

## Mini Cholecystectomy through a 5cm Subcostal Incision Experience at NSSSH Lahore

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### ABSTRACT

**Objective:** This study was conducted to assess Cholecystectomy through a 5cm subcostal incision.

**Material and method:** This retrospective study was conducted at the department of General Surgery at NSSSH Lahore from January 2009 to June 2010. This study included 90 patients with cholelithiasis. 76 were male and 14 were female. Mean age was 43 years (18-77 years). Both acute and chronic cholecystitis was included.

**Results:** Cholecystectomy through 5cm subcostal incision was possible in 86 patients. In 4 cases, the incision had to be extended by 2cm due to operating difficulties. None of the patient was converted to CC. The average operating time was 45 minutes (30 - 70 mins) and the average blood loss was 70 ml (30 – 120 ml). The average post-operative hospital stay was 2 days (1 - 5 days). All patients returned back to work within 2 weeks of surgery. The mean follow-up was 1 year.

**Conclusion:** Mini Cholecystectomy is a safe procedure with shorter operating time, better cosmesis, less pain, few complications and short post-operative stay as compared to Open Conventional Cholecystectomy. The technique is cost effective, easy to practice and can benefit majority of patients. It may be recommended as a procedure of choice where laparoscopic facilities are not available.

**Keywords:** Open Conventional Cholecystectomy (CC), Mini Cholecystectomy (MC), Laparoscopic Cholecystectomy (LC).

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### INTRODUCTION

The Open Conventional Cholecystectomy (CC) through a 7 – 10 cm long muscle cutting incision was considered the gold standard of treatment for symptomatic calculi cholecystitis<sup>1</sup>. Carl Langenbech performed the first open Cholecystectomy on 15 July 1882<sup>2</sup>. The use of smaller incision of 3 – 5 cm in Mini Cholecystectomy (MC) with a limited muscle cutting proved to have the advantage of reduced hospital stay because of less pain<sup>3-4</sup>. Since the 90s, LC is considered as the procedure of choice for gall stones<sup>5</sup>, despite the high risk of CBD injury which has been recorded upto 10 fold compared with that after CC<sup>6-7</sup>. MC was first described more than 2 decades ago by Dubois and Bortholet<sup>8</sup> and favourable results were reported.

Although LC is considered as gold standard for gall stones, MC is an alternative, especially in centres where laparoscopic facilities are not available because it does not need special training, equipment and is also cost effective.

This study was conducted to assess Cholecystectomy through a 5 cm subcostal incision.

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### MATERIAL AND METHODS

This retrospective study was conducted at Surgical Unit I of Nawaz Sharif Social Security Teaching Hospital, Lahore which is the tertiary unit of PESSI. 90 consecutive patients with gall stone disease, who underwent MC from January 2009 to June 2010, were included in this study. Patients with abnormal LFT's and dilated CBD on USG were excluded as standard protocol. There were 76 women and 14 men and the median age was 43 years (18-77 years). 83 had gall stones without any evidence of acute inflammation of the gall bladder whereas 7 had acute cholecystitis. The effect of mini cholecystectomy on hospital stay, pain experienced and complications were observed.

**Operations:** A personal standardized technique for MC was established after a 3 years experience of performing the operation in patients with chronic cholecystitis. The incision was started approximately 3 cm to the right of the midline and ran obliquely parallel to and 3 cm below the right costal margin. The initial length of the incision was 4 – 5 cm, depending on the size of the patient and the degree of gall bladder distension: it was extended if necessary but did not exceed 6cm. The rectus muscle was cut with diathermy. In a patient with markedly distended gall bladder, decompression of the gall bladder was the first step after entering the

abdominal cavity. All except 5 patients had retrograde or cystic duct-first' Cholecystectomy. The stumps of the cystic duct and cystic artery were ligated with 2/0 Polyglactin (Vicryl). Drain was placed in only one patient with pericholecystic fluid collection. After closing the surgical wound, field block was routinely performed with 20ml of 0.25% Bupivacaine injection deep into the plane of the intercostal nerve. Patients were commenced on free fluid and light diet on first post-op day. The patients were usually discharged the next day. All patients were reviewed in the outpatient clinic 2 weeks following discharge.

## RESULTS

Cholecystectomy through subcostal incision was possible in 86 patients. In 4 cases, the incision had to be extended by 2 cm due to adhesions in the area of Calot's triangle. None of the patient was converted to CC. The average operating time was 45 minutes (30 - 70 mins) and the average blood loss was 70 ml (30 – 120 ml). Drain was placed in one patient which was removed after 48 hours. The average post-op stay for the patient was 2 days. Table 1 and 2 demonstrates the sex and age distribution of the patient.

Table-1: Sex distribution of patients (n=90)

Sex	No. of cases
Female	76
Male	14

Table-2: Age-group (n=90)

Age-groups (years)	No. of cases
< 40	7
41 – 50	42
51 – 60	30
> 60	11

We had 5 complications in our series which are indicated in Table 3. None of them were serious and were treated conservatively. There was no mortality in our study.

Table-3: Complications of Mini Cholecystectomy

Complications	No. of cases
Wound Bleeding	1
Wound Infection	2
Urinary Retention	1
Ileus	1
Pulmonary compl	Nil
Sub-hepatic Collection	Nil
CBD Injury	Nil
Total	5

## DISCUSSION

The incision of Open Cholecystectomy has been getting smaller over the past decade with an attendant reduction in post-operative morbidity<sup>9</sup>. Many surgeons feel more comfortable adapting to MC rather than LC<sup>10</sup> because of the obvious familiarity of operating directly on the biliary tree rather than indirectly, using a two-dimensional image on a video monitor.

The aim of this procedure is to remove safely the disease gall bladder with little trauma, early recovery with short hospital stay and better cosmesis. More than 2000 cases of MC have been reported world-wide without any death or major CBD injuries since first report in 1982<sup>11</sup>.

In our study, the average wound length was 5 cm, the average operating time was 45 minutes and the average hospital stay was 2 days. Our results compare favourable with study conducted by Kelly and Borr<sup>12</sup>; and Nasrullah Khan *et al*<sup>13</sup>. The results of MC in acute cholecystitis in this study compare favourably with those reported for LC but the costs are lower.

## CONCLUSION

Mini Cholecystectomy is a safe procedure with shorter operating time, better cosmesis, less pain, few complications and short post-operative stay as compared to CC. It may be recommended as a procedure of choice where laparoscopic facilities are not available. MC is now performed as a day case surgery in many centres<sup>14</sup>. It should be considered in every case of gall stone disease particularly in a developing country in which the health care budget is limited. However, special training is essential to become familiar with this technique.

## REFERENCES

1. Roslyn JJ, Binns GS, Hughes EFX, Saunders–Kirkwood K, Zinner MJ, Cates JA. A contemporary analysis of 42,474 patients. *Ann. Surg.* 1993;218:129-137.
2. Langen BC. Ein Fall Von Exsiration der Gallen blasé wegen chronischer cholelithiasis. *Heilung Borklin wochenscher* 1982;19:725-7.
3. Assalia H, Sohein M, Kopelman D, Hashmonai M. Minicholecystectomy Vs Conventional cholecystectomy: a prospective randomized trial implication in the laparoscopic world *J. Surg.* 1993;17:755-9.
4. O'Dwyer PJ, Murphy JJ, O'Higgins NJ, Cholecystectomy through a 5 cm subcostal incision *Br. J. Surg* 1990;77:1189-90.
5. Mouret P. From the first laparoscopic cholecystectomy to the frontiers of laparoscopic surgery; the future prospective. *Dig. Surg.* 1991;8:124-125.

6. Rossi RL, Schirmer WJ, Braasch JW Laparoscopic bile duct injuries: risk factors, recognition and repair. *Arch. Surg.* 1992;127:596-601.
7. Deziel DJ, Millikan KW, Economou SG, Doolas A, Ko ST, Airan MC. Complications of laparoscopic cholecystectomy: a national survey of 4,292 hospitals and analysis of 77,664 cases. *Am. J. Surg.* 1993;165:9-14.
8. Dubois F, Berthelot G, Levard H. Cholecystectomy by coelioscopy. *PressMed.* 1989;18:980-982.
9. Rozsos L, Jako G. Randomized trial of laparoscopic cholecystectomy and mini laparotomy cholecystectomy. *Br. J. Surg.* 1996;83:708.
10. Tate JJT, Lau WY, Leung KL, Li AKC. Laparoscopic versus mini-incision cholecystectomy. *Br. J. Surg.* 1997;84:1683-1686.
11. Majeed AW, Troy G, Nicholl JP *et al.* Randomized, prospective, single-blind comparison of laparoscopic versus small-incision cholecystectomy. *Lancet.* 1996;347:989-94.
12. Kelly TJO, Borr H. Cholecystectomy through 5 cm subcostal incision. *Br. J. Surg.* 1990;320:7.
13. Khan N, Haleem A, Ahmad I. Cholecystectomy through mini laparotomy incision. *Gomal J. of Med. Sc.* 2009:92-95.
14. Seale AK, Ledet WP. Minicholecystectomy. A safe, cost effective day surgery procedure. *Arch. Surg.* 1999;134:308-10.