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## ORIGINAL ARTICLE

## DIFFICULTIES IN LAPAROSCOPIC CHOLECYSTECTOMY: CONVERSION VERSUS SURGEON'S FAILURE

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**Background:** Laparoscopic cholecystectomy is considered to be gold standard treatment for symptomatic gall stones. Despite several benefits there are still disadvantages of laparoscopic cholecystectomy in difficult cases where anatomy is disturbed even in experienced hand. Aim of this study is to identify advantages of early conversion to open cholecystectomy in difficult cases and how it should not be associated with surgeon's failure. **Methods:** Observational study was conducted at tertiary care hospital of Karachi, Pakistan from January 2012 till June 2015. All patients who presented to general surgery department with symptomatic gall stones and planned for laparoscopic cholecystectomy was included in the study. Demographic data was collected. Preoperative workup includes baselines investigations with liver profile test and imaging study (ultrasound scan). All patient underwent laparoscopic cholecystectomy at first. Operative difficulties, incidence of conversion, reason for conversion and complication intra-operative or postoperative were recorded. Data was analyzed using SPSS 20. **Results:** Out of 1026 patients, 78.26% (803) were female. Mean age of patients were  $41.30 \pm 8.43$  years (range 26–68 years). Common presenting symptoms were pain at upper abdomen and dyspepsia. Most of the patients had multiple gall stones (93.85%). Nine hundred and ninety-two patients (96.68%) of patients underwent successful laparoscopic cholecystectomy. This includes patients in whom dissections were difficult because of disturbed anatomy of calots triangle. Only 3.13% of patients were converted to open cholecystectomy. There was a significant difference ( $<0.05$ ) in complications observed between completed and converted cholecystectomies. **Conclusion:** Conversion from laparoscopic to open procedure should be done in cases of technically difficult situations to avoid significant mortality and morbidity. Surgeons experience had a pivotal role in determining its need and justification.

**Keywords:** Laparoscopic Cholecystectomy; Conversion; Gall stones; Failure; Open cholecystectomy

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### INTRODUCTION

Symptomatic gall stones are more prevalent in western world with an incidence of around 15%. Laparoscopic cholecystectomy stands to be gold standard treatment option.<sup>1</sup> Even in acute setting and in old age, many studies had been performed showing its safety and several advantages over open surgery.<sup>2</sup> Many advantages had been reported in past that includes cosmesis, shorter hospital stay, less pain and postoperative morbidity. Despite these advantages there are several cases where its lethal complications had been reported in cases where anatomy of calot's triangle is difficult to identify or distorted even in experience hands.<sup>3–6</sup> In such cases conversion to open surgery is an option. An early conversion to open cholecystectomy is advised whenever dissection in calot's triangle is difficult, hazardous to bile ducts or when life threatening complication is anticipated.<sup>7,8</sup> Personal ego and feeling of failure is the main two factors of surgeons that contribute to blind and impatient dissection in cases of difficulty<sup>9</sup>.

This study aims to identify the advantages of early conversion to open cholecystectomy and morbidity and mortality associated with continued blind dissection in cases of difficulty in identifying proper anatomy of calot's triangle and how conversion should not be effected by surgeon's feeling of failure.

### MATERIAL AND METHODS

Observational study was done at a tertiary care hospital of Karachi, Pakistan from January 2012 till June 2015. All patients who presented to general surgery department with symptomatic gall stones and planned for laparoscopic cholecystectomy was included in the study. Demographic data was collected. Preoperative workup includes baselines investigations with liver profile test and imaging study (ultrasound scan). All patient underwent laparoscopic cholecystectomy at first. Operative difficulties, incidence of conversion, reason for conversion and complication intra-operative or postoperative were recorded. Data was analyzed using SPSS 20.

**RESULTS**

Out of 1026 patients, 78.26% (803) were female. Mean age of patients were 41.30±8.43 years (range 26–68 years). Common presenting symptoms were pain at upper abdomen and dyspepsia as shown in Table-1. Most of the patients had multiple gall stones (963/1026). Most of the patients presented with multiple comorbid conditions (627/1026) like diabetes mellitus, hypertension, ischemic heart disease or pulmonary diseases.

Normal gall bladder with gall stones was identified preoperatively in 86.79% of patients while rest of the patients had either of the complications of gall stones. Nine hundred and ninety-two patients (96.68%) of patients underwent successful laparoscopic cholecystectomy. This included patients in whom dissections were difficult because of disturbed anatomy of calot’s triangle. Only 3.13% of patients were converted to open cholecystectomy as shown in table-2.

Complications were divided into pre-operative and postoperative complications as shown in Table-3. All patients were discharged on first postoperative day except for 51 patients who developed complications and their stay was in range of 1–3 weeks depending on severity of complications. No mortality was observed in complications group. There was a significant difference (<0.05) in complications observed between completed and converted cholecystectomies as shown in table-3.

**Table-1: Presenting symptoms**

Symptoms	Number of patients	Percentage
Pain at upper abdomen	793	77.29
Intolerance to food (Fat diet)	139	13.54
Nausea/Vomiting	39	3.80
Palpable and tender gall bladder	55	5.36

**Table-2: Operative findings**

Operative Findings	Operative Outcome		Total
	Laparoscopic	Laparoscopic to Open	
Normal Gall bladder	861 (86.79%)	2 (5.88%)	863
Empyema Gall bladder	18 (1.81%)	7 (20.58%)	25
Mucocoele	13 (1.31%)	4 (11.76%)	17
Acute cholecystitis	38 (3.83%)	9 (26.47%)	47
Fibrosed Gall bladder	41 (4.13%)	5 (14.70)	46
Froze callot’s triangle	21 (2.11%)	7 (20.58%)	28
Total	992	34	1026

**Table-3: Comparison of complications**

	Completed n= 992 (96.68%)	Converted n= 34 (3.13%)	p-value
<b>Operative Complications</b>			
Bleeding	11	4	<0.002
CBD injury	6	2	<0.002
Bowel perforation	3	1	<0.05
Ligation of CBD	1	0	<0.001
<b>Postoperative Complications</b>			
Bile leakage	8	1	<0.001
Sub hepatic Collections	3	0	<0.001
Jaundice	7	0	<0.001
Peritonitis	0	0	-
Wound Infection	3	1	<0.001

**DISCUSSION**

In early stages of its development laparoscopic cholecystectomies had several limitations and complications. It had a difficult learning curve for surgeons initially and required greater skill to accomplish it successfully. In initial days there was greater incidences of common bile duct injuries and several other complications.<sup>10,11</sup> Still in this modern world despite of vast experience of surgeons and skills, there are reported complications of this procedure. All because of difficulty in identifying structures in disturbed anatomy. Common difficult situations include complications of gall stones that are acute and chronic cholecystitis with adhesions, Empyema of gall bladder, disturbed anatomy of calot’s triangle, Congenital anomalies and many other conditions.<sup>12</sup>

The current study shows the significance of early conversion to open cholecystectomy in technically difficult situations to avoid substantial morbidity and mortality. Conversion to open cholecystectomy is thought to be failure of procedure which makes surgeons to continue surgery despite in difficult situations.<sup>13,14</sup> The study highlights the importance of early conversion in order to provide better care to the patients.

There shown to be better complication rate in converted group as compared to completed group. Other studies also shows reputation of conversion in favor of patients. It had been reported in one of the study that despite prolonging operative time, incision, postoperative stay and expenses patients usually get benefits from early conversion from laparoscopic cholecystectomies in technically difficult situations. Decision about conversion should be patients centered not to be surgeon’s ego and failure.<sup>15,16</sup>

Undue conversion is not recommended but it should be done in lights of patient’s safety and preventing significant morbidity or mortality. Surgeons experience and skill also plays a key role in preventing undue conversion. This study highlights that conversion from laparoscopic cholecystectomy to open procedure in cases of difficult situation is advisable and is not actually a surgeon’s failure but is a lifesaving procedure reducing chances of mortality and morbidity.

**CONCLUSION**

Conversion from laparoscopic to open procedure should be done in cases of technically difficult situations to avoid significant mortality and morbidity. Surgeons experience plays a pivotal role in determining its need and justification.

## AUTHORS' CONTRIBUTION

AA: Conceptualization of idea, study design and literature search. SS: Data collection, literature search, write-up. RK: Data interpretation, SSS: Proof Reading. FNF: Data Analysis.

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