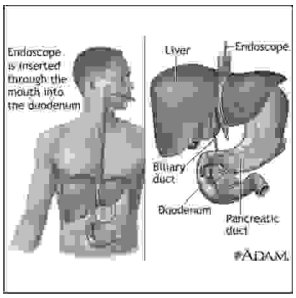
ORIGINAL PROF-1048

CONVENTIONAL OPEN AND MINI CHOLECYSTECTOMY;

A COMPARISON IN THE TREATMENT OF GALL STONE DISEASE REGARDING POSTOPERATIVE PAIN, AND HOSPITAL STAY



DR. ABDUL MANAN, FCPS
Senior Registrar Surgery,
Accident and Emergency Department,
Nishtar Medical College/Hospital, Multan.

DR. IRFAN AHMED, FCPS, FRCS
Registrar, Surgical Unit-IV,
Nishtar Hospital, Multan.

DR. FARRUKH AFTAB, FCPS
Senior Registrar Surgery,
Accident and Emergency Department,
Nishtar Medical College/Hospital, Multan.

ABSTRACT... Introduction: Gall stone disease a second commonest abdominal problem after acute appendicitis, which needs proper and early investigation to reduce the agony and complications of the disease. For acute attacks of cholecystitis in old days, conservative treatment was recommended. **Objective:** To compare the conventional open and mini-cholecystectomy. **Material and Methods: Setting:** Nishtar Hospital, Multan. **Duration:** Six months (From Oct 1998 to Mar 1999). **Sample Size:** 50 cases. **Sampling Technique:** Purposive, non-probability. **Study Design:** Comparative, cross-sectional study. **Results:** Among 50 patients of gall stone, 8 (16%) were male and 42 (84%) were female. As regards age, 16 (32%) were of < 40 years, 14 (28%) between 41-50 years and remaining 20 (40%) were of > 50 years. Out of 50 patients, 32 (64%) patients presenting with pain right hypochondrium, in 14 (28%) patients presenting complaint was pain epigastrium. In 25 patients of group-A, who were treated conventional open cholecystectomy; the average hospital stay was 8.66 days with shortest stay of 6 days and longest stay of 10 days. Out of 25 patients (16 (64%) patients were discharged after 8th day while 4 (16%) patients were discharged after patients were discharged after 6 days. In the 25 patients of group-B who were treated by minicholecystectomy, the mean hospital stay was 3.33 days with shortest of 2 days and longest of 5 days. Eight (32%) patients were discharged on 2nd postoperative day, while 14 (56%) were discharged on the 3rd postoperative day. **Conclusion:** Mini-cholecystectomy is associated with less patients discomfort and decreased incidence of postoperative complications.

Key words: Mini-Cholecystectomy, Cholelithiasis, Cosmetics, Conventional Cholecystectomy.

INTRODUCTION

Gall stone disease a second commonest abdominal problem after acute appendicitis, which needs proper and early investigation to reduce the agony and complications of the disease[1]. For acute attacks of cholecystitis in old days, conservative treatment was recommended. But now with the advancement in the field of surgery, it is advised to apply proper surgical treatment i.e.

cholecystectomy. 30% of the patients develop complications due to the delay in surgical treatment. Both the morbidity and mortality are increased in those patients who develop complications due to gall stone disease and surgery performed after the onset of complications

The clinical presentation of gall stone disease is variable. Patient can present with the pain in the right hypocondrium, pain in epigstrium, dyspepsia or vomiting. In acute cases, fever with the rigors and pain may be the presenting complaints[2]. All the patients should be investigated properly. Investigations like complete blood examination, complete urine examination, ultrasonography abdomen and liver function tests should be performed in all the patients. Exact cause of gall stone formation is not known. Possibly metabolic problems, infection, abnormalities in bile composition and stasis are responsible factors[3]. In old days patients use to have conservative treatment for acute attacks. Since the advancement in surgical facilities it is better to apply the proper surgical procedure i.e. cholecystectomy (conventional, mini or laparoscopic) in symptomatic patients or patients with complication of gall stone[4].

Symptomatic gall stone disease has been treated for a century. Carl Langenbuch performed first cholecystectomy through a "T" shaped incision which was perfected by Theodor Kocher[5,6]. Kocher;s incision starts from the xiphoid process and it runs 5cm below parallel to can be done the right costal margin for about 10-30 cm, depending upon the surgeons to do cholecystectomy through a small incision[7].

The treatment of choice for cholecystitis is cholecystectomy. It can be done as conventional open cholecystectomy by giving 5-6 inches long subcostal incision in obese patients with the wide costal angle. Mini cholecystectomy can be performed through a smaller incision about 5 cm in the right subcostal region. Mini cholecystectomy requires less operating time, less postoperative pain and early return to work than standard (open conventional) cholecystectomy[8]. On the other hand, mini-cholecystectomy can be performed through a smaller incision about 5 cm in the right subcostal region. Cholecystectomy can also be performed with the help of a laparoscope but it is quite costly for the common people of our region. In 1987 laparosocpic cholecystectomy was added to the list of surgical treatment of gall stone disease, which is an established standard procedure[9]. But it is very costly. So, mini-cholecystectomy can be used as a viable alternative to laparoscopic cholecystectomy especially in patients who cannot tolerate laparoscopic procedures and in areas where cost containment is critical[10].

PURPOSE OF STUDY

To compare the conventional open cholecystectomy and mini-cholecystectomy.

MATERIAL AND METHODS

Setting

Nishtar Hospital, Multan.

Duration

Six months.

Sample Size

50 cases

Sampling Technique

It was Purposive, non-probability sampling.

Inclusion Criteria

1. Patients with symptoms and signs of gall bladder stone.
2. Patients with normal LFTs.
3. Patients of either sex above the age of 13 years.
4. No history of jaundice.

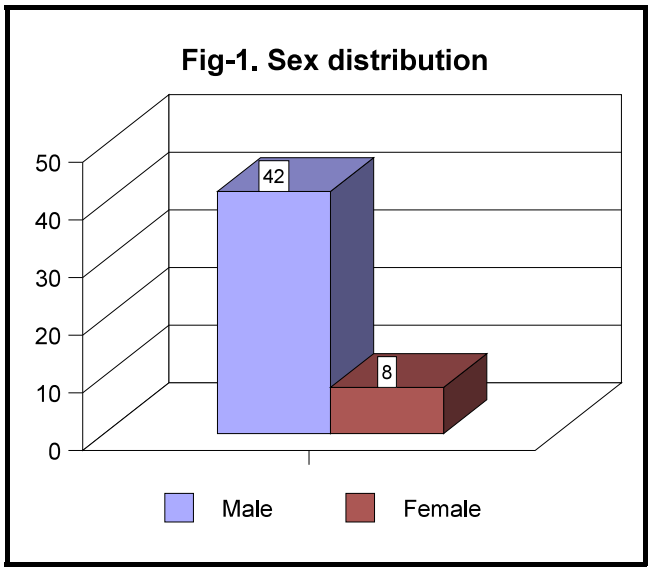
Exclusion Criteria

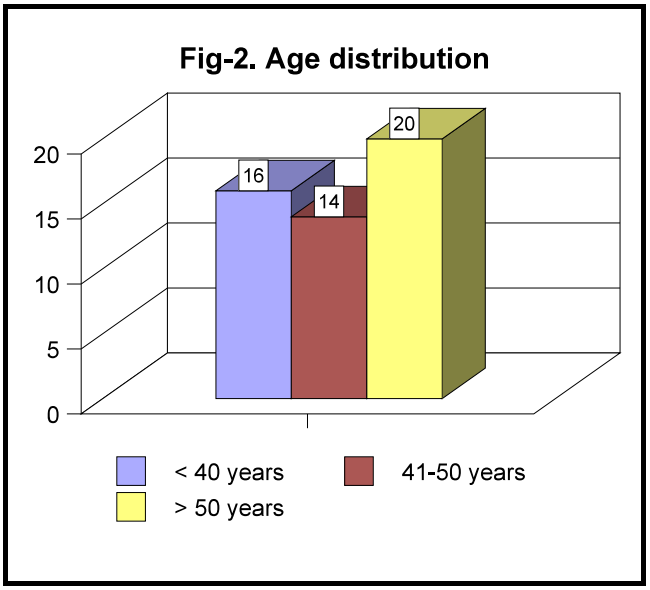
1. Patients with jaundice.
2. Patients with stone in CBD.
3. Patients with mass right hypochondrium.
4. Patients of either sex below 13 years of age.
5. Patients with medical problems like diabetes mellitus, hypertension and uraemia.

Study Design
It was comparative, cross-sectional study.

RESULTS

This comparative, cross-sectional study was conducted in Surgical Ward, Nishtar Hospital, Multan during the period from October 1998 to March 1999.





A total of 50 patients were included in the study. Among 50 patients of gall stone, 8 (16%) were male and 42 (84%) were female (Fig-1). Female to male ratio was 5.25:1.

As regards age, 16 (32%) were of < 40 years, 14 (28%) between 41-50 years and remaining 20 (40%) were of > 50 years as shown in Fig-2.

Out of 50 patients, 32 (64%) patients presenting with pain right hypochondrium, in 14 (28%) patients presenting complaint was pain epigastrium. While in 6 (12%) patients dyspepsia was the major symptoms and in 37 (74%) patients the vomiting was present off and on Table-I.

In 25 patients of group-A, who were treated conventional open cholecystectomy, the average hospital stay was 8.66 days with shortest stay of 6 days and longest stay of 10 days. Out of 25 patients (16 (64%) patients were discharged after 8th day while 4 (16%) patients were discharged after 6 days. The remaining 5 (20%) patients were allowed to go home after 10 days. In the 25 patients of group-B who were treated by minicholecystectomy, the mean hospital stay was 3.33 days with shortest of 2 days and longest of 5 days. Eight (32%) patients were discharged on 2nd postoperative day, while 14 (56%) were discharged on the 3rd postoperative day. Rest of the 3 (12%) patients were discharged on 5thpostoperative day as shown in Table-II.

Table-I. Distribution of Patients According to Symptoms

Symptoms	No. of Pts	% Age
Pain right hypochondrium	32	64.0
Pain epigastrium	14	28.0
Dyspepsia	06	12.0
Vomiting	37	74.0

Out of 25 patients of group-A, 6 (24%) developed immediate postoperative complication like wound infection, while in remaining 19 (76%) patients, the recovery was smooth. In 25 patients of group-B, 1 (4%) patient, the preoperative complaint of dyspepsia persisted (Table-III).

Table-II. Length of Hospital Stay		
Day of Discharge	**Conventional Cholecystectomy**	**Mini Cholecystectomy**
2nd	-	08(32%)
3rd	-	14(56%)
4th	-	-
5th	-	03(12%)
6th	04(16%)	-
7th	-	-
8th	16(64%)	-
9th	05(20%)	-
Average	8.66 Days	3.33 Days

Table-III. Immediate Postoperative Complications		
Complication	**Conventional Cholecystectomy**	**Mini Cholecystectomy**
Severe Pain	14(56%)	04(16%)
Moderate Pain	-	-
Mild Pain	06(24%)	01(04%)

DISCUSSION

Gall stone disease is a common disease involving the hepato-biliary system and is quite common throughout the world as well as in our country. The clinical presentation is variable. Patients may be asymptomatic or may present with acute or chronic cholecystitis, empyema gall bladder and obstructive jaundice. The incidence of gall stone disease is increasing in our society probably due to various factors like increase incidence of early marriage, use of oral contraceptive pills, oral estrogen replacement therapy for climacteric symptoms and change in dietary habits etc.

In present study the female to male ratio of gall stone disease is 4.55:1, which correlates, to study conducted in Chandka Medical College, Larkana, Pakistan[11]. While different studies conducted in Europe showed female to male ratio 3:1.

USG abdomen showed gallstone in all the 50 (100%) of present study. Another study conducted in Nishtar Hospital, Multan in 1998-99 also showed USG abdomen gallstones in 100% patients[12]. Thus the study showed that USG abdomen is the most reliable investigation in the diagnosis of gall stone disease but it has certain limitations like presence of excessive bowel gases and acute inflammation of gall bladder.

A study was conducted in K.V.S.S. Site Hospital, Karachi, which discussed 10 years, experience on mini-cholecystectomy versus 10 years experience of conventional cholecystectomy. In this study mini-cholecystectomy was performed through a small (about 3.5 cm) subcostal incision and cases were studied for operative time, postoperative pain, postoperative hospital stay, resumption of daily life and work. It states that as a result of comparison of 2 procedures it is concluded that mini-cholecystectomy is superior to conventional cholecystectomy[13].

In an international study conducted at Dahr-e Bacheq Hospital, Beyrouth, Liban in 1998 showed that in mini-cholecystectomy no biliary complications, little pain with low analgesia, average hospital stay of 2 days and return to normal working is between 8 days and 14 days[14].

Another study conducted in North Surgical Ward, Mayo Hospital, Lahore and results of this study narrate that less operative time, less postoperative pain and early return to work is seen after mini-cholecystectomy (incision size upto 5 cm) than conventional cholecystectomy[15].

The present study shows that most of the patients undergoing mini-cholecystectomy faced only mild pain which was tolerable with very mild analgesia. A study conducted at National Institute of Cardiovascular Diseases, Karachi shows that mini-cholecystectomy (incision size 3.9 $\pm$ 0.4 cm) is safe as a day care procedure with good pain relief facilitating morbidity with multimodal pain management strategy[16].

A study was conducted in Department of Surgery, Western Infirmary, and Glasgow, UK to see the effect of incision length on patients' recovery. In this study 30 patients with symptomatic gall stones were randomized to cholecystectomy through a 6 cm – 15 cm transverse subcostal incision. Postoperative hospital stay was significantly shorter in 6 cm incision group (median 3 days vs 5 days). In 6 cm group analgesic requirement was also reduced. These results suggest that length of incision may influence patients' recovery following elective cholecystectomy[17]. Results of the present study also correlate with above-mentioned study.

In present study average hospital stay was 3.3 days (2-5 days) in mini-cholecystectomy. An average postoperative hospital stay of 3.3 days was also shown in a study performed at department of gastroenterology surgery, Syth GS Medical College, Mumbai[18]. Another study conducted in department of general surgery, Genoa-Nervi Hospital, Italy showed the average postoperative stay was 2 days[19]. In a study performed at All India Institute of Medical Sciences, New Dehli, in 1994 also showed the average postoperative hospital stay of 2.6 days[20].

A study was conducted in Budapest, Hungry to elaborate the true value of mini-cholecystectomy as compared to conventional and laparoscopic procedures. In this study 710 patients underwent cholecystectomy. In 643 (90.6%) cases out of these 710 patients cholecystectomy was successfully performed through a < 4 cm incision and with 4.1 – 6 cm incision in 61 (8.6%) cases, with 6.1-10 cm incision in 3 (0.4%) cases, and > 10 cm in 3 (0.4%) incisions. They concluded that cholecystectomy performed by modern mini-laparotomy is a realistic alternative to conventional and laparoscopic cholecystectomy[21]. These results also support the results of present study as regard to incision length and cosmetics.

Similarly one study conducted at Lautaro Clinic Arica, Chili also showed that the incidence of postoperative complications is much higher in conventional open cholecystectomy than in mini-cholecystectomy[22.]. The results of present study coincide with these of national and international studies indicating that mini-cholecystectomy is associated with shorter hospital stay, less pain and good cosmetics results as regard to scar mark.

The decreased incidence of postoperative complication is multifactorial in origin. In mini-cholecystectomy there is less tissue trauma, so there is less postoperative pain, short hospital stay and less chances of development of bad looking scar.

CONCLUSION

The mini-cholecystectomy is good alternative of conventional cholecystectomy as far as hospital stay, postoperative pain and cosmetics of scar mark are concerned. Mini-cholecystectomy is relatively economical method for the treatment of gall stone disease, which is associated with less patient's discomfort, and decreased incidence of postoperative complications.

REFERENCES

1. Russel RCG. **The gall bladder and bile ducts.** In: Russel RCG, Williams NS, Bulstrade CTK, editors. Baily and Love's short practice of surgery. 24th ed. London: Arnold, 2004: 1094-1113.

2. Cuschieri SA. **Disorders of the biliary tract.** In: Cuschieri SA, Steele RJC, Moosa AR, editors. Essential surgical practice. Vol.II. 4th ed. London: Arnold, 2002: 375-452.

3. Patel KH, Majeed AW. **Gallstone.** Surg Int 2000; 50: 161-63.

4. Tahir S. **Surgery selected questions.** Faisalabad: Uro Obs (Private) Ltd; 1985: 285-86.

5. Sparkman RS. **100th Anniversary of first cholecystectomy.** Arch Surg 1982; 117: 1525-28.

6. Halpert B, 1982, **50th Anniversary of removal of gall bladder by Carl Langenbuch,** Master surgeons of biliary system (1864-1901).

7. Wood M. **Presidential address; empyema in biliary tract surgery.** Am J Surg 1979; 138: 746-54.

8. Baloch MA. **Laparoscopic versus open cholecystectomy.** Prof Med J 1999; 36: 483-84.

9. Aurangzeb M, Hashmi MI. **Mini-cholecystectomy**

experience of 324 cases. J Postgrad Med Inst 2004; 18(4): 545-52.

10. Oyogoa SO, Komenaka IK, Ilkhami R, Wise L. **Mini-laparotomy cholecystectomy in the era of laparoscopic cholecystectomy: a community-based hospital perspective.** Am Surg 2003; 69(7): 604-7.

11. Sheikh SA. **Biliary tract disease at Larkana over view.** Department of Surgery. Chandka Med College, Larkana Pakistan. J Coll Phy Surg Pak 1996; 6(5): 248-51.

12. Manan A. **Comparative study between open and mini-cholecystectomy.** Dissertation Coll Phys Surg Pak 2001-02.

13. Ahmad QJ, Gulfam MA, Noorani SM, Khan NF. **Ten years experience on mini-cholecystectomy versus ten years experience of conventional cholecystectomy at K.V.S.S.** Site Hospital, Karachi. Pak J Surg 2004; 20(1): 8-10.

14. Daou R. **Cholecystectomy using a mini laparotomy.** Ann Chir 1998; 52(7): 625-28.

15. Chand S, Qadir H, Ali AA, Khan AFA, Chaudhry AM. **Randomized trial of standard cholecystectomy versus mini-cholecystectomy.** Ann King Edward Med Coll 1997; 3: 106-8.

16. Amjad N, Fazal A. **Mini-cholecystectomy now a day stay surgery anaesthetic management with multimodal analgesia.** J Pak Med Assoc 2002; 52(7): 291-95.

17. O'Dwyer PJ, McGregor JR, McDermott EW, Murphy JJ, O'Higgins NJ. **Patient recovery following cholecystectomy through a 6 cm or 15 cm transverse subcostal incision: a prospective randomized clinical trial.** Postgrad Med J 1992; 68(804): 817-19.

18. Supe AN, Bapat VN, Pandya SV. **Laparoscopic vs mini Lap cholecystectomy for gall stone disease.** Indian J Gastro Entrol 1996; 15(3): 94-96.

19. Faggioni A, Moretti G, Mandrini A. **Mini laparoscopic cholecystectomy.** Hepato Gastroentrology, 1998; 45(22): 1014-17.

20. Sennu-V, Misra MC. **Mini-cholcystectomy. An alternative to conventional cholecystectomy.** All India Institute of Med Sciences, New Dehli. Trop Gestroenterol 1994; 15(1) 29-31.

21. Rozsoo I, Ferenczy J, Afshin D, Rozso T. **Cholecystectomy performed by macro- and modern mini-laparotomy.** Orv Hetil 1995; 136(9): 475-81.

22. Renato AG, Gustavo R. **Minimally invasive open Cholecystectomy.** Am J Surg 1998, 18(3): 566-74.