

# An Early Experience of Laparoscopic Cholecystectomy from K.M.C / Civil Hospital Khairpur Mir's

1. Abdul Malik Sangri 2. Azad Lashari 3. Zulfiqar Shar 4. Ali Gohar Bozdar 5. Khush  
Mohammad Sohu 6. Roshan Ali Solangi

1. Assoc. Prof: of Surgery 2. Asstt. Prof: of Surgery 3. Asstt. Prof: of Surgery 4. Assoc. Prof: of Surgery 5. Assoc.  
Prof: of Surgery 6. Prof: of Surgery, Khairpur Medical College / Civil Hospital Khairpur Mir's, Sind

## ABSTRACT

**Objective:** To see feasibility, per operative difficulties and overall results of lap: Cholecystectomy in our newly established minimal invasive surgical setup.

**Study Design:** Randomized Descriptive study.

**Place and Duration of Study:** This study was conducted in Surgical Department of newly established Khairpur Medical College/ Civil Hospital Khairpur Mir's from August 2014 to May 2015.

**Materials and Methods:** The data of all the 100 patients with the diagnosis of gall stone disease was entered in specific proforma, who were admitted at K.M.C / Civil Hospital Khairpur Mir's. The consent for laproscopic procedure was taken prior to surgery. All the base line blood and radiological investigations were done. Cardiac and general anesthesia opinion were also taken. The procedure was carried out by conventional "four port" method on scheduled elective operation list.

**Results:** In this study male to female ratio was 1:6.1 and mean age was 38.5 years. In 52 patients gall bladder was non inflamed and callot's triangle was clear but in 48 cases various kinds of abnormalities were present. In 40% cases operative technique was modified by different means. Conversion rate remained 09%. In 56 cases operative time was 40 mints, in remaining 44 patients it was beyond 40 mints. Post operatively 26 patients developed various minor and major complications. There was no mortality in our series.

**Conclusion:** Lap: Cholecystectomy is safe and effective procedure, applicable to any general as well as teaching hospital. Over all our results are acceptable according to the national and international studies.

**Key Words:** Cholelithiasis, Laproscopic Cholecystectomy Early Experience

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## INTRODUCTION

Gallbladder stone disease has become now one of the commonest indications for elective as well as emergency surgery. Management of cholelithiasis and its complication has evolved dramatically and there have been significant change in the management of patients since the introduction of Laproscopic cholecystectomy in the mid 1990.<sup>1</sup> Professor Dr. Med Erich Muhe of Boblingen, Germany, Performed the first Laproscopic cholecystectomy (LC) in 1985.<sup>2</sup> He did 94 procedures before another surgeon, Phillipe Mouret of Lyon France, performed his first Laproscopic cholecystectomy in 1987<sup>3</sup>. After that Laproscopic cholecystectomy (LC) has almost replaced open cholecystectomy and proved to be an effective and gold standard procedure for the treatment of symptomatic gallstones, worldwide. Since 1987, Laproscopic cholecystectomy started the rate of open

cholecystectomy has continuously decreased. Now in developed countries less than 20% of the total cholecystectomies are performed by open method<sup>4</sup>. Despite these advances, significant variability in approaches, care and outcomes in gall bladder disease management are reported.<sup>5</sup> The Skill of the surgeon, experience in Laproscopic techniques and thorough knowledge of the risk factors are important for Laproscopic management of gall stone disease in difficult situation without increasing the morbidity.<sup>6</sup> The Laproscopic surgery has also few technical limitation like loss of three dimensional perception, indirect contact with intra-abdominal organs, limited tactile feedback while doing dissection and manipulation of tissues. These kinds of difficulties some time leads to conversion of the procedure to open cholecystectomy. Conversion to an open procedure should not be considered a complication, and the possibility that it will prove necessary or advisable, should always be discussed with the patient prior to surgery. In most series, conversion rates are higher with emergency operations. Reported rates range from 1.5% to 15%, with most studies reporting rates around 5% in elective cases.<sup>7</sup> The term difficult cholecystectomy is

**Correspondence:** Dr. Abdul Malik Sangri

Associate Professor of Surgery, Khairpur Medical College/  
Civil Hospital Khairpur Mir's, Sind

**contact No.:** 0300-9317271

**E-mail:** drabdulmaliksangri@gmail.com

considered as multiple per-operative difficult situations which can lead to the risk of complications and also prolong the operation time.<sup>8-9</sup> The operative mortality for lap: cholecystectomy is less than 1 per cent. Post operative complications can occur 10-15 per cent of cases.<sup>10</sup> The purpose of this study is to see the feasibility, difficulties, complications and over all outcome of the Laproscopic cholecystectomy in our newly established setup of minimal malinvasive surgery.

## MATERIALS AND METHODS

This randomized descriptive study was carried out on first hundred cases of Laproscopic cholecystectomies, during the period of ten months, from August 2014 to May 2015 in the Surgical Department of newly established Khairpur Medical College/ Civil Hospital Khairpur Mir's. The criteria of inclusion were all those cases who were medically fit and desired to be operated by LC. The criteria for exclusion was medically unfit patients due to cardio-pulmonary diseases, chronic liver diseases with coagulopathies and patients unfit for general anesthesia due to any other reason. All the cases were operated with the help and guidance of experienced surgeon, who already has performed more than 300 hundred Laproscopic cholecystectomies. Rest of the surgeons were also involved to facilitate, assist and learn the technique. The specific proforma was filled for all these patients and the analysis of whole the data was done through SPSS 10.

## RESULTS

In this study total 100 cases were operated, we found 86 females and 14 male patients. The mean age group in males was 44.2 Years and in females 38.03 was. Male to female ratio was 1:6.1. Majority of the cases were in between the 31 to 40 years age group.

**Table No.1: Age & Sex Wise Distribution**

Age in Years	Male		Female		Total	
	n	%	n	%	n	%
19-30	2	2	23	23	25	25
31-40	5	5	39	39	44	44
41-50	2	2	10	10	12	12
51-60	3	3	8	8	11	11
61 & Above	2	2	6	6	8	8
<b>Total</b>	<b>14</b>	<b>14%</b>	<b>86</b>	<b>86%</b>	<b>100</b>	<b>100%</b>

Per operative difficulties during the procedure were encountered in 44 cases. Gall bladder perforated in 10 cases, mild to moderate oozing of blood from G.B bed occurred in 08 cases, difficulty in grasping and dissection of gall bladder occurred in 12 cases, stones were dropped in 04 cases. Injury to cystic artery was experienced in 02 cases and in 01 case, stomach was perforated. In 04 cases gall bladder delivery was

difficult and in 03 cases the creation of pneumo peritoneum was also not smooth.

**Table No.2: Per Operative Difficulties/ Encounters**

Sr. No.	Difficulties & Encounters	N	%
1	Creation of pneumo peritoneum.	3	6.9
2	Grasping of the G.B.	7	15.9
3	Dissection of G.B.	5	11.4
4	Perforation of G.B.	10	22.8
5	Spillage of G.Stones.	4	9.1
6	Oozing from the G.B Bed.	8	18.2
7	Injury to cystic artery.	2	4.6
8	Stomach perforation	1	2.3
9	Difficult delivery of G.B from Epi: Port.	4	9.1
10	Creation of pneumo peritoneum.	3	6.9
	<b>Total</b>	<b>44</b>	<b>100%</b>

In 40 cases out of 100 the operative technique was modified and certain additional work was done. In 13 cases, gall bladder was decompressed. Packing with gauze peace was carried out in 04 patients. Out of 40 patients, in 05 cases, retrieval bag was used to facilitate the delivery of gall bladder. At the end of procedure the gall bladder bed side and sub hepatic area were washed with normal saline and mopped in 06 cases, followed by the placement of sub hepatic drain.

**Table No.3: Modification of The Operative Technique**

Modification of the technique	Male n=	%	Female n=	%	Total n=
Gall Bladder decompression	04	10	09	22.5	13
Packing with gauze	01	2.5	03	7.5	04
Use of retrieval bag for delivery of G.B	02	5.0	05	12.5	06
Wash with N/Saline & Mopping	01	2.5	06	15.0	08
Placement of Sub hepatic Drain	02	5.0	07	17.5	09
<b>Total</b>	<b>10</b>	<b>25%</b>	<b>30</b>	<b>75%</b>	<b>40</b>

**Table No.4: Duration of Surgery**

Time (mints)	n	Male	%	Female	%
1. < 40	56	07	(12.5)	49	(87.5)
2. > 40	44				
i. 41-60	35	05	(11.4)	30	(68.2)
ii. 61-90	6	01	(2.3)	05	(11.4)
iii. 91-120	3	01	(2.3)	02	(4.6)

Operative time was also calculated in every case. 56 patients were operated within 40 mints, rest of the 44 patients, operative time was beyond 40 mints. 35 patients were operated in between 40 to 60 mints, 06

patients the procedure remained continue for 90 mints and the remaining 03 patients the procedure was even more prolonged and it consumed 90 to 120 mints.

The post operative complications were also recorded up to period of 03 months. Most of them, 15 out of 26 (57.5%) were minor but in few 11 (41.9%) cases they were considerable and required treatment. Early post operative complications were abdominal pain in 05 (19.2%) cases, vomiting in 3 (11.5%) cases, fever in 04 (15.3%) cases, wound infection in 03 (11.5%) cases, sub hepatics collection in 03 (11.5%) cases, biliray leakage through nelaton drain in 02 (7.6%) cases. The late complications which occurred in our patients were port site hernia in 01 (3.8%) case, post operative jaundice in 02 (7.6%) cases, epigastric wound sinus in 01 (3.8%) case and Post cholecystectomy syndrome in 02 (7.6%) cases.

**Table No.5: Post Operative Complications**

Complications	Male (n)	Female (n)	Total (n)	%age
i. Abdominal Pain	01	04	05	19.2(%)
ii. vomiting	01	02	03	11.5(%)
iii. Fever	01	03	04	15.3(%)
vi wound infection	0	03	03	11.5(%)
v sub hepatics collection	01	02	03	11.5(%)
vi Biliray leakage	01	01	02	7.6(%)
vii wound site hernia	0	01	01	3.8(%)
viii Post operative jaundice	0	02	02	7.6(%)
ix Epigastric pore sinus	0	01	01	3.8(%)
x Post cholecystectomy syndrome	0	02	02	7.6(%)
Total	05	21	26	100%

## DISCUSSION

The open cholecystectomy has continues decreased in number after 1987, when first Laproscopic cholecystectomy was performed. In developing countries less than 20% of the total cholecystectomy are performed by open method. In Pakistan the open procedure is still common due to lack of skill and availability of instruments.<sup>11-12</sup> Conversion rate of 2.0% to 15.0% have been reported in difference studies.<sup>13</sup> However the outcome of Laproscopic cholecystectomy is influenced greatly by the training, experience and the judgment of the surgeon.

Our present study elaborates the early experience of Laproscopic cholecystectomy in terms of per operative findings, difficulties, duration, morbidity and post operative complication. In this study 86% patients were female and 14 patients were male, which matches the national and international research papers<sup>13</sup>. Mean age is slightly less than reported in the literature<sup>14-15</sup>. Out of 100 patients 44 cases were those, where some type of difficulties were observed. Gall bladder

perforated in 10 cases, which were handled by applying liga clips or holding the perforation site by grasper. In 12 cases gall bladder found edematous and thick walled, the grasping and dissection from it's liver bed was also difficult. Most surgeons agree that timing of the procedure is an important factor in determining the outcome, in the cases of acutely inflamed gall bladder. However operation within the "golden 72 Hours" from the onset of symptoms has been suggested. Out of such 12 cases, we performed the surgery successfully in 10 cases, but the procedure was converted to open in remaining 02 cases. In 04 cases we also faced difficulties to deliver the gall bladder from 10mm epigastric port, because of large stones and edematous thick walled gall bladder. In that situation we extended the incision to facilitate it's delivery. This kind of modification also has been applied by others.<sup>16</sup>

In 40 percent of the cases, routine operative technique was modified due to certain unusual circumstances and difficulties which were created during the procedure. In 13(22.5%) cases, gall bladder was decompressed prior to dissection and in 04(10%) cases, gauze peace was placed temporary to control the diffuse oozing from liver bed. In 05 cases (12.05%) surgical glove made retrieval beg was used to facilitate the delivery of gall bladder. In those cases where the oozing was not controlled fully, to remain on safe side, sub hepatic drain was also placed for next 24 hours.

In this study we also calculated the time spend on procedure as well as sort out the various factors responsible for prolong procedure. Majority of cases (56%) were done within the period of 40 mints, rest of the cases (44%) operative time took more than 40 mints, even in certain (03%) cases, procedure prolonged up to 120 mints. Significant factors which increased the operating time were, previous abdominal surgery, intrahepatic gallbladder, multiple large calculi, and very thick walled gallbladder. Two other identified factors were, unclear calots triangle and large distended gall bladder.

In this study, the operative time of our earlier cases was greater than that of latter cases. This could be because of edematous, tense, and hypervascular tissue planes. However this finding is comparable to others<sup>17</sup>.

In our study we also observed post operative complications which occurred up to the follow up till 03 months. 15 out of 26 (57.5%) were minor and non significant complications, like fever, abdominal pain, vomiting and wound infection. In other 11(41.9%) cases, more significant complications were seen. They were mild to moderate subhepatic collection, which accrued in 03 (11.5%) cases, and biliray leakage through nelaton drain in 02 (7.6%) cases. We successfully treated both of them without any major intervention. Sub hepatic collection was drained by percutaneous ultra sound guided aspiration and this

leakage stopped spontaneously with in a period of one week post operatively.

In this series we experienced these complications which perhaps were minor duct anomalies arising from liver bed, which healed spontaneously. Other late post operative complications which we faced were, umbilical port site hernia in 01(3.08%) case, and post operative jaundice in 02(7.6%) cases. One among these two cases required referral to specific centre at other station for E.R.C.P and stenting. Symptoms of post-cholecystectomy syndrome occurred in 02(7.6%) cases, which were treated non-operatively.

Our conversion rate to open cholecystectomy remained 09%. Review of national and international data show, their conversion rate of 1.5% to 19% in various studies.<sup>18</sup> The conversion rate is high among different studies from developing countries like Pakistan<sup>19,20</sup>. In our series this conversion rate seems reasonable because in our team one of the experienced person who did more than 300 Laproscopic cholecystectomies, guided and demonstrated the procedure in almost all the cases. The reason for conversion was dense adhesions around the gall bladder and in Callot's triangle which made dissection extremely difficult and completely hampering the proceeding. The other reasons were instrument failure and break down of electricity with inadequate back up of power energy.

## CONCLUSION

Laproscopic cholecystectomy is a safe and effective procedure in our setup and has proved to be applicable in any general as well as teaching Hospitals. Overall results are acceptable in comparison to national and international results. The training of new surgeons, Para medical staff by a experienced teachers, and availability of the instruments and devices are mandatory requirements to start this procedure in a new setup.

**Conflict of Interest:** The study has no conflict of interest to declare by any author.

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