

# Experience of Laparoscopic Cholecystectomy at Mayo Hospital, Lahore

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**A study of eighty consecutive non-selected patients who underwent laparoscopic cholecystectomy in West Surgical Unit of Mayo Hospital, Lahore is presented. The mean age of the patients was 42 years. Seventy-four (92.5%) were females and rest (7.5%) were male. Fifty-two patients were having chronic cholecystitis and rest had acute cholecystitis. All had gallstones. The conversion rate was 6.25% due to bleeding, aberrant anatomy, thick fibrous adhesion, cystic duct avulsion and common bile duct dilatation. The mean hospital stay remained 26 hours.**

**Key words: Laparoscopic cholecystectomy, cholelithiasis**

Cholecystectomy is one of the most commonly performed operations in Western Europe and United States of America. More than 5,00,000 gall bladders are removed each year in USA alone<sup>1</sup>. Traditional open cholecystectomy has long been accepted as gold standard treatment of gall stones<sup>2</sup>. Revolution in the treatment of gallstones came in 1987 when first laparoscopic cholecystectomy was carried out<sup>3</sup> by Philippe Mouret et al<sup>4</sup> in Lyon, though first reported series was by Dubois et al<sup>5</sup>. Since then there was no turning back and laparoscopic cholecystectomy became an established procedure due to less pain, shortened postoperative hospitalization and minimum morbidity<sup>6,7,8</sup>. The laparoscopic surgery intended to minimize the trauma of access without compromising exposure of operative field<sup>9</sup>. Since first laparoscopic cholecystectomy in Pakistan in 1991, it has been enthusiastically accepted. It was first established in private sector and then gradually in public sector. In Mayo Hospital our unit has two operating days in East Operation Theatre. The laparoscope was installed in this theatre in October 2001. We are going to present our experience of eighty consecutive non-selected cases performed in this theatre. This study will help us in evaluating the safety and merits of laparoscopic cholecystectomy and results will be compared with other series.

## Patients and methods

This study evaluated prospectively, 80 consecutive non selected cases who presented between 1<sup>st</sup> November 2001 and 31<sup>st</sup> July 2002 with chronic and acute cholecystitis and underwent cholecystectomy. Sixty eight (85%) patients were admitted through OPD and twelve (15%) through emergency department. The diagnosis was made on history, clinical examination and findings on ultrasonography. Cases in which clinical examination and radiological investigations suggested CBD stone or malignancy and those unfit for general anaesthesia were excluded from this study. However, age, duration of acute symptoms, obesity, previous abdominal operation, especially through low midline<sup>1</sup> incision were not considered as exclusion criteria. Preoperative work up included blood complete examination, urine analysis,

blood urea, serum creatinine, blood sugar, serum bilirubin, alkaline phosphatase, transaminases and abdominal ultrasonography especially for gallbladder, CBD, liver and pancreas. Second generation Cephalosporin (Cefuroxime Sodium) was given perioperatively. In patient whom distended stomach obstructed view, N/G tube was passed and removed at the end of procedure. Laparoscopic cholecystectomy was carried out by three port method. Fourth port was used in some patients for better exposure and added manipulation. Intraoperative cholangiogram was not done in any case. Postoperative three doses of second generation cephalosporins were given. In patients having acute cholecystitis or empyema, I/V antibiotics were shifted to oral for another 4-5 days. Injection Bupivacain was given at port sites. Postoperative diclofenac sodium I/M was given for pain. Narcotic analgesia was given on demand in 20 cases. Patients were encouraged to get out of bed in 12-18 hours. They were allowed light diet in the evening and were discharged when surgeon and patient both felt comfortable in doing so. Patients were seen at the end of first week and third weeks or whenever patient developed some complaint. LFTs were repeated two weeks after surgery and patients were asked for relief of symptoms. All gallbladders were sent for histopathology for confirmation of diagnosis. The data recorded included age, sex, duration of symptoms, associated illness, history of previous operation, findings on ultrasonography, duration of operation, operative findings, reasons for conversion, analgesic requirement, complications, duration of hospital stay and patient's evaluation of operative experience.

## Results

During study period starting from 1<sup>st</sup> November 2001 to 31<sup>st</sup> July 2002, 80 cases underwent laparoscopic cholecystectomy in West Surgical Unit of Mayo Hospital, Lahore. Seventy-four (92.5%) were female and rest (7.5%) were male. Age ranged between 23-65 years with mean age of 42 years (Table 1).

Clinical features suggestive of chronic cholecystitis were present in 52(65%) patients. In rest (35%) diagnosis of acute cholecystitis was made on the basis of clinical and radiological findings (Table 2).

Table 1. Age distribution

Age	n=	%age
23-30 years	12	15
31-40 years	28	35
41-50 years	20	25
51-60 years	13	16.25
>61 years	07	8.75

Table 2. Diagnosis of patients

Diagnosis	n=	%age
Chronic cholecystitis	52	65
Acute cholecystitis	28	35
• Mucocoele of gallbladder	10	
• Empyema of gallbladder	06	

Ultrasonography was very accurate (100%) in the diagnosis of cholelithiasis. There was no case of acalculus cholecystitis. However, choledocholithiasis present in one patient were missed by sonologist. In 75(93.75%) of cases laparoscopic cholecystectomy was successfully completed. Five cases (6.25%) were converted to open cholecystectomy (Table 3).

Table 3. Conversion to open cholecystectomy

Reason for conversion	n=	%age
Haemorrhage	1	1.25
Aberrant anatomy (double cystic duct)	1	1.25
Thick fibrous adhesion	1	1.25
Cystic duct avulsion	1	1.25
Dilated CBD (cholecodocholithiasis)	1	1.25

Suction drain was placed in 26 patients and was removed within 24 hours in all, but three who had drain more than 200ml initially and ceased spontaneously within 4-5 days. Peroperative 4 patients had bleeding from liver bed which was controlled with diathermy. One patient had excessive hemorrhage from posterior branch of cystic artery and had to convert to open cholecystectomy. CBD was not injured in any case. However, one patient had difficult anatomy at Calot's triangle and during dissection cystic duct avulsed at T-junction and was converted to open cholecystectomy. CBD was drained with T-tube (12F) and patient had uneventful recovery. Leakage from gallbladder occurred in four patients and in one of them stones spilled in peritoneal cavity which were retrieved with grasper. Peroperative and postoperative complications are shown in Table 4&5.

Table 4. Peroperative complications

Complication	n=
Bleeding	5
Avulsion of cystic duct at T-junction	1
Bile leakage	4
Stone spillage	1
CBD injury	0

Fifteen (18.75%) patients had pyrexia upto 39°F for 1-2 days and twelve (15%) patients had moderate cough

and sore throat postoperatively. Fifty-six out of eighty (72.5%) patients undergoing successful laparoscopic cholecystectomy considered themselves completely cured and they were very happy. Twenty-one (26.25%) felt improved and relief in their symptoms, one patient felt same symptoms after operation. (Table 6)

Table 5. Postoperative complications

Complication	n=
Heavy drain (>200ml/D)	3
Prolonged ileus (>36 hours)	8
Jaundice	0
Persistent abdominal pain (APD)	4
Port site hernia	0
Port site seropurulent discharge	4

Table 6. Compliance of patients

Compliance	n=	%age
Excellent	58	72.5
Good	21	26.25
Poor	01	1.25

Twenty two patients who had experience of operation in the past (C-section, appendicectomy, Herniorrhaphy) were delighted with rapid recovery and low morbidity with laparoscopic operation.

### Discussion

Laparoscopic cholecystectomy is enjoying more than a decade of its life and has spread rapidly in surgical world including Pakistan due to its aesthetic advantage and safety<sup>9</sup>. The main advantages are in term of rapid recovery, low morbidity and short hospital stay as described by others<sup>10</sup>. The exorbitant cost of equipment is big stumbling block. Gradually it has been established as a gold standard both in private and public sector.

Consultants of our hospital have been doing this procedure since 1991. Now with the availability of this instrument in public sector hospital, the poor patient can enjoy this latest modality of treatment for gall stones even free of cost. In our study the rate of female patients in forties is very high and same is the peak age sex incidence of gallstones. Most of the patients were admitted through OPD (85%) and results are comparable to other studies<sup>11,12</sup>. During learning curve acute cholecystitis was considered to be a relative contraindication to laparoscopic cholecystectomy. But with increasing experience, good assistance it can be done in acute cholecystitis<sup>13</sup>. Twenty eight (35%) of our patients had acute presentation confirmed on laparoscope. Cholecystectomy was successfully done in 24 of them. Our mean operation time was 45 minutes which is comparatively less with compared to other series<sup>13,14</sup>. Probably those studies were conducted in times when laparoscopic cholecystectomy was gaining popularity. The mean hospital stay of 26 hours which is gradually being decreased and in same centers this is being done as day care procedure. The conversion

rate of 6% is always expected and justified<sup>15</sup>. Conversion may be necessary because of adhesions from previous surgery, abnormal anatomy, intraoperative bleeding, patient undergoing laparoscopic cholecystectomy months or years after endoscopic sphincterotomy, and patients with acute cholecystitis when it is difficult to manoeuvre tense gallbladder<sup>16</sup>. The higher conversion rate mentioned by Salky et al<sup>17</sup> 13% and Bailey et al<sup>12</sup> 33.3% is because they operated more on acute gallbladders and in early nineties. In one of the local series<sup>14</sup> of laparoscopic cholecystectomy in acute cholecystitis the conversion rate was 12.73%. Our conversion rate of 6% is justified as majority of these patients were having chronic cholecystitis. The incidence and type of complications after laparoscopic cholecystectomy vary considerably. The incidence of CBD injuries in one local series is nil<sup>14</sup> and other 1%<sup>18</sup>. In our study CBD was not injured in any case. However, cystic duct avulsion at T-junction was noted in one patient. In some initial studies upto 7% incidence of CBD injury has been reported<sup>19,20,21</sup>. Gradually, this incidence now has reduced upto 1%. We did not note injury to adjacent organs including bowel injury. The lower incidence of the complication was because of the fact that the surgeons were fairly trained in minimal access surgery before conduction of this study, which achieved a success rate of 94% without having any mortality comparable to others<sup>18</sup>.

### Conclusion

Laparoscopic cholecystectomy is an effective and safe modality of treatment for symptomatic gallstones in experienced hands because of accelerated recovery, negligible wound infection and wound related complication, less postoperative pain and short hospital stay. It is also recommended that government or professional body should design a structured training programme and certification of young surgeons new to this field before they are allowed to embark on these sophisticated procedures.

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