

## AN AUDIT OF LAPAROSCOPIC CHOLECYSTECTOMY

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**ABSTRACT**

*Objective:* To evaluate the outcome of Laparoscopic Cholecystectomy in Gall stone disease, critically analyzing the complication rate, morbidity and mortality rate.

*Design & Duration:* It is a retrospective study from June 1997 to June 2006.

*Setting:* Hamdard University Hospital, Saifee Hospital, Burhani Hospital and Remedial Hospital, Karachi.

*Patients:* All patients (>12 years) with cholelithiasis were included in this study. Patients with common bile duct dilatation (>8mm) or stones, or gall bladder mass or jaundice, and those declared unfit for anaesthesia were excluded.

*Methodology:* The detailed data of all the cases was compiled and analyzed.

*Results:* Out of the total of 1345 patients operated during the study period, 1234 (91.75%) were females and 111 (8.25%) males; their ages ranged from 12 to 89 years, majority were in the age bracket of 30-50 years. Our conversion rate was 6.4%. Nine (0.67%) patients developed bleeding from the port site, 30 (2.23%) port site infection, 43 (3.20%) umbilical port hernia, two bile duct injury and one colonic injury. There was no mortality in this series.

*Conclusion:* Laparoscopic Cholecystectomy is a safe and effective treatment for Cholelithiasis.

**KEY WORDS:** Laparoscopic Cholecystectomy, Cholelithiasis, Morbidity, Mortality

**INTRODUCTION**

In majority of surgical centres Laparoscopic Cholecystectomy has been accepted as the gold standard treatment for cholelithiasis. Until recently the treatment for acute cholecystitis was conservative with antibiotics, analgesics, etc. followed by open or laparoscopic cholecystectomy. However, with increasing expertise, it has now become possible to perform laparoscopic cholecystectomy for acute cholecystitis straight away. The introduction of laparoscopic cholecystectomy and the evolution of laparoscopy has generated a new interest among general surgeons about its diagnostic capabilities<sup>1</sup>.

We have collected the detailed data of all the cases that underwent Laparoscopic Cholecystectomy by us at different hospitals of Karachi. This study is an effort to critically analyse our results as regards to complications, morbidity and mortality.

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**PATIENTS & METHODS**

This retrospective study was carried out at Hamdard University Hospital, Burhani Hospital, Saifee Hospital and Remedial Hospital in Karachi from June 1997 to June 2006. Patients of either sex, >12 years of age with gall stone disease were included in the study. Only those cases were excluded who had common bile duct (CBD) dilatation (>8mm in diameter) or stones, or mass in gall bladder or jaundice and those declared unfit for general anaesthesia.

All patients had their blood analyzed for complete picture, urea, sugar, electrolytes, liver function tests and hepatitis B and C. All patients had an X-ray chest and ultrasound of the abdomen done. ECG was performed in cases >40 years of age.

We used the standard four port technique for performing the cholecystectomy. For creating pneumoperitoneum we used the open method by applying two stay sutures in the linea alba, dividing the rectus sheath, opening the peritoneum and then placing Hasson's cannula under direct vision.

Post-operatively the patients were followed-up for six months and any complications noted. The data was then compiled and analyzed.

Age Group	Male	Female	Total
12-20 years	2	15	17
21-30 years	15	74	89
31-40 years	28	275	303
41-50 years	45	585	630
51-60 years	13	210	223
61-70 years	4	58	62
71-80 years	3	13	16
> 80 years	1	4	5
<b>Total</b>	<b>111</b>	<b>1234</b>	<b>1345</b>

Table I. Age Distribution

## RESULTS

Out of 1345 patients that underwent Laparoscopic Cholecystectomy, there were 1234 (91.75%) females and 111 (8.25%) males, giving rise to a female to male ratio of 11:1. Majority of males and females were seen in the 4th and 5th decades of life (Table I).

Majority (87%) of our cases had multiple gall stones (Table II). In 86 (6.4%) cases we had to convert to open surgery. This includes cases of cholelithiasis as well as those of acute cholecystitis. Our mean operative time was 50 minutes, the range varying from 30 minutes to 110 minutes.

The post-operative complications are shown in Table III, the commonest being umbilical port hernia. Of the two common bile duct injuries, one was recognized during surgery and the other on the first post-operative day. Both were dealt with by repair over a T-tube.

Table III. Post-operative Complications

Complication	No.
Bleeding from Epigastric port	9
Epigastric port infection	9
Umbilical port infection	21
Umbilical port hernia	43
Common bile duct injury	2
Colonic injury	1
Mortality	--

Operative Finding	No.	%
Multiple gall stones	1171	87.06
Solitary gall stone	165	12.27
Acalculous Cholecystitis	9	0.67
<b>Total</b>	<b>1345</b>	<b>100.00</b>

Table II. Operative Findings

Majority of our patients went home on the first post-operative day i.e. 24 hours after admission, a minority after 48 hours and only 15 after 72 hours. Two patients who developed complications stayed for five days.

## DISCUSSION

Laparoscopy is becoming popular day by day, and laparoscopic surgeons are now becoming bold and exploring almost all corners of the peritoneal cavity. Laparoscopic cholecystectomy has revolutionized the treatment of cholelithiasis and it is now considered as the gold standard, because it causes less surgical trauma thereby resulting in reduced hospital stay and early resumption to normal activity<sup>2</sup>.

No surgery can be performed without having complications. Our observation was that majority of complications were either due to the Veress needle or the 10mm sharp trochar insertion. Dizieli et al<sup>3</sup> reported 13 cases of aortic injuries with one death. Similarly Raviaco et al<sup>4</sup> reported one injury to aorta and one to middle colic artery. We avoided these complications as we used the open method for creating pneumoperitoneum by applying two stay sutures in the linea alba and dividing the rectus sheath and peritoneum under direct vision, and then placing the Hasson's cannula also under direct vision.

The incidence of common bile duct injury following laparoscopic cholecystectomy had been previously shown to be higher than that after open cholecystectomy i.e. 0.6% versus 0.3%<sup>3,5</sup>. The incidence reported by Letwin<sup>6</sup> was 0.1%. Adamson<sup>7</sup> described the incidence, 0.7% and Ahmed<sup>8</sup> 1%. In our study the incidence of CBD injury was 0.14%.

The leading cause of injury to CBD is difficulty in recognizing anatomy at the Calot's triangle. These injuries can be prevented by adequate surgical experience, careful dissection and proper case selection<sup>9</sup>. We had two cases of common bile duct injury. One, recognized at the time of operation, due to over traction by the grasper at the Hartmann's pouch which resulted in the tenting,

was repaired over a T-tube. The other was detected on the 2nd post-operative day, due to biliary leakage. Re-laparoscopy was performed, injury was identified and the CBD repaired using a T-tube again. Both the patients made uneventful recovery.

Haemorrhage during surgery is a well known complication in nearly every series<sup>10</sup>. The injury may occur during Veress needle insertion or dissection<sup>11</sup>. Fortunately we did not had any incidence of major bleeding. Minor bleeding did happened which was easily controlled by pressure or application of sutures.

Small or large bowel can be again injured while introducing the Veress needle or 1st trocar with sharp tip, or forcible dissection while freeing adhesions, or by thermal burns<sup>12</sup>. Often such injury are not recognized during laparoscopic cholecystectomy, but manifest later on<sup>13</sup>. In our study we had one colonic injury. The large bowel was accidentally caught in the stay suture during creation of the pneumoperitoneum and got traumatized while inserting Hasson's cannula. Hence, the abdomen was opened and the small perforation found was closed primarily with no after effects.

In this study 13 gall bladders were accidentally perforated while performing dissection; this was controlled by applying clips or by holding the perforation site by the grasper. After removing the gall bladder the peritoneal cavity was washed with saline.

Port site minor infection occurred in 30 (2.2%) cases in our study is one of the post-operative problem worth mentioning. Arain et al<sup>14</sup> also reported umbilical port wound infection in 1.63% cases.

Umbilical port site hernia (3.2%) was one of the commonest complications in our study. Bhopal et al<sup>13</sup> also quoted a similar (3%) incidence in their series. To avoid this complication we are now doing layered closure of the umbilical port site wound.

**Table IV. Comparison of Conversion Rates**

Place	Author	%
Karachi	This study	6.4
Rawalpindi	Bhopal et al <sup>13</sup>	2.0
Lahore	Rehman et al <sup>15</sup>	6.6
Spain	Wolnerhanssen et al <sup>16</sup>	9.0
Hungary	Bondar et al <sup>17</sup>	28.0
Israel	Elder et al <sup>18</sup>	12.5

We had to resort to conversion in 86 (6.4%) cases. We usually decide about conversion in the first 15 to 30 minutes after the insertion of the camera. If there is no progress or mass formation or lot of adhesions, we normally decide rather early to convert to open cholecystectomy to avoid complications. The conversion rates seen in other series are shown in Table IV.

## CONCLUSION

Laparoscopic Cholecystectomy is a safe and effective surgical procedure for cholelithiasis. In laparoscopic centres it can be performed for acute cholecystitis. The ideal period to perform laparoscopic intervention in acute cholecystitis is the first 24 to 48 hours of onset of symptoms.

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**Aims:** This study reviewed laparoscopic cholecystectomy in the clinical practice of a single general surgeon in northern Saskatchewan, Canada. **Methods:** Data were accumulated from the electronic medical records (EMRs) software and health records (HRs) department of the Victoria Hospital. This audit searched for all laparoscopic cholecystectomies between the years 2009 and 2016 inclusive. **Results:** Two hundred and ninety laparoscopic cholecystectomies were performed over 7 years. They were analyzed for various aspects such as age, with the majority of patients between 41 and 65 years, and gender, with the female gender in 71.8% of cases. **Conclusion:** Laparoscopic Cholecystectomy is a safe and effective treatment for Cholelithiasis. **KEY WORDS:** Laparoscopic Cholecystectomy, Cholelithiasis, Morbidity, Mortality.

**Introduction. Patients & methods.** We have collected the detailed data of all the cases that underwent Laparoscopic Cholecystectomy by us at different hospitals of Karachi. This study is an effort to critically analyse our results as regards to complications, morbidity and mortality. **Correspondence:** Dr. Saleem Khan, Associate Professor Surgery, Hamdard University Hospital, Karachi. Laparoscopic cholecystectomy has rapidly become the procedure of choice for rou... Hence, laparoscopic cholecystectomy was introduced and gained acceptance not through organized and carefully conceived clinical trials but through acclamation. Laparoscopic cholecystectomy decreases postoperative pain, decreases the need for postoperative analgesia, shortens the hospital stay from 1 week to less than 24 hours, and returns the patient to full activity within 1 week (compared with 1 month after open cholecystectomy). [3, 4] Laparoscopic cholecystectomy also provides improved cosmesis and improved patient satisfaction as compared with open cholecystectomy. Laparoscopic cholecystectomy is a safe and effective management of gall stone disease. Better training, careful case selection, meticulous technique and high standard equipment are of paramount importance for ensuring good results in laparoscopic cholecystectomy.

**Background:** The Gold standard treatment for symptomatic gallstone disease is laparoscopic cholecystectomy (LC) since 1990. LC can be performed safely as a day case procedure. The objective of this study was to evaluate the results of laparoscopic cholecystectomy in symptomatic gall stones disease in terms of length of hospital stay, complications, morbidity and mortality. **Conclusion:** Laparoscopic cholecystectomy though proved as gold standard for cholelithiasis but still is not free of complications and can land up into major problems for patients who had either difficult cholecystectomy or over looked congenital anomalies of biliary tree. **KEYWORDS:** Laparoscopic cholecystectomy, Complications, Reasons of exploration, Management.

Pak J Med Sci April - June 2012 Vol. 28 No. 3 480-483. How to cite this article: Talpur KAH, Malik AM, Sangrasi AK, Laghari AZ, Post laparoscopic cholecystectomy exploration: An audit. Pak J Med Sci 2012;28(3):480-483. **INTRODUCTION.**