

ROLE OF LAPAROSCOPIC CHOLECYSTECTOMY IN THE MANAGEMENT OF ACUTE CHOLECYSTITIS

ABSTRACT

OBJECTIVES: To evaluate the safe technique of surgery in patients with acute cholecystitis and to highlight the better method in which patient can be prevented from complications.

DESIGN: A descriptive study.

SETTING: This study was conducted at Larkana, Sindh from February 2002 to August 2004.

METHODS: A total of 504 patients underwent laparoscopic cholecystectomy. Out of these, 398 patients were treated by elective laparoscopic cholecystectomy and 106 patients underwent emergency laparoscopic cholecystectomy for acute cholecystitis.

RESULTS: Among 106 patients, females were double (73.1%) than males and most of these patients were received within 24 hours of the onset of symptoms. In 56 (52.83%) patients, ultrasound revealed oedematous gall bladder, mucocele, empyema, contracted, perforated and gangrenous gall bladder. Per-operative complication was encountered in 71 (66.98%) patients including bleeding, minor injury to common bile duct (CBD) and liver, adhesions of gall bladder with omentum, stomach, colon, CBD, and distorted anatomy of Calot's triangle. The minimum time taken during the procedure was 50 minutes. In 5 (4.72%) patients, the laparoscopic procedure was converted to open and reasons for conversion were bleeding, tight, dense adhesions and perforated gallbladder leading to biliary peritonitis.

CONCLUSION: Emergency cholecystectomy is reliable and safe modality in the management of acute cholecystitis. Certain factors are responsible for the conversion, which include delayed arrival of patient, patients with perforated gall bladder, bleeding and adhesions. Hence, emergency laparoscopic cholecystectomy seems to be safe, cost effective, and timely surgery with modern conception. This timely surgery prevents the complications associated with acute cholecystitis.

KEY WORDS: Laparoscopy. Cholecystectomy. Emergency. Management. Complications.

INTRODUCTION

The management of gall stones has changed as a result of new technologies such as ultrasound (B mode), endoscopic retrograde cholangiopancreatography (ERCP) and laparoscopic surgery¹ and minimal invasive surgery has a considerable impact in common surgical procedures². The surgical management of patients presenting with acute cholecystitis remains controversial³. Emergency laparoscopic cholecystectomy for the management of acute cholecystitis is considered to be associated with more complications and increased risk of common bile duct injury⁴. But, some surgeons have recommended laparoscopic cholecystectomy as preferred treatment of acute cholecystitis⁵. Here, we present our experience of laparoscopic cholecystectomy in acute cholecystitis.

PATIENTS AND METHODS

This study was conducted at District Larkana of Sindh, Pakistan. Total 504 patients were treated with

laparoscopic cholecystectomy during February 2002 to August 2004. Out of these, 106 were suffering from acute cholecystitis and were operated as emergency laparoscopic cholecystectomy. All these patients underwent routine investigations and were assessed for fitness for general anesthesia. Data was collected through a pre designed proforma.

RESULTS

Among the 106 patients, males were 38 (33.9%) while females were 78 (73.1%) making male to female ratio of 1:2. With regard to duration of onset of symptoms, 58 patients were received within 24 hours, 38 within 24-48 hours and 10 patients with in 48-72 hours. Ultrasound findings in 20 patients reported oedematous gall bladder, 11 patients had mucocele gall bladder, 8 patients contracted gall bladder, 5 patients perforated gall bladder, 8 patients with empyema gall bladder and 4 patients with gangrenous gall bladder. Problems encountered during laparoscopy were adhesions of gall bladder

with surrounding structures, which included adhesions with stomach in 12 patients, adhesions with colon in 12 cases, adhesions with omentum in 10 cases and adhesions with common bile duct (CBD) in 6 cases. Bleeding was seen in 11 cases and minor injury of the liver occurred in 5 cases. Minor injury to CBD was also seen in 5 cases while Calot's triangle distorted in 10 cases. However, remaining cases had no specific complications (**Table I**). The operative time in cases where major complications were encountered was 1 hour 50 minutes. However, in simple cases where no complications were present, operation was completed in 50 minutes. So, the average time taken was 1 hour 20 minutes. Only five (4.72%) cases were converted to open. The reasons for conversion were severe bleeding in 2 cases and tight adhesions with CBD, pasted adhesion of gall bladder with Calot's triangle and perforation of gall bladder with biliary peritonitis in one case respectively. Post-operative complications encountered in this study were paralytic ileus in 6 (5.7%) patients and biliary leakage in 5 (4.8%) while superficial wound infection was seen in 11 (10.4%) cases; all involving the infra umbilical port (**Figure I**). Postoperative hospital stay in majority of patients (85) was 2 days while 16 patients were discharged after 3 days (**Figure II**).

TABLE I:

Complication	Number of Patients
Adhesions with Stomach	12
Adhesions with Colon	12
Bleeding	11
Adhesions with Omentum	10
Distorted anatomy of Calot's Triangle	10
Adhesions with CBD	06
Minor injury of Liver	05
Minor injury of CBD	05
Total	71

FIGURE I: POST-OPERATIVE COMPLICATIONS

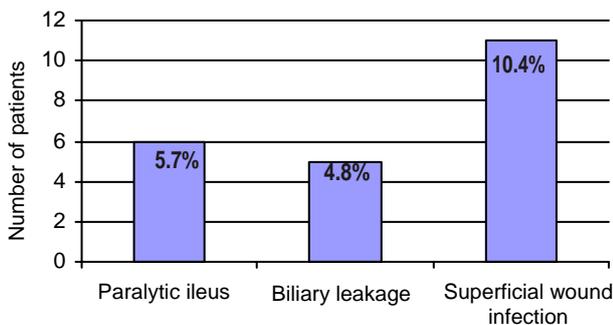
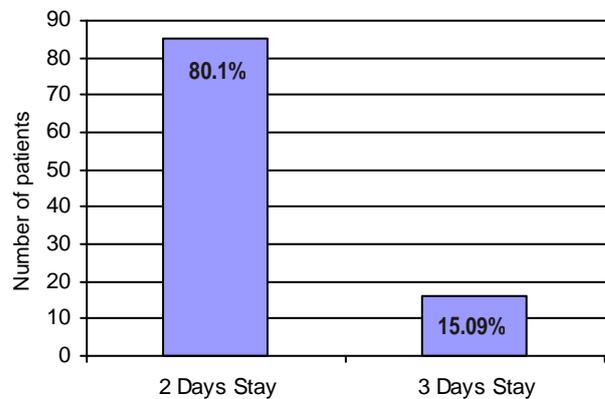


FIGURE II: POST-OPERATIVE HOSPITAL STAY



DISCUSSION

PER-OPERATIVE COMPLICATIONS

Treatment of acute cholecystitis is still debatable⁶ but the laparoscopic cholecystectomy is increasingly being employed as an initial surgical approach in patients with acute cholecystitis⁷. Laparoscopic cholecystectomy is now also used for the management of acute cholecystitis where the procedure may be difficult and challenging. Certain favourable and unfavourable conditions may be present which influence the conversion and complication rates⁸. We preferred laparoscopic cholecystectomy on emergency basis as soon as the diagnosis was made. In our study, 106(21.9%) patients presented with acute cholecystitis. But in a study by Cheema, 120 out of 132 (90.91%) cases of cholelithiasis were in acute cholecystitis⁹ while Ludwig et al¹⁰ and Serratic et al⁶ have reported 71.9% and 41.84% cases respectively in acute phase. In our study, the maximum number of patients was operated within 24 hours while a study by Johansson has reported that early laparoscopic cholecystectomy may be carried out within 7 days of onset of symptoms¹¹. Early laparoscopic cholecystectomy within 5 days of onset of symptoms in acute phase has proved superior to open cholecystectomy¹². Meanwhile, early laparoscopic cholecystectomy within 4 days of onset of symptoms has been shown to reduce a number of complications and conversion rate¹³. In Bender et al study where laparoscopic cholecystectomy was performed within 24 hours, the results were found more satisfactory¹⁴. In our study, most of patients presented with oedematous gall bladder, mucocele and empyema whereas Gharaibeh has reported common gall bladder pathologies as gangrenous empyema, oedematous, mucocele and contracted gall bladder¹⁵. Per-operative findings in this study included mainly adhesion of gall bladder with surrounding structure

(Calot's triangle, stomach, colon and omentum in 47.1% cases) while bile duct injury was seen in 4.71% cases. However, study by Zucker et al dealing with 720 cases has reported no bile duct or major vascular injury¹⁶. In Hammazaki study, major complications were seen in 3 cases with bile duct injury (2%) and bleeding encountered during operation and controlled easily under laparoscopy¹⁷. Per-operative complications in this study included bleeding in 11(10.3%) cases, CBD injury in 5(4.71%), minor injury to liver in 5(4.71%) and distorted anatomy of Calot's triangle in 10 (9.43%) cases respectively. Meanwhile, in Cheema's study, 3 bile duct injuries have been reported among 482 cases⁹. However, early recognition and prompt repair gives good results¹⁸. Male gender and age >60 are liable for more complications¹⁹. More complications were also seen in our male patients. In this study, except one case all the CBD injury patients were controlled promptly. In this study, total 5 (4.71%) cases were converted among 106 patients and the reasons for conversion were bleeding, dense adhesion of gall bladder with CBD, perforated gall bladder with biliary peritonitis and pasted adhesion of gall bladder with Calot's triangle as compared to 16% conversion to open reported by Brodsky et al, 37.8%, 20.5%, 7.7% and 6% respectively by others¹⁷⁻²¹. There was no significant difference found in conversion rate in emergency laparoscopic cholecystectomy (21%) versus delayed group (24%). However, conversion rate is higher which may be due to dense adhesion obscuring Calot's triangle²². In this study, 6 (5.7%) patients suffered from paralytic ileus, 5(4.8%) patients biliary leakage while the superficial wound infection in infra umbilical port was seen in 11 (10.6%) cases. Mortality and morbidity associated with acute cholecystitis remains relatively high and this seems to be determined by the degree of acute and chronic illness present at the time of diagnosis²³. No mortality was seen in our study, however, Ludwig et al have reported 9% fatal outcomes among 895 patients¹⁰. Average time for surgical procedure in our patients was 1 hour and 20 minutes as compared to 107 minutes reported in the literature⁷ while in a study from Egypt, the mean operative time is reported as 55 minutes.

In this study, majority of cases was discharged within 24-48 hours but Serralia study suggests 5 days post-operative stay in early laparoscopic cholecystectomy¹¹, while study of Ramadan²⁴ reports hospital stay ranging from 3 to 7 days.

Emergency laparoscopic cholecystectomy is a reliable and safe modality in the management of acute cholecystitis with or without cholelithiasis. Certain factors are responsible for conversion which

include delayed arrival, patient with empyema and perforated gall bladder, bleeding and adhesions. Contradictory to the international literature, our study suggests that conversion rate is same as elective laparoscopic cholecystectomy. So, it is concluded that emergency laparoscopic cholecystectomy is safe and cost effective due to on time surgery and patient is prevented from future complications.

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