



## A Comparative Study of Laparoscopic Cholecystectomy and Mini-Lap Cholecystectomy

### KEYWORDS

Minilap cholecystectomy. Laparoscopic cholecystectomy

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**ABSTRACT** *the multitude of pathological processes involving the gall bladder is significant cause of morbidity and mortality all over the world.*

*So cholecystectomy has become the most commonly performed elective surgical operation throughout the world and one of the commonly performed surgeries in our country.*

*Conventional cholecystectomy is associated with significant morbidity although it is safe and reliable procedure.*

*As more and more emphasis is laid on minimal invasive surgery now days the scenario has dramatically change by newer operative procedures and hence, in this study we have included minimal invasive surgery in form of laparoscopic cholecystectomy and Minilap cholecystectomy*

### INTRODUCTION:

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Minilap cholecystectomy is minimally invasive surgery which can be offered to patients where facility for laparoscopy is not available; patient is not fit for laparoscopic surgery or general anaesthesia, previous history of abdominal surgery.

Which are laparoscopic cholecystectomy and

- Conventional Minilap cholecystectomy – 6.1 -10 cms incision
- Modern Minilap cholecystectomy- 4.1-6 cms incision
- Micro Minilap cholecystectomy < 4 cms incision

Carl Langenbuch performed first cholecystectomy on July 15<sup>th</sup> 1882

The first laparoscopic cholecystectomy was performed by Carl Muhe in 1985, 104 years later.

The concepts of Micro Minilap cholecystectomy was described as early as 1982

Surgeons have realized that surgical wound doses contribute to morbidity and mortality. The surgical community has become aware of concept of minimally invasive surgery.

### AIM AND OBJECTIVES:

The aims and objectives of this studying is to compare laparoscopic cholecystectomy with Minilap cholecystectomy with respect to their advantages and disadvantages, their merits and demerits at various level:

- a. Operative Technique
- b. Post-operative pain and analgesic requirement
- c. Post-operative Hospital stay
- d. Review the complications:
  - Per operative
  - Anaesthetic
  - Post-operative
- e. Commencement of oral intake
- f. Cosmetic value
- g. Return to normal work
- h. Cost evaluation
- i. Conversion rate, duration of Surgery.

### MATERIALS AND METHODS:

The 25 cases were studied in both categories from 2002 to 2004 in department of General Surgery in Smt. NHL municipal medical college and Sheth V.S. General hospital (laparoscopic and Minilapcholecystectomy) retrospectively

and prospectively and the information recorded in planned set proforma on the basis of references available in the literature and with guidance of my teacher's experience.

After filling the details of proforma master chart was prepared. Detailed analysis was done and various observations derived, discussed and concluded.

### **Selection of patients**

1. Major criteria are as follows:
2. Selection of patients in both procedures randomized on alternate bases.
3. Patients presenting with biliary colic and were proved to be suffering from calculus cholecystitis by ultrasonography and having normal common bile duct free of calculus were only selected.
4. All patients operated electively
5. No other surgically correctable intraabdominal disease or disorder present
6. Patient requiring associated abdominal procedure (e.g., common bile duct exploration) were excluded.
7. Some routine investigations were performed in all patients with minor variations and largely similar pre-operative preparations were made for all patients.

Conventional laparoscopic cholecystectomy is done by using 4 ports. In Minilap cholecystectomy, 4 cm subcostal muscle splitting oblique incision is kept approximately 2.5 cm below costal margin and starting at lateral border of right rectus muscle and parallel to right subcostal incision. Skin and subcutaneous tissue is incised and abdominal muscles exposed. The muscle are split or cut in direction of fibers and peritoneum exposed.

Modified long retractors with mounted fiber optic light source are used. Operating manoeuvres are performed with surgeon's hands above skin level. The peritoneum over cystic duct and common bile duct to incised. The cystic duct and artery are identified. The cystic artery is suture ligated or occluded using two tantalum clips medium sized. Cystic duct is similarly suture ligated or clip occluded using two tantalum clips medium-large size with external clip applicator. The artery and duct are then transected. The gall bladder is removed from cystic duct side.

### **RESULTS**

1. Peak incidence of calculus cholecystitis is found in 4<sup>th</sup> and 5<sup>th</sup> decade of life
2. Higher incidence of cholecystitis is found in females
3. Right hypochondrial pain and nausea, vomiting, were commonest presenting symptoms. Commonest sign was right hypochondrial tenderness (Murphy's) sign positive
4. Out of 25 cases of laparoscopic cholecystectomy 2 were converted into open procedure so success rate was 92%
5. Out of 25 cases of Minilap cholecystectomy extension of incision was done in one case. So success rate was 98%

6. Out of 50 cases blood transfusion was required in none of the cases.
7. Most of the cases resumed diet on first post-operative day
8. Mean post-operative stay in laparoscopic cholecystectomy was 2.6.
9. Mean post-operative stay in Minilap cholecystectomy was 2.68
10. Days of return to work were almost equal in laparoscopic cholecystectomy and Minilap cholecystectomy.

### **CONCLUSION**

Laparoscopic cholecystectomy is gold standard treatment for calculus gallbladder diseases. Patient compliance was excellent in both procedures. In minilap cholecystectomy due to small muscle cutting incision and minimal bowel handling post-operative ileus, vomiting and pain were minimal. Minilap cholecystectomy is technically more demanding than laparoscopic cholecystectomy. It has comparable result and can be safe and acceptable alternative to laparoscopic cholecystectomy where facilities for laparoscopy are not available.

### **DISCUSSION AND OBSERVATION:**

In present series of 50 cases of calculus cholecystitis the age range from 30-70 years, peak incidence of cholecystectomy was in 4<sup>th</sup> and 5<sup>th</sup> decade of life with female preponderance reflecting high incidence of calculus cholecystitis

The commonest presentation was right upper abdominal pain and nausea vomiting, and commonest sign was right hypochondrial tenderness (positive Murphy's sign)

The conversion rate of laparoscopy cholecystectomy to open cholecystectomy is 8% in laparoscopic cholecystectomy and 4% in mini lap cholecystectomy. The reason for conversion from laparoscopic cholecystectomy to open is severe adhesion with inflammation in Calot's triangle & short cystic duct. Due to gross obesity incision was extended in mini lap cholecystectomy. The time required for laparoscopy cholecystectomy longest being 100 min & shortest 40 min with mean time 60 min & for mini lap cholecystectomy longest being 65 min & shortest 25min with mean time 42min.

In both laparoscopic & mini lap cholecystectomy parenteral analgesic & antibiotics were given for one day only. Oral analgesic requirement was slightly higher in mini lap cholecystectomy than in the laparoscopic cholecystectomy. Oral days of antibiotics requirement were almost equal in both laparoscopic and mini lap cholecystectomy.

The early resumption of bowel activity & early resumption of oral feeds in mini lap cholecystectomy was due to minimal bowel handling & result are comparable to that of patients undergoing laparoscopic cholecystectomy. Post-operative stay is comparable in both laparoscopic & mini lap cholecystectomy.

Observation	Conventional laparoscopic cholecystectomy	Mini-lap cholecystectomy

Time	Longest: 100 min. Shortest : 40 min. Mean: 60 min.	Longest: 65 min. Shortest : 25 min. Mean: 42 min.
Conversion rate into open cholecystectomy	8 % (2 patient)	4 % (1 patient)
Number of days of post-operative analgesics	Longest: 5 days Shortest: 4 days Mean: 4.2 days	Longest: 6 days Shortest: 5 days Mean: 5.5 days
Number of days of post-operative antibiotics	Longest: 6 days Shortest: 6 days Mean: 6 days	Longest: 8 days Shortest: 7 days Mean: 7.4 days
Days of resumption of bowel action	Bowel sound: 8 hr Flatus passed: 1.5 day Stool passed: 2.5 days	Bowel sound: 7hr Flatus passed: 1 day Stool passed: 2.5 days
Days of return to work	13 days	14 days

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