

## Original Article

# Frequency of Complicated gallstone disease & Role of Laparoscopic Cholecystectomy

Abdul Razaque Raza Qazi,<sup>\*</sup> Ubedullah Shaikh,<sup>\*\*</sup> Sikandar Azam Yousfani,<sup>\*\*\*</sup> Farkhanda Jabeen Dahri<sup>\*\*\*\*</sup>

## ABSTRACT

**OBJECTIVE:** To determine frequency of complicated gallstone disease and role of laparoscopic cholecystectomy in a tertiary care hospital at Nawabshah.

**STUDY DESIGN:** Prospective analytical study.

**PLACE AND DURATION OF STUDY:** Surgical Unit-III at Peoples University Hospital Nawabshah, Sindh, Pakistan from August 2010 to July 2011.

**MATERIAL & METHODS:** This study consisted of 100 consecutive cases of gallstone disease. Detailed History was taken from all the patients with special regard to the abdominal pain or pain in right hypochondrium, lump in right hypochondrium, vomiting, dyspepsia and fever. Clinical examination of right hypochondrium was especially examined for assessment of Murphy's sign, palpable mass, visceromegaly. Specific investigations especially ultrasound of abdomen was performed as diagnostic modality and for assessment of complicated gallstone disease (eg: thickness of wall of gallbladder, adhesions, empyema, and mucocele). All the patients went for laparoscopic cholecystectomy. Data was analyzed through SPSS software version 16.0. Results were prepared with help of tables and graphs.

**RESULTS:** 100 consecutive cases of gallstone disease were enrolled. 81(81%) were female and 19(19%) were male; with female to male ratio of 4.26:1. The mean age was  $32.78 \pm 2.4$  years. Symptoms of patients were pain in RHC was found 63(63%), pain in RHC associated with epigastrium was seen in 67(67%) cases, dyspepsia was 7(7%) and fever was 9(9%) cases. Ultrasound examination findings were single stone in 24(24%) patients, multiple stones in 76(76%) patients, impacted stone at the neck of gallbladder was found in 28(28%) patients, thick wall gallbladder in 48(48%) patients, empyema gallbladder 12(12%) patients, mucocele 5(5%) patients, contracted gallbladder 13(13%) patients, adhesion around gallbladder in 36(36%) patients and cirrhosis of liver in 3(3%) patients. The common complications seen in this study were nausea and vomiting in 22(22%), chest infection in 16(16%), biliary leak 3(3%) patients and port site wound sepsis in 9(9%) patients. The duration of hospital stay varied from 1 to 3 days. majority 84(84%) were discharged within 2 to 3 days. The patients with complications and conversion had still longer stay.

**CONCLUSION:** Laparoscopic cholecystectomy is a safe and successful procedure for complicated gallstone disease with low threshold of conversion to open cholecystectomy.

**KEY WORDS:** Laparoscopic cholecystectomy, complicated gallstone disease, open cholecystectomy.

\* Associate Prof. SU-III, PUMHS Nawabshah

\*\* PGMS-II, General Surgery

\*\*\* Assistant Prof. SU-III, LUMHS Jamshoro

\*\*\*\* Assistant Prof. SU-III, PUMHS Nawabshah

### Correspondence to:

**Dr. Abdul Razaque Qazi**

Associate Professor SU-III, PUMHS Nawabshah

Contact. 03003216581

## INTRODUCTION:

Biliary diseases are a major health problem worldwide mostly in the adult population<sup>1</sup>. In United State approximately 700,000 cholecystectomies are performed annually<sup>2</sup> and 15% is prevalence of gallstone disease in Pakistan<sup>3</sup>. Laparoscopic cholecystectomy was performed for the first time in 1987 by Prof. Mouret from France<sup>4,5</sup>. The first

laparoscopic cholecystectomy in Pakistan was performed in 1991<sup>6</sup>.

Laparoscopic cholecystectomy procedure had been considered for uncomplicated gallstone disease<sup>7</sup> and complicated gallstone disease was considered to be a contraindication for laparoscopic cholecystectomy. This initial reluctance level has slowly gradually evaporated as the level of experience within the surgical community has increased. However 10 year after its inception, uncertainty persist about the application of laparoscopic techniques to the management of patients with complicated gallstone disease<sup>8</sup>. Object of this study was to carry out the laparoscopic cholecystectomy in patients with complicated gallstone disease include cases of acute cholecystitis with phlegmon, chronic cholecystitis with mucocele, empyema and perforation with pericholecystic abscess.

#### **MATERIALS AND METHODS:**

Prospective analytical study was carried out in the Surgical Unit-III at Peoples University of Medical & Health Sciences Hospital Nawabshah, Sindh, Pakistan from August 2010 to July 2011. This study consisted of 100 consecutive cases of gallstone disease admitted through the outpatient department, as well as from casualty department of Peoples University of Medical & Health Sciences Hospital Nawabshah, who came for complicated gallstone disease as assessed by pre-operative workup. Detailed History was taken from all the patients with special regard to the abdominal pain or pain in right hypochondrium, lump in right hypochondrium, vomiting, dyspepsia and fever. Clinical examination of right hypochondrium was especially done for assessment of Murphy's sign, palpable mass, visceromegaly and recorded in proforma. All patients underwent for base line and specific investigations especially ultrasound of abdomen as

diagnostic modality and for assessment of complicated gallstone disease (eg: thickness of wall of gallbladder, adhesions, empyema, and mucocele). Inclusion criteria were that all patients after counselling for study and taking written consent were included in this study irrespective of their age and sex, complicated gallstone disease include cases of acute cholecystitis with phlegmon, chronic cholecystitis with mucocele, empyema and perforation with pericholecystic abscess. Exclusion criteria include unfit patients for general anaesthesia, pregnant ladies due to risk of foetal loss, patients with carcinoma of gall bladder, patients with acute pancreatitis and patients with obstructive jaundice. Laparoscopic cholecystectomy was done in all cases. Follow up of all these patients was done. Data was analyzed through SPSS software version 16.0, and results were tabulated.

#### **RESULTS:**

The 100 consecutive cases of gallstone disease were operated. Out of 100 patients included in this study 81(81%) were female and 19(19%) were male; with female to male ratio of 4.26:1. There was wide variation of age ranging from a minimum of 20 year to 60 years. The mean age was  $32.78 \pm 2.4$  years.

Symptoms of patients were pain in RHC found in 63(63%), pain in RHC associated with epigastrium was seen 67(67%), nausea & vomiting was seen 22(22%), dyspepsia was 7(7%) and fever was 9(9%). Ultrasound findings revealed were single stone in 24(24%) patients where as multiple stones in 76(76%) patients, impacted stone at the neck of gallbladder in 28(28%) patients, thick wall gallbladder 48(48%) patients, empyema gallbladder 12(12%) patients, mucocele in 5(5%) patients, contracted gallbladder 13(13%) patients, adhesion around gallbladder in 36(36%) patients and cirrhosis of liver in 3(3%) patients (Table 1).

Operative time range 30 minutes to 70 minutes with mean time was  $46.30 \pm 12.96$  minutes.

The common complications seen in this study were nausea and vomiting in 22(22%) patients, chest infection in 16(16%) patients, Biliary leak in 3(3%) patients, port site wound sepsis in 9(9%) patients and shoulder pain in 11(11%) cases, Conversion to open surgery was observed in 2(2%) patient. The duration of hospital stay varied from 1 to 3 days. majority 84(84%) were discharged within 2 to 3 days. The patients with complications and conversion had still longer stay.

**CHART NO. 1**  
Postoperative Complications

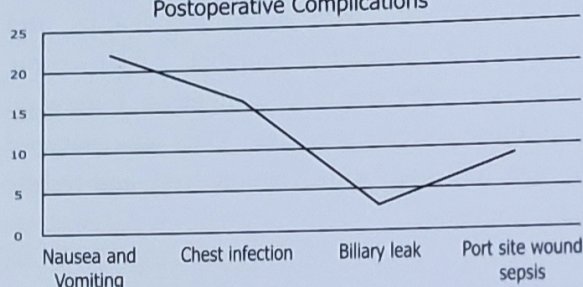


Table No. 1

Ultrasound Finding	Laparoscopic Cholecystectomy	
	No: of Patients	Percent-age
Single Stone	24	24 %
Multiple Stone	76	76 %
Impacted Stone at Neck of Gallbladder	28	28 %
Thick Wall Gallbladder	48	48 %
Empyema	12	12 %
Mucocele	5	5 %
Contracted Gallbladder	13	13 %
Adhesions around Gallbladder	36	36 %
Cirrhosis of Liver	3	3 %

## DISCUSSION:

In the early 1990's Laparoscopic cholecystectomy has established the treatment of choice for gallbladder disease<sup>9,10</sup>. All over the world surgeons found their operating time decreased extensively from several hours to well within 60 minutes or less, with their conversion rate to the open procedure reducing to around 5% to 10% nationwide<sup>11</sup>. These successful results achieved from the improved surgical learning curve and from rapid technological advances in laparoscopic instrumentation<sup>12</sup>.

Gallstones commonly occurred in female and in our study female to male ratio was seen in 4.2:1. Some studies reported different male to female ratio like 1:6 by Channa<sup>13</sup> and 5:5.1 by Murshid<sup>14</sup>. The age ranged from 20 to 60 years with mean age was  $32.78 \pm 2.4$  years. The peak age group for presentation of gallstones in our study is 3<sup>rd</sup> and 4<sup>th</sup> decay which is comparable to other study where peak age group presented between 33 to 44 year<sup>13</sup>. However Murshid showed age range from 13 to 90 year with a mean age of 48.4 years<sup>14</sup>. In our study the pain in right hypochondrium and epigastrium was the commonest presentation 67% followed by nausea and vomiting 22%, dyspepsia 7% and fever 9%. However in study of Laghari et al<sup>15</sup> the patients presented with upper abdominal pain either in right hypochondrium in 51.67% cases or in right hypochondrium and epigastrium in 29.17% cases or epigastrium in 19.17% cases.

The clinical examination were further supported by ultrasound examination which revealed single stone in 24(24%) patients where as multiple stones in 76(76%) patients, impacted stone at the neck of gallbladder was found in 28(28%) patients, thick wall gallbladder 48(48%) patients, empyema gallbladder 12(12%) patients, mucocele 5(5%) patients, contracted gallbladder 13(13%) patients, adhesion around gallbladder in

36(36%) patients and cirrhosis of liver in 3(3%) patients. Ultrasound finding given by Ji et al<sup>16</sup> in their study shows multiple stones in 69.71%, thick wall gallbladder in 41.67% and adhesions in 35% of cases.

In our study operative time range 30 minutes to 70 minutes with mean time was  $46.30 \pm 12.96$  minutes. The mean operative time given by Khan and Oonwala<sup>17</sup> was  $60.5 \pm 17.5$  for OC and  $62 \pm 15.2$  minutes for LC group and Siddiqui<sup>18</sup> was 50 minutes, the range varying from 30 to 110 minutes.

The wound sepsis observed in 9(9%) patients, while in study of Shindhoolimath et al<sup>19</sup> reported wound site infection in 6.3% which is increased in our study. The biliary leak in 3(3%) patients was the complication responsible for conversion in 2% cases. The conversion rate from LC to Open cholecystectomy from 3.9 to 12% as given in different studies<sup>20,21</sup>. Conversion exerts adverse effects on operating time, postoperative morbidity, hospital costs, mobilization and hospital stay<sup>21</sup>. The hospital stay in our study ranged from 2 to 3 days. It is comparable to other studies given by different authors like, 2.6 days by Rosen et al<sup>22</sup> and  $2 \pm 2$  days by Haxdy et al<sup>23</sup>.

### CONCLUSIONS:-

Laparoscopic cholecystectomy is a safe and successful procedure for complicated gallstone disease with reduce hospital stay and minimal scarring especially in the females.

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