FACTORS LEADING TO CONVERSION IN LAPAROSCOPIC CHOLECYSTECTOMY

PERVEZ IQBAL, MOHAMMAD SADDIQUE, TUFAIL AHMED BALOCH*
Department of Surgery (Unit VI), Dow University of Health Sciences & Civil Hospital, Karachi
Department of Surgery, Sindh Government Lyari General Hospital, Karachi*

ABSTRACT
Objective: To determine the reasons for conversion of Laparoscopic Cholecystectomy to open surgery in our setup.
Setting: Surgical Unit I & IV of Civil Hospital Karachi, Surgical Unit VIII of Lyari General Hospital and two private hospitals of Karachi.
Patients: A total of 340 patients who underwent Laparoscopic Cholecystectomy.
Methodology: Detailed history, physical examination and investigations were carried out. Patients were operated by a senior surgeon. Cases that required conversion from Laparoscopic to open surgery were analyzed and the factors responsible for such conversion were studied.
Results: Out of 340 patients 32 (9.4%) required conversion to open procedure. Factors responsible for these conversion were dense adhesions in 8(2.4%), empyema gall bladder in 4(1.2%), contracted gall bladder in 3(0.9%), haemorrhage in 3(0.9%), and CBD injury and carcinoma gall bladder in 2(0.6%) each. Instrument failure and repeated power breakdowns with backup failure were also recognized as important factors responsible for 10(2.9%) conversions.
Conclusion: Conversion of Laparoscopic to open procedure may be life saving in difficult situations. Conversion rate can be reduced by addressing the preventable factors.

KEY WORDS: Laparoscopic Cholecystectomy, Conversion, Instrument Failure

INTRODUCTION

Laparoscopic Cholecystectomy (LC) has gradually replaced open cholecystectomy for the treatment of symptomatic gall stone disease in almost all major hospitals in Pakistan. Better cosmetic results, short hospital stay, early recovery and return to physical activity and work have all contributed to the popularity of this technique, establishing it as the gold standard for the treatment of cholelithiasis.

In some cases conversion to open cholecystectomy is required for the safety of patients. The factors leading to conversion may be patient related as in the case of distorted anatomy, surgeon related due to less experience of difficult situations and equipment related as in the case of instrument failure. A conversion rate of 1.5 to 19% have been reported in different published series.1 The object of this study was to identify the factors responsible for conversion in our setup.

PATIENTS & METHODS

This study was conducted in Surgical Unit I & IV of Civil Hospital, Unit VIII of Lyari General Hospital and two private hospitals in Karachi. A total of 340 patients presenting with symptomatic gall stone disease between January 2000 to June 2007 were included in the study. Patients with history of jaundice, previous upper abdominal surgery, palpable tender lump in right hypochondrium, deranged liver function tests, dilated CBD or CBD stones on ultrasound and those with medical comorbidities were not included in the study. All patients were evaluated on the basis of history, physical exami-
nation, laboratory investigations and ultrasound abdomen, and underwent classical laparoscopic cholecystectomy. Details of patients who underwent conversion to open operation were analyzed and the factors responsible noted.

RESULTS

Amongst the 340 patients admitted for laparoscopic cholecystectomy 80(23.5%) were male and 260(76.5%) female, with an average age of 39 years (range 16 years to 62 years). Thirty two patients (9.41%) required conversion to open procedure; in the remaining cases the laparoscopic cholecystectomy was successfully completed. The reasons for conversion (Table I) included dense adhesions in the region of gall bladder and Calot’s triangle making dissection unsafe in 8(2.35%) cases, empyema gall bladder in 4(1.18%), failure to hold the contracted thick-walled gall bladder in 3(0.88%) and haemorrhage in 3(0.88%) patients. Two (0.59%) cases with injury to the CBD recognized during surgery were converted to open procedure, as were 2(0.59%) patients with incidental finding of carcinoma gall bladder. Instrument failure contributed to maximum number of conversions i.e. 10(2.94%). Instrument failure (Table II) included failure of light source in four cases, failure of the camera in two and insufflator also in two cases. Repeated disruption of power supply with backup failure was also responsible for two conversions.

DISCUSSION

With growing experience of laparoscopic cholecystectomy and completion of the learning curve, the indications for LC have been extended, approaching to that of open cholecystectomy depending upon the expertise of the operating team. Complications of LC have been minimized to as low as 2-6%. However, a substantial proportion of patients had to be converted from LC to open operation because of technical difficulty or intra-operative complications. The conversion rate of LC has been reported in different studies as ranging from 2-15%.

The importance of factors predisposing to conversion from laparoscopic to open cholecystectomy has been emphasized in different studies and studies have also been conducted to address this important issue. The incidence of conversion due to adhesions, empyema gall bladder and contracted gall bladder in our study is similar to that of other international studies. Singh and Ohri in their study reported adhesions as the cause of conversion in 16.7% cases, empyema gall bladder in 2.05% and contracted gall bladder in 1.4% cases.

With more experience and technical advances, haemorrhage and CBD injuries are being increasingly managed laparoscopically. Similarly advances in diagnostic modalities have resulted in increased preoperative diagnosis of carcinoma gall bladder. CBD stones can now also be managed by laparoscopic methods or ERCP.

Conversion due to instrument failure has been reported only in earlier studies. In our study it was an important reason for conversion accounting for 10(2.9%) cases. Camera, insufflator and clip applicator failure has been documented in a local study. Search in local and international literature revealed that conversion due to repeated power breakdown with backup failure has not been documented in any study. This new factor, endangering the life of patients and threatening to damage the equipment has coincided with power generation problems which the country is facing for the last one year.

CONCLUSION

During laparoscopic cholecystectomy operation conversion to open surgery under difficult situation and conditions should not be delayed for the safety of patient. However certain preventable factors like instrument failure and power breakdown can be addressed by a reliable backup.

Table I. Reasons for Conversion (n=340)

<table>
<thead>
<tr>
<th>Reason for Conversion</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presence of dense adhesions</td>
<td>8</td>
<td>2.35</td>
</tr>
<tr>
<td>Empyema gall bladder</td>
<td>4</td>
<td>1.18</td>
</tr>
<tr>
<td>Contracted gall bladder</td>
<td>3</td>
<td>0.88</td>
</tr>
<tr>
<td>Haemorrhage</td>
<td>3</td>
<td>0.88</td>
</tr>
<tr>
<td>CBD Injury</td>
<td>2</td>
<td>0.59</td>
</tr>
<tr>
<td>Carcinoma gall bladder</td>
<td>2</td>
<td>0.59</td>
</tr>
<tr>
<td>Instrument failure</td>
<td>10</td>
<td>2.94</td>
</tr>
<tr>
<td>Total</td>
<td>32</td>
<td>9.41</td>
</tr>
</tbody>
</table>

Table II. Instrument Failure (n=10)

<table>
<thead>
<tr>
<th>Cause of Failure</th>
<th>Number</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light source</td>
<td>4</td>
<td>1.18</td>
</tr>
<tr>
<td>Camera</td>
<td>2</td>
<td>0.59</td>
</tr>
<tr>
<td>Insufflator</td>
<td>2</td>
<td>0.59</td>
</tr>
<tr>
<td>Power supply</td>
<td>2</td>
<td>0.59</td>
</tr>
</tbody>
</table>
REFERENCES


