

# COMPLICATIONS OF LAPAROSCOPIC CHOLECYSTECTOMY IN ACUTE CHOLECYSTITIS

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## ABSTRACT

*Objective* To assess the clinical outcome of laparoscopic cholecystectomy in the management of acute cholecystitis.

*Study design* Descriptive study

*Place & Duration of study* Surgical Units II and III of Chandka Medical College Hospital Larkana, from 01.10.2003 up to 31.12.07.

*Patients and Methods* In this study 100 consecutive cases of clinically and sonologically confirmed cases of acute cholecystitis who underwent early laparoscopic cholecystectomy (within 07 days of attack) were included. Patients with symptoms of more than one week duration or those with associated diseases were excluded

*Results* There was female preponderance with male to female ratio 1:4.5. Mean age was 45.75 years (SD +11.99 years). Most of the patients were received within 24 hours after the onset of symptoms. Ultrasound revealed edematous gall bladder (GB) in 24 cases, contracted GB in ten, empyema in eight, perforated GB in four. Fifty four patients had acute cholecystitis with cholelithiasis. Peroperative complication were minor bleeding in 6 patients, minor injury to liver bed in 3, major bleeding occurred in two cases that required conversion to open surgery. Other findings which delayed the procedure or required conversion were adhesions with omentum, stomach, colon, CBD, and distorted anatomy of Calot's triangle and CBD injury. The conversion rate was 6% among them two were due to bleeding, two with friable adhesions, one with obscure anatomy. Stone in CBD could not be detected on ultrasound in one case and CBD injury occurred in one. The minimum time taken for the procedure was 50 minutes. No mortality occurred in this series.

*Conclusions* Emergency / early cholecystectomy is reliable, safe and cost effective modality, in the management of acute cholecystitis. It results in accelerated recovery, negligible wound infection or related complications, and less postoperative pain. Certain factors are responsible for conversions which are obscure anatomy, bleeding, adhesions, and CBD, injury.

*Key words* Laparoscopic cholecystectomy, Acute cholecystitis, Complications.

## INTRODUCTION:

The surgical management of patients presenting with acute cholecystitis remains controversial.<sup>1</sup> The scope of minimal access therapy is to minimize the traumatic insult to the patients without compromising the safety and efficacy of treatment compared with conventional

open surgery.<sup>2</sup> Traditional open cholecystectomy had been accepted as gold standard treatment of gall stones in past.<sup>3</sup> Revolution in the treatment of gall stones came in 1987, when first laparoscopic cholecystectomy was carried out by Phillip Mouret et al in Lyon,<sup>4</sup> though first reported series was by Dubois et al.<sup>4,5</sup> All patients with symptomatic cholelithiasis and / or acute cholecystitis are candidates for this approach. Body morphology, age, and previous abdominal surgical intervention are no longer contraindications. Emergency laparoscopic cholecystectomy (LC) for the management of acute

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cholecystitis is considered to be associated with more complications and increased risk of common bile duct injury.<sup>6</sup> The majority of iatrogenic injuries can be successfully avoided by appreciating the limitations and pitfalls of laparoscopic surgery, and by carefully dissecting the Calot's triangle before dividing any structure. Most surgeons can perform this procedure quickly with a minimal conversion rate. This study was conducted to evaluate the safety and merits of laparoscopic cholecystectomy for treatment of acute cholecystitis.

**PATIENTS AND METHODS:**

In this study 100 consecutive cases with clinical diagnosis of acute cholecystitis confirmed subsequently by abdominal ultrasound scan underwent early laparoscopic cholecystectomy during same admission at Surgical Units II and III of Chandka Medical College Hospital Larkana from 01.10.2003 to 31.12.07. Diagnosis of acute cholecystitis was based on clinical evidence of pain, guarding and tenderness in right upper abdominal quadrant, fever, nausea and vomiting associated with leucocytosis. Abdominal ultrasound performed in all cases and confirmed calculus cholelithiasis with evidence of acute cholecystitis. All patients with severe form of acute cholecystitis, bile duct calculous, obstructive jaundice, cholangitis, acute pancreatitis, portal hypertension, gallbladder malignancy, sepsis, severe cardiopulmonary disease or any other unacceptable anesthetic risk were excluded.

An informed consents taken from the patients pre-operatively, explaining the risk of conversion to open operation. All patients were routinely catheterized in the operation theatre. Second generation cephalosporin (Cefuroxime sodium) started with diagnosis. Nasogastric tube was passed. Per operative complications if any, were recorded. Reasons for conversion was noted. Diclofenic suppository of 100 mg was introduced into the rectum after the induction of anesthesia. Standard technique was used. The gall bladder was extracted through umbilical port after putting in the rubber bag made from a 6 ½ sized gloves. Statistical data analysis was carried out on statistical packages for social sciences (SPSS) 11.0 for windows.

**RESULTS :**

The age of patients ranged from 22 -72 years with mean age 45.62 years and SD + 11.99 years. Maximum percentage of patients (n -45 were in their 40s. There were 82 females and 18 males, with female to male ratio of 4.5:1. Clinical features were, upper outer quadrant abdominal pain in eighty eight patients, fever in seventy eight and nausea / vomiting in twenty four. Leucocytosis was detected in almost all patients with more than 12000 /cmm and in 18 (18%) patients more than 15000cells /cmm.

Ultrasound findings were reported as edematous GB in 24 patients, contracted GB 10, empyema in 8, perforated GB in 4. Fifty four patients were with calculous gall bladder. Ultrasonography was accurate in all cases for the diagnosis

of cholelithiasis. However, stone in common bile duct in one case was missed.

All patients were operated within one week of presentation of symptoms. Per operatively severe inflammation was noted in twelve, adhesions with colon/stomach in twelve, adhesions with omentum /CBD in ten, distorted anatomy at Calot's triangle in six cases. Stones spillage occurred in 3 cases, which were either picked up with forceps or smaller one sucked out with 10 mm suction tube. Six patients had bleeding from liver bed, but controlled with swab pressure and diathermy. The drain was placed in two cases and was removed after 24 hours.

In 94 cases laparoscopic cholecystectomy was completed successfully. In six cases laparoscopic procedure was converted to open cholecystectomy. Reasons of conversion were acute cholecystitis with severe adhesions which caused bleeding in 2 (33%) cases, obscure anatomy at Calot's triangle in two and stones in CBD missed on ultrasound in one and CBD injury in one.

The operative time in cases where major complications were encountered was 1 hour 45 minutes. However in simple cases, operation completed in 50 minutes. So the average time taken was 1 hour 15 minutes. Post- operative complications are shown in table 1. The postoperative hospital stay in majority (N – 72) was two days. Twenty two patients discharged by 3 days while six patients who required conversion stayed more than three days in hospital. No mortality occurred in this series.

Complications	No of patients
Nausea, Vomiting	30
Pain	25
Umbilical port infection	08
Prolonged ileus (>36 hours)	04
Persistent abdominal pain	03
Fever	02
Chest infection	02

**DISCUSSION:**

The laparoscopic cholecystectomy is the treatment of choice for the majority of patients with gall stone disease. LC became an established procedure due to less pain, shortened postoperative hospitalization and minimum morbidity and early return to home. During the initial phase, many surgeons performed randomized studies to evaluate LC versus open procedure. This is no longer a matter for discussion and LC is now the procedure of choice for treating GB stones.<sup>7</sup>

Laparoscopic cholecystectomy is more likely to require conversion in who are moribund obese with chronic cholecystitis and a thickened gallbladder wall and in patients with multiple co-morbid diseases.<sup>8</sup> LC performed by experienced surgeons is a safe, effective technique for the treatment, of acute cholecystitis. Patients treated within 48 hours of onset of symptoms experience lower conversion rate to an open procedure, shortened operative time and reduced hospitalization.<sup>9</sup>

In our study the number of female patients was comparatively same as reported in another study<sup>7</sup> and so was the mean age which ranged from 42 years to 51.2 years.<sup>10</sup> The conversion rate of 6% was expected as it is reported to range in other series from 3.6-12 %.<sup>11, 12</sup> Conversion was necessary because of adhesions from previous surgery, abnormal anatomy, intra operative bleeding and in patients of acute cholecystitis when it was difficult to handle the tense gallbladder. Our conversion rate of 6% is justified as all of our patients were suffering from acute cholecystitis. The incidence and type of complications after laparoscopic cholecystectomy vary considerably. The incidence of CBD injuries in our series was 1%, however in literature it is reported to range from 0-3%.<sup>13,14</sup> In our study one case of CBD injury was noted which required conversion. Injury to adjacent organs including bowel did not occur. Umbilical port infection occurred more than what is reported in other series.<sup>15</sup> Prolonged abdominal pain was found in three cases which is nearly the same as found in other series.<sup>16</sup> No mortality occurred in this study as reported by others.

### CONCLUSIONS:

Laparoscopic cholecystectomy is an effective and safe technique of treating symptomatic gallstones even in cases of acute cholecystitis because of accelerated recovery couple with less postoperative pain and short hospital stay.

### REFERENCES:

1. Bhattacharya D, Senapati PS, Hurler R., Ammori BJ. Urgent versus interval laparoscopic cholecystectomy for acute cholecystitis: a comparative study. *J Hepatobiliary Pancreat Surg.* 2002;9:538-42.
2. Cuschieri A, Steele RJC. The biliary tract. In Cuschieri A, Giles GR, Moosa AR eds. *Essential Surgical Practice* vol I, 4<sup>th</sup> ed. Butterworth Heineman 2000: 493-519
3. Mc Shen CK. Laparoscopic cholecystectomy gold standard treatment for gall stone diseases. *Am J Surg* 1989;158:174-8.
4. Hugo WT, James M. Principles and present status of laparoscopic general surgery. *Surg Int* 1997;37: 73-5

5. Testas P, Dewatteville JC. Laparoscopic cholecystectomy. *Ann Gastroenterol Hepatol* 1993;29:300-3.
6. Suter M, Meyer A. A 10-year experience with the use of laparoscopic cholecystectomy for acute cholecystitis: is it safe? *Surg Endosc.* 2001;15:1187-92.
7. Savader SJ. Laparoscopic cholecystectomy related bile duct injuries: A health and financial disaster. *Ann Surg* 1997; 225:265 –73
8. Shea JA, Berlin JA, Backwich DR, . Indications for and outcomes of laparoscopic cholecystectomy; a comparison of pre and post laproscopic eras. *Ann Surg* 1998;227:343-50
9. Lai PB, Kwong KH, Leung KL, Kwok SP, Chan AC, Chung SC, Lw WY. Randomized trial of early versus delayed laparoscopic cholecystectomy for acute cholecystitis. *Br J Surg* 1998;85:764-7,
10. Mirza DF, Narisman KL, Ferrozon N, Mayer AD, Backels JA .Bile duct injury following laparoscopic cholecystectomy, referral pattern and management. *Br J Surg* 1997;84:786-90
11. Cheema S, Brannigan AE, Johnson S, Delaney PV, Grace PA. Timing of laparoscopic cholecystectomy in acute cholecystitis. *Ir J Med Sci* 2003; 172:128-31.
12. Ferozzi L, Lippolis G, Petitti T, Carnevale D, Masi M. Laparoscopic cholecystectomy for acute cholecystitis our experience. *G Chir* 2004;25:80 -25.
13. Hazzan D, Geron N, Golijanin D, Reissman P, Shiloni E. Laparoscopic cholecystectomy in octogenarians. *Surg Endosc* 2003;17:773-6.
14. Shamiyeh A, Wayand W. Laparoscopic cholecystectomy: early and late complications and their treatment. *Langenbecks Arch Surg.* 2004;389:164-71.
15. Sarker S, Herold K Creech S , Shayani V. Early and late complications following Laparoscopic Cholecystectomy adjustable gastric Banding. *Am Surg.* 2004 ;70:146-8.
16. Ji W, Li LT , Chen XR, Li JS. Applications of laparoscopic cholecystectomy in patients with cirrhotic portal hypertension. *Hepatobiliary Pancreat Dis Int.* 2004 ;3:270-4.