and decreased functional reserve. Thus, elective surgery with acceptable morbidity and mortality should be the preferred choice over emergency procedures (2). It is suggested that conversion rates are higher in elderly patients due to increased inflammation and fibrosis with adhesions (3,4). In the present study, hospital stay was minimally prolonged with conversion to open surgery, as reported in the literature (5,6). As hospital stay was concerned, there was no significant difference between open surgery and converted cases. Although male gender is known as a difficulty factor in cholecystectomies, the outcome in our series did not support this (7). We found that the most common reasons were anatomic difficulties, bleeding, and bile duct and other adjacent injuries in both groups. The conversion rates were somehow higher in the qualified surgeons group (78%) than in the surgeons in training (22%). This might be explained by the fact that the most difficult cases are assigned to the senior surgeons.

Despite underlying comorbidities, individuals older than 65 years tolerate laparoscopic procedures extremely well. The complication rate and hospital stay were lower than in open procedures. Currently, LC for elderly patients seems to be a feasible and reliable technique (8-12).

In conclusion, although laparoscopic cholecystectomy is performed more often in younger patients, age does not seem to be a predictive factor for either conversion or morbidity; thus, laparoscopy could also be safely used in the elderly. The higher conversion rates observed among the qualified surgeons might be attributed to the fact that the most difficult cases are operated by the most senior surgeons.

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