

## Difficult laparoscopic cholecystectomies. Is conversion a sensible option?

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### Abstract

**Objective:** To assess the overall impact of conversion of laparoscopic cholecystectomy to open cholecystectomy.

**Methods:** The observational descriptive study was conducted at Liaquat University Hospital, Jamshoro, Pakistan, and various private hospitals in the same town by the same surgeon from June 2011 to June 2013. All patients over 20 years of age and of either gender with symptomatic gallstone disease admitted and operated by laparoscopic technique were included. After initial work-up, laparoscopic cholecystectomy was performed by the conventional four-port technique. The variables studied included demographic details, duration of operation, operative complications, and incidence of conversion to open operation, post-operative complications and length of hospital stay. Data was analysed using SPSS 20.

**Results:** Of the 936 patients, 839(89.63%) were females and 97(10.36%) were males with an overall mean age of  $39.88 \pm 8.66$  (range: 29-65 years). Of the total, 108(11.53%) patients presented with a solitary gallstone; the remaining 828(88.46%) had multiple gall stones. Besides, 297(15.34%) had complicated gall stone disease. Tenderness in the right hypochondrium was observed in 897(95.83%) patients, while tenderness with palpable, tender gallbladder with fever and leucocytosis in 39(4.1%). Overall, 120(12.82%) patients presented with co-morbidities comprising diabetes mellitus in 43(4.59%), hypertension in 11(1.17%), ischaemic heart disease in 36(3.84%) and chronic obstructive pulmonary disease in 30(3.20%) patients. Further, 33(3.52%) patients were shifted from laparoscopic dissection to open cholecystectomy.

**Conclusion:** A low threshold for conversion to open cholecystectomy can save the life of patients as continued dissection in difficult situation can lead to life-threatening complications.

**Keywords:** Laparoscopic cholecystectomy, Complicated gallstone disease, Difficult dissection, Conversion to open cholecystectomy. (JPMA 65: 698; 2015)

### Introduction

Laparoscopic cholecystectomy is considered the gold standard operation for symptomatic gallstone disease globally.<sup>1,2</sup> A number of studies have confirmed its safety and various advantages over open cholecystectomy even in acute cholecystitis and in elderly patients.<sup>3-7</sup> Despite its proven safety and other benefits like cosmesis, early recovery and comparatively less pain and post-operative morbidity, a number of studies have reported lethal complications in situations where the Callot's triangle is distorted due to various reasons even in the best surgical hands.<sup>8-13</sup> An early conversion to open cholecystectomy is advised whenever the dissection in the Callot's triangle is found to be difficult, hazardous or when life-threatening complications are anticipated.<sup>14,15</sup> A continued blind and impatient dissection with a feeling of failure and personal ego are the main factors that the surgeons continue to proceed blindly despite having too much of difficulty in identifying the structures. The current study was planned to identify the benefits of early conversion and morbidity

and mortality associated with continued dissection in patients with totally distorted anatomy in the area of Callot's triangle.

### Patients and Methods

The descriptive observational study was conducted at Liaquat University Hospital, Jamshoro, Pakistan, and various private hospitals in the same town by the same surgeon from June 2011 to June 2013. All patients over 20 years of age and of either gender with symptomatic gallstone disease admitted and operated by laparoscopic technique were included. Pre-operative work-up included blood complete picture (CP), liver functions, ultrasound abdomen and computed tomography (CT) scan where needed. Patients with associated medical problems were further evaluated and treated till they were declared fit for surgery. All patients were operated laparoscopically. The variables studied included demographics, operative problems, incidence of conversion, reasons for conversions and post-operative complications. Data was collected on a proforma for every patient and analysed using SPSS 20.

### Results

Of the 936 patients, 839(89.63%) were females and

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**Table-1:** Comparison of operative findings.

Operative finding	Operative outcome		Total
	Completed	Converted	
Normal cystic gallbladder	782(83.54%)	3(0.32%)	785
Empyema gallbladder	27(2.88%)	5(0.53%)	32
Mucocoele with adhesions	23(2.45%)	3(0.32%)	26
Acute cholecystitis with adhesions	21(2.24%)	3(0.32%)	24
Small fibrosed gallbladder with adhesions	32(3.41%)	11(1.17%)	43
Totally frozen Callot's triangle	18(1.92%)	8(0.85%)	26
Total	903	33	936

**Table-2:** Comparison of complications.

	Completed N= 903 (96.47%)	Converted N=33 (3.2%)	P value
<b>Operative Complications:</b>			
Bleeding	17(1.88%)	01(3.03%)	<0.001
CBD injury	8(0.88%)	01(3.03%)	<0.001
Duodenal perforation	09(0.99%)	03(0.33%)	<0.05
Ligation of CBD	02(0.22%)	00(%)	<0.001
<b>Post operative complications:</b>			
Bile leakage	05( 0.55%)	01(3.03)	
Collection in the gallbladder area	03(0.33%)	00(0%)	
Jaundice	05(0.55%)	00(0%)	
Faecal peritonitis	02(0.22%)	00(0%)	<
0.001*			
Biliary peritonitis	01(0.11%)	00(0%)	
Wound infection	04(0.44%)	01(3.03)	

\*P value is statistically highly significant.

CBD Injury: Common bile duct injury.

97(10.36%) were males with an overall mean age of 39.88±8.66 (range: 29-65 years). Of the total, 108(11.53%) patients presented with a solitary gallstone; the remaining 828(88.46%) had multiple gall stones. Besides, 297(15.34%) had complicated gall stone disease. Patients presenting with symptoms suggestive of simple symptomatic gallstones such as right hypochondriac (RHC) pain radiating to back, vomiting, indigestion, flatulence, dyspepsia were 839(89.63%) and 97(10.36%) presented with complications like acute cholecystitis, empyema, mucocoele, and gangrenous gallbladder. Tenderness in RHC was observed in 897(95.83%) patients, while tenderness with palpable, tender gallbladder with fever and leucocytosis in 39(4.1%). Overall, 120(12.82%) patients presented with co-morbidities comprising diabetes mellitus in 43(4.59%), hypertension in 11(1.17%), ischaemic heart disease (IHD) in 36(3.84%) and chronic obstructive pulmonary disease (COPD) in 30(3.20%) patients.

Per-operative findings included normal cystic gallbladder in 782(83.54%) patients, while the rest had one or the other complications of repeated attacks of acute

cholecystitis. Laparoscopic procedure was continued in 903(96.5%) cases despite having difficulties in dissection due to disturbed anatomy, but 33(3.52%) patients had to be converted to open cholecystectomy (Table-1). Post-operative complications were more common in cases where the procedure was completed despite having difficulty in dissection (Table-2). The post-operative stay in hospital was 2-3 days in 814(87%) patients while it was 2-3 weeks in 120(12.8%) patients who developed post-operative complications(p<0.005). Two (0.2%) patients who developed post-operative faecal peritonitis due to duodenal injury developed severe sepsis and died on the 17th day despite aggressive conservative therapy.

## Discussion

Laparoscopic cholecystectomy had a number of limitations and contraindications during the early days of its practical introduction in surgery. The surgeons were learning the technique which was at the time recently introduced and it took some time for surgeons to develop the confidence and skill to perform this operation as a routine procedure. Initially there was a sudden rise in the rate of common bile duct (CBD) injuries and other complications.<sup>16-19</sup> Despite a huge improvement in the technique, vast experience of the surgeons, advanced instruments and anaesthesia techniques, we still come across situations where one is actually faced with a technically difficult situation. Among the common difficult situations include acute cholecystitis with adhesions, empyema gallbladder, distorted anatomy of Callot's triangle, congenital anomalies, electrocautery injury and many other similar conditions.<sup>20,21</sup> The present study highlights the importance of knowing when to stop the laparoscopic procedure and convert it to open technique to avoid life-threatening complications. Conversion of the procedure is usually considered a failure of the procedure and with this thought in mind, surgeons make every effort to complete the procedure laparoscopically. The study emphasises the importance of conversion when it is not possible to move any further with laparoscopic cholecystectomy as it can save the life of the patient. Our results show a very clear-cut increased incidence of operative and post-operative complications where procedure was continued despite tremendous difficulties in dissection. Our point of view is also seconded by other studies emphasising the importance of conversion when needed.<sup>22,23</sup> One study<sup>24</sup> mentioned the adverse effects of conversion like lengthening of the total operative time, post-operative morbidity and hospital expenses, but our perspective is the prevention of complications and safety of patients. Our argument is also supported by a study<sup>25</sup> stating that decision to

conversion should focus on the safety of the patients instead of the length of operation or total cost incurred on procedure.

It is clear that undue conversion is not advisable, but should not be denied when patient's safety and life are under threat. This study suggests that conversion of the laparoscopic cholecystectomy is not actually a failure of the surgeon, as is commonly interpreted, but is a life-saving procedure as depicted by the results of the study. The experience of the operating surgeon plays a pivotal role in this regard.

## Conclusion

Conversion to open cholecystectomy is not a failure, rather it's a proof of maturity and an evidence of professional responsibility as it can avoid life-threatening complications in difficult situations.

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