

# An experience of Laparoscopic Cholecystectomy from Secondary Care Center of Pakistan

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## ABSTRACT

**Background:** Laparoscopic Cholecystectomy (LC) is one of the most commonly performed procedures in general surgery. However, in developing countries like Pakistan, still open surgery is commonly performed except tertiary care hospitals. We present our data and case series from a secondary care center of Pakistan over our experience of LC.

**Aim:** To determine the frequency of complications and other outcomes associated with LC in our secondary care setup.

**Methods:** This case series was conducted at two medical centers of Gujranwala, Pakistan over a period of 1 year from January, 2016 to December, 2016. All the patients undergoing LC with the age of 18-60 years were included in the study. Their demographic details including age, gender, clinical findings and laboratory investigations were entered on the proforma. Also the indication for cholecystectomy, conversion into open procedure, complications and biopsy report were assessed. All the data were analyzed using SPSS version 20.

**Results:** A total of 102 patients were included in the study. The mean age of the patients was found to be  $46.23 \pm 16.79$  years. Majority of patients in our study were females (71.6%). Among LC's, 55 procedures (53.9%) were done electively for cholelithiasis, 23 operations (22.5%) were done as interval cholecystectomy after an attack of cholecystitis while 24 operations (23.5%) were performed for acute cholecystitis. In none of these patients, laparoscopy was needed to be converted into open surgery. The most common post-operative complication was found to be right upper quadrant (RUQ) pain which was found in 8 patients (7.8%). The mean stay of the patients in hospital was found as  $3.57 \pm 3.47$  days. In our study, of 102 patients, 6 patients needed re-admission. The most common histology report was chronic infection in 74 patients (72.5%) while metaplasia was found in 1 patient

**Conclusion:** LC is a safe procedure with minimum mortality and morbidity associated with it and may be performed routinely in resource limited centers and countries. However, its learning curve is long and surgeon needs to be patient and experienced enough to have minimum complications.

**Keywords:** Laparoscopic cholecystectomy; laparoscopy; learning curve

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## INTRODUCTION

Laparoscopic Cholecystectomy (LC) is one of the most commonly performed procedures in general surgery practice. Since the introduction of laparoscopy, it has received widespread acceptance and popularity due to many owned advantages<sup>1</sup>. The minimal access approach of laparoscopy has a number of advantages which include reduced post operative pain, shorter hospital stay, early return to activity and of course better cosmetic results. The laparoscopic revolution has triggered a search for a wide range of procedures which are now established or are under evaluation<sup>2</sup>.

However, at the same time, LC was dreaded for such grievous injuries like that to the common bile duct and life threatening hemorrhage. This has

changed over time and laparoscopy has attained the gold standard it initially promised and a large amount of published data supports its current status<sup>3,4</sup>. Wide spread use of the laparoscopic approach has unearthed a different set of problems which seemingly may not catch the eye as being more than troublesome but are not less than a disaster in the making<sup>5,6</sup>. So LC has its own pros and cons at the same time. In Pakistan, laparoscopy has advanced now to so much extent that LC is considered as gold standard for gallbladder stone like any developed country and open cholecystectomy is no more a commonly performed procedure. Due to this, the learning curve has extended and in teaching hospitals, LC is commonly performed by the residents and junior surgeons<sup>7,8</sup>. We planned this study with the objective to determine the frequency of complications and other outcomes associated with LC in our secondary care setup.

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**MATERIALS AND METHODS**

It was a description case series. This study was conducted at Medicare International Hospital, Gujranwala and Allama Iqbal Memorial Trust Hospital Atawa, Gujranwala over a period of one year from January, 2016 to December, 2016. After approval from ethical review board, this study was started. All the patients undergoing LC with the age of 18-60 years were included in the study. We excluded those having pancreatitis and cirrhosis of liver. After informed consent from patients, their demographic details including age, gender, clinical findings, and laboratory investigations were entered on the proforma. Also the indication for cholecystectomy, conversion into open procedure, complications and biopsy report were assessed. All the data were analyzed using SPSS version 20. Simple descriptive statistics were used analyzing mean±SD for quantitative variables and frequency and percentages for qualitative variables.

**RESULTS**

A total of 102 patients were included in the study. The mean age of the patients was found to be 46.23 ± 16.79 years. Majority of patients in our study were females which were 73 in number (71.6%), while remaining 29 patients (28.4%) were male. Pre-operative laboratory tests were performed in all these patients and are summarized in table 1.

Cholecystectomy was done in all of these patients. Among these, 55 procedures (53.9%) were done electively for cholelithiasis, 23 operations (22.5%) were done as interval cholecystectomy after an attack of cholecystitis while 24 operations (23.5%) were performed for acute cholecystitis. In none of

these patients, laparoscopy was needed to be converted into open surgery. The most common post-operative complication was found to be right upper quadrant (RUQ) pain which was found in 8 patients (7.8%). All of the post-operative complications are summarized in figure 1.

The mean stay of the patients in hospital was found as 3.57±3.47 days. In our study, of 102 patients, 6 patients needed re-admission. Among these, one patient developed minor biliary leak which settled with conservative treatment. Three patients were admitted for RUQ pain and were discharged after conservative management. Also 2 patients had bleeding, for which they were re-admitted and were managed conservatively. The histology of all the specimens was obtained and is summarized in table 3.

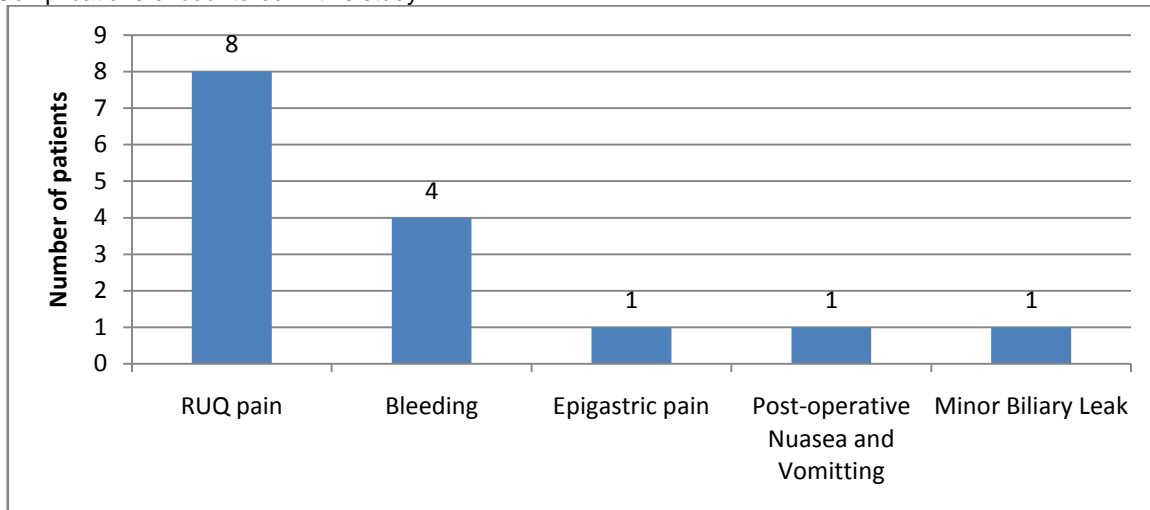
Table 1: Laboratory investigations of the patients included in the study

<b>Liver function tests</b>	
Normal	64(62.7%)
Abnormal but not indicative of biliary obstruction	38(37.3%)
White Blood Cell Count (mean ± SD)	8.24±3.16
C-Reactive protein (mean ± SD)	29.40±2.60

Table 2: Histology reports of the patients

<b>Histology</b>	<b>n</b>
Chronic	74 (72.5%)
Acute on chronic	19 (18.6%)
Acute	2 (2%)
Normal	1 (1%)
Gangrenous	3 (2.9%)
Metaplasia	1 (1%)
Focal cholesterosis	2 (2%)

Fig. 1: Complications encountered in this study



## DISCUSSION

The objective of this study was to determine the complication rate and other outcomes and presentation features of patients undergoing LC in our setup. LC in Pakistan has become popular enough to be done regularly in tertiary care centers particularly as well as most of the secondary care centers. However, in peripheries, still open procedure is being done. In our study, we found that most of the patients were females. It is in accordance with the previously published literature. As the famous 5 F's of cholelithiasis including fatty, Forty, female, fertile and fair are there<sup>9</sup>. In a similar study from Pakistan, 81% of patients were females who underwent LC<sup>10</sup>.

The mean age of patients undergoing LC in our study was found to be 46.23±16.79 years. In a large series of 549 patients from Pakistan, the median age was found to be 41.4 years<sup>11</sup>. Also in a similar kind of study, the average age was found as 33.8 years<sup>12</sup>.

In our study, no patient was needed to be converted into open procedure. However, in most of the studies, the conversion rate varies from 2.6%-7.5%<sup>13</sup>. In a study from Pakistan, the conversion rate was found to be 1.5%<sup>10</sup>. The conversion into open procedure depends on many factors including the stage of the disease, adhesions in perioperative field, anatomy at Callot's triangle, bleeding, injury to surrounding organs and the most importantly the experience of the surgeon<sup>14,15</sup>. In our study, no patient needed to be converted into open procedure, because of the experience of the surgeon as all of these procedures by consultant surgeon with more than 20 years of experience in laparoscopic surgery.

The mortality and morbidity during LC has been varied in literature among many series. The mortality rate has been reported as 0-22% among patients undergoing LC<sup>14</sup>. However we had found no mortality in our series. The complication rate in a study was found as 7.6%<sup>15</sup>. In our study all complications included were 16 among 102 patients (15%). It includes all the minor and major complications. The most dreadful complication in LC is considered to be bile duct injury. In our series only one had minor bile leak which settled with conservative treatment. Again the morbidity and complication rate in LC depends upon many factors including pre-operative clinical condition of the patients, associated co-morbidities, obesity, hypertension, anatomy of the biliary tract and experience of the surgeon<sup>16,17,18</sup>.

So LC is a safe procedure with minimum mortality and morbidity associated with and may be performed routinely in resource limited centers and countries. However, its learning curve is long and surgeon needs to be patient and experienced to have minimum complications during the procedure.

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