**ORIGINAL ARTICLE**

# Laparoscopic Subtotal Cholecystectomy in Difficult Cholecystitis - our experience

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## ABSTRACT

**Background:** Laparoscopic Cholecystectomy (LC) has become the gold standard in treating benign gallbladder diseases. Increasing laparoscopic experience and technique have made laparoscopic subtotal cholecystectomy (LSC) a feasible safe option in more complicated cholecystitis.
**Aim:** To highlight the feasibility, indication and advantages of LSC in cases of difficult cholecystitis.
**Study design:** Clinical trial
**Place and duration of study**: Department of Surgery, Choudary Akram Teaching & Research Hospital, Lahore from January 2013 - December 2014
**Methodology**: Total 150 patients of gall stoneswere treated with laparoscopic cholecystectomy, out of 150 patients 20 patients 13.3% were found to have difficult and complicated cholecystitis and treated with laparoscopic subtotal cholecystectomy.
**Result**: The result of LC and LSC were compared in terms of operative time, bleeding, hospital stay , time to resume diet ,CBD injury and conversion rate.
**Conclusion:** Laparoscopic subtotal cholecystectomy in difficult and complicated cholecystitis is relatively safe option.
**Keywords**: Laparoscopic cholecystectomy (LC), laparoscopic subtotal cholecystectomy (LCS),

## INTRODUCTION

It is well known that laparoscopic cholecystectomy allows for shorter hospital stay and operative time, faster operative rehabilitation and reduced wound complications compared with conventional open cholecystectomy. Now LC has become the Gold standard in treating benign gall bladder diseases. When LC began in early 1990s, acute cholecystitis and cirrhosis were considered comparative contraindications[1,2,3]. Growing experience has allowed the use of LC in more complex procedures such as in acute cholecystitis[4,5,6]. The risk of bleeding and CBD injury was higher in both LC and open cholecystectomy[7,8,9]. The open subtotal cholecystectomy has been proven to be a safe, simple, and definitive procedure in this situation. Increasing laparoscopic experience and techniques have made laparoscopic subtotal cholecystectomy a feasible and relatively safe option in difficult cholecystitis[10,11].

## METHODS

In this study total 150 patients with symptomatic gall stones were treated with laparoscopic Cholecystectomy. Majority of patients were female. 20 patients 13.3% out of 150 were found to have difficult and complicated cholecystitis. Complicated cholecystitis includes acute cholecystitis, delayed resolving acute cholecystitis difficult Calot triangle due to thick fibrosis and adhesions, type 1 Mirrize syndrome. Patients with raised bilirubin, Alkaline phosphatase, dilated CBD on ultrasound, h/o of jaundice or pancreatitis were excluded from the study. Total 150 patients with gallstones were divided in to two groups. Group A 130 86.7% and Group B 20 patients 13.3% with difficult cholecystitis. All 130 patients were treated with standard LC. For 20 patients initially, standard techniques of LC started after removing all adhesion of duodenum stomach, omentum and colon, if gallbladder found tensely distended it was aspirated, if cystic artery is easily dissected it was clipped first, when all measures were failed to dissect Calot's triangle, then LSC versus conversion to open cholecystectomy were our options. All 20 patients with difficult cholecystitis triangle due to serve inflammation were treated with LSC and no open cholecystectomy.

**Techniques:** Pneumoperitoniun upto 13mmHg produce with Verres needle and four parts were used, to 10 mm and to 5mm as in standard technique .All adhesion were lysed with blunt as well as sharp dissection. Tensely distended gall bladder was aspirated and Hartman pouch is clearly dissected in all around and cut with electro surgical L hook or scissor and proximal gall bladder was clipped. The open end of Hartman pouch was inspected milked,

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with Marryland to remove any impacted stone and flushed with saline. Now forclosure of Hartmanpouch various techniques were used mostly closed with endoloops with or without clips.The rest of the gall bladderwas dissected from liver bed with electrosurgical L hook or Harmonic scalpel. Hemostasis done, Subhepatic space washed with N/Saline and drain was placed in subhepatic space and gall bladder specimen put in Endobag were removed.10mm port site wound were closed. I/V antibiotics continued for 3-4 days, drain removed after 72hrs and patients were discharged on 4th day.

## RESULTS

The results of LC and LSC were compared in terms of operative time, bleeding, hospital stay, time to resume diet CVD injury and conversion rate as shown in the table

| Parameters | LC group n=130 | LSC group (n=20) |
|---|---|---|
| Operation time | 45±15 min[b] | 75±15 min |
| Bleeding | 20ml ±5ml[b] | 70ml±10ml |
| Hospital stay | 48hrs±12hrs[a] | 96hrs±12hrs |
| Time to resume diet | 24hrs±8hrs[a] | 48hrs±8hrs |
| Bile leak/collection | Nil | nil |
| Conversion rate | 0% | 0% |

a :p<0.05;b:p< 0.01,vs. LSC

In group B the operative time, amount of bleeding and hospital stay were more in patients having LSC as standard LC .we usually advice CBC and LFT cost operatively as a routine in both groups all patients have normal CBCs and LFTs and patients were followed up for 2 years.

## DISCUSSION

Laparoscopic cholecystectomy has become now the gold standard in treating benign gall bladder disease due to rapid recovery and less post-operative complication. With the development of equipment devices, technique of laparoscopy, especially experience of surgeons ,the indications of LC have been gradually expanded Initially L.C was contra-indicated in acute cholecystitis but now LC is technically feasible in majority of the patient with acute cholecystitis and complicated cholecystitis but compared with LC the conversion rate to open surgery and operative time were higher with increase risk of bleeding and bile duct injury in these instance .The difficulty may be due to severe adhesion inflammation ,fibrosis in identifying and dissecting the target structure within Calot's triangle. In these situation difficulty of completing LC increases significantly, with more risk of bleeding and CBD injuries, then LSC[10,11] is a good option for these difficultcholecystitis[12]. This study confirms the feasibility and safety of performing LSC thus avoiding conversion to opencholecystectomy in most patient. TO complete LSC identify and dissect Hartman pouch circumferentially and then incise at the level of Hartmanpouch. Inspect the open Hartman inside stone or milk out any impacted stone flush with N/S and then close the Hartman pouch with endoloop suture with or without clips. Wash the subhepatic space with N/ saline put Drain in subhepatics pace and Check for hemostasis and any bile leak from stumps. In this series all cholecystitis were performed with initial purpose of total removal of gall bladder laparoscopically and were only converted to LSC techniques due to severe inflammations in calot's triangles[13]. We should understand that not all cholecystectomy can be completed Laparoscopically some must converted to open surgery. In various studies conversion rate during LC from 0-9%[14,15,16]. Conversion is not complication but a means of preventing more serious problems. So LSC is not a routine choice but only in complicated cholecystitis is feasible and safe option rather than to open cholecystectomy.

## CONCLUIONS

Laparoscopic subtotal choleycytectmy is relatively safe and feasible option in complicated cholecystitis where identification of target structure in calots triangle is difficult. LSC should be performed by an experienced surgeon and otherwise conversion to open cholecystectomy is a safe technique to prevent serious morbidity.

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