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## Cholecystectomy: standard, mini, laparoscopic A comparative study

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### Abstract

#### Background:

Cholecystitis and gallstone formations are the most common disorders affecting biliary system. Therapeutic removal of gall bladder had evolved from traditional open cholecystectomy to advanced minimally invasive laparoscopic surgery, in addition to mini-cholecystectomy for many purposes, and this study tried to make a comparative study for these three methods of cholecystectomy.

#### Patients and methods:

Over two years' time period, one hundred patient's already undergone cholecystectomy had been studied. Their cholecystectomy procedure varied according to clinical and scientific bases in to: open, mini and laparoscopic (11, 70, and 19 patients respectively). The morbidity, mortality, length of hospital stay, drain insertion, surgical site infections and time between surgeries to oral intake initiation were questioned.

#### Results:

Both Surgical site infection and adynamic ileus were observed in four patients with open surgery (two for each), while none in those undergoing laparoscopic and mini surgery. Postoperatively, time to start oral feeding and withdrawing drain in the standard open surgery were nearly twice in comparison with laparoscopic and mini surgery group. Similarly, time for hospital staying in patients with standard open cholecystectomy was more prolonged than laparoscopic and mini laparotomy method (94 vs. 70 and 60 hours respectively). Only one patient with mini laparotomy needs conversion to classical open cholecystectomy.

#### Conclusions

Surgical recovery and hospital staying time were better in the laparoscopic and mini-laparotomy cholecystectomy in comparison with standard open method. However, all general surgeons who operate laparoscopic cholecystectomy must be familiar with mini laparotomy cholecystectomy and open (standard) cholecystectomy in case of an urgent situation.

**Keywords:** Cholecystectomy, open, mini-open, laparoscopic, Kirkuk.

### طرق رفع الكيس الصفراء جراحياً

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#### الخلاصة

الدراسة تبحث عن الطرق الجراحية لاستئصال كيس الصفراء الملتهب عندما تستدعي الضرورة لرفع الكيس وتكون العملية الجراحية إما بشق البطن أو باستعمال ناظور البطن وقد قمنا بمقارنة بين شق البطن المتبع (الكلاسيكي) وشق البطن بجرح اصغر من المتبع وكذلك الاستئصال باستعمال جهاز الناظور وتلخص البحث بان عملية ناظور البطن لاستئصال الكيس تبقى الطريقة الأمثل بأيدي من تدرب من الجراحين على استعمال الناظور وللمرضى الذين من الممكن استعمال الناظور لإجراء العملية لهم .

**الكلمات الدالة:** عملية ازالة المرارة، مفتوح، فتحة صغيرة، ناظور البطن، كركوك.

## **Introduction**

Cholecystitis and gallstone formations are the most common disorders affecting the biliary system. After invention of laparoscopic surgery in early 1980's and its intense usage in cholecystectomy brought a new and fresh insight to the cholecystectomy preferences. The incidence of open cholecystectomies decreased year by year as the surgeons become more familiar to laparoscopic cholecystectomy. However in some cases conversion to open surgery is needed and that is the reason why the surgeons must be well trained regarding open cholecystectomy so that he can deal with any complications happened, whether during open or laparoscopic procedure. [1-5]

## **Patients and Methods**

Overall 100 patients that 93 of them were female (93 %) and 7 patients (7 %) were male, have undergone cholecystectomy between December 1999 and January 2002. Mean age was 52 years (22-84 years). 19 patients underwent laparoscopic cholecystectomy, 70 patients underwent mini laparotomy cholecystectomy while 11 patients were treated with standart open cholecystectomy. The morbidity, mortality, length of hospital stay, drain insertion, surgical site infections and time between surgery to oral intake initiation were questioned. All patients were operated by a single surgeon.

## **Results**

There were no significant morbidities during and after the surgery. There was only one patient in mini laparotomy cholecystectomy group who suffered from bleeding and was converted to classical open cholecystectomy for proper control of the bleeding vessel. In the open cholecystectomy group there were 2 patients who suffered from surgical site infection and post operative dynamic ileus. There was no mortality in any group. The mean hospital stay in laparoscopic group was 60 hours, 70 hours in mini laparotomy group whereas it was 94 hours in open cholecystectomy group. All patients except 19 in mini laparotomy group had drains. Mean drain withdrawal time was 24 hours, 20 hours and 46 hours consecutively in laparoscopic, mini laparotomy and open cholecystectomy groups. Time between surgery to oral intake initiation were similar in laparoscopic and mini laparotomy groups (8 to 10 hours) but it was 24 hours in open cholecystectomy group.

**Table 1: the compression between three techniques of operators**

	Laparoscopic cholecystectomy	Mini laparotomy cholecystectomy	Open (standard) cholecystectomy
Mortality	-	-	-
Surgical site infection	-	-	2 pt
Aydynamic ileus	-	-	2 pts
Drain	19 pts	51 pts	11 pts
Drain withdrawal	24 hours	20 hours	46 hours
Oral intake initiation	8 hours	10 hours	24 hours

### Discussion

two procedures are utilized surgically to remove the gallbladder : [open cholecystectomy](#) and [laparoscopic cholecystectomy](#). The laparoscopic method is utilized more frequently, but some patients, particularly if they are obese, have a bleeding disorder, or pregnant and near the due date, or have extensive scarring from previous abdominal surgeries may not be good candidates. The choice of procedure is made on an individual basis

Laparoscopic cholecystectomy was first introduced worldwide during the late 1980s and it was indicated for a lot number of case needs removal of diseased gallbladder. nowadays most contraindications to laparoscopic cholecystectomy are relative such as acute cholecystitis, stones in common bile duct, obesity. pregnancy is not a contraindication with appropriate precautions only suspected gallbladder cancer is the strongest a contraindication because of the risk of dissemination. Cholecystectomy is usually recommended for symptomatic patients and in asymptomatic patients in certain circumstances such as diabetic patients. chronic, renal failure if they need renal transplantation, and inpatients on long term total parenteral nutrition. [6-8]

Cholecystectomy is one of the most common operations in adults. The gold standard method for this operation is laparoscopic cholecystectomy as the shorter hospital stay and recovery rates. Our aim was to remember the other 2 techniques for removing the gallbladder and show the comparative analysis of these 3 operative techniques in different aspects.

### Conclusion

In the laparoscopy era, all general surgeons who operate laparoscopic cholecystectomy must be familiar with mini laparotomy cholecystectomy and open (standard) cholecystectomy in case of an urgent situation. Laparoscopic approach has its own advantages but in patients who should undergo open surgery, the mini laparotomy cholecystectomy must be considered as it has similar outcomes with open classical cholecystectomy.

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