Laparoscopic Cholecystectomy Complication and Conversion Rate

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ABSTRACT

Background

Laparoscopic cholecystectomy has become standard method for treating gallstone. However, different centres have reported different complications and conversion rate. The objective of this study was to evaluate complications and conversion of laparoscopic cholecystectomy into open cholecystectomy in Dhulikhel Hospital, Kathmandu University, Nepal.

Methods

Files of all patients who had laparoscopic cholecystectomy from January 2005 to December 2009 were reviewed. Out of 119 laparoscopic cholecystectomy cases, 102 were included in the study as complete information was lacking in the rest.

Results

Out of 102 cases, 80 were female. Symptomatic cholelithiasis were 76.47%. The mean hospital stay was 2.48 days. Postoperative complications occured in 5.88% patients. Conversion rate to open cholecystectomy was 3.92%.

Conclusions

Laparoscopic cholecystectomy is a reliable and safe surgery. With growing experience in laparoscopic technique, it is possible to bring complications and conversion rate to minimum. However, there will be no significant improvements once learning curve is reached. Rather, the nature of biliary injury may become more severe.

Key Words

cholecystectomy, conversion, gallstone, laparascopic

INTRODUCTION

At present, laparoscopic cholecystectomy (LC) is the procedure of choice in the surgical treatment of the symptomatic biliary lithiasis. Laparoscopic cholecystectomy has become the standard operative procedure for the treatment of gallbladder diseases and almost replaced open cholecystectomy (OC) in the treatment of gallbladder diseases.[1,2] The outcome of LC is influenced greatly by training, experience, skill and judgment of the surgeon performing the procedure.[3] This study analyzed the complications and conversion rate of LC.

METHODS

Files of the patients, who had LC done from January 2005 to December 2009, were reviewed. Research was approved by institutional review committee. We collected patients demographic data, indications of the surgery, related medical problems, history of previous surgery, preoperative liver function test, reasons for the conversion and the postoperative complications. All the patients presented with cholelithiasis without choledocholithiasis; and with no contraindication for general anaesthesia were included in the study. Out of 119 attempted cases of LC, 102 cases were included in the study as the rest of the

records were missing. LC was performed using the closed technique with standard four trochars. Out of 102 cases of LC, four cases were converted to OC. Data were analyzed with Microsoft Excel.

RESULTS

Out of 102 cases, 80 (78.43%) were female and 22 (21.56%) male. The mean age was 42 years (range 16-72 years). One (0.98%) patient had Hypertension and one had Diabetes Mellitus. The indications of laparoscopic cholecystectomy are given in Table 1. The mean hospital stay was 2.48 days (range 2-14 days).

Six patients (5.88%) had postoperative complications. (Table 2)

All the cases of LC were given single prophylactic dose of cefotaxime 1 gram intravenously. In Cases of acute calculous cholecystitis, empyema gallbladder and bile spillage, total three doses of cefotaxime 1 gram were given intravenously. Four patients (3.92%) out of 102 were converted to open cholecystectomy. Reasons for conversion were frozen Calot's triangle in two patients (1.96%), bleeding in one (0.98%) and confusing anatomy at Calot's triangle in one (0.98%) .

Table 1. Indications of laparoscopic cholecystectomy (n=102)

Diagnosis	No of cases (%)
Symptomatic cholelithiasis	78 (76.47%)
Acute calculous cholecystitis	8 (7.84%)
Chronic calculous cholecystitis	14 (13.74%)
Empyema gallbladder with gall stone	2 (1.96%)
Total	102 (100%)

Table 2. Postoperative complications in 102 laparoscopic cholecystectomy cases

Complications	No of cases (%)
Bile leak	3 (2.94%)
Wound infection	1 (0.98%)
Surgical emphysema	1 (0.98%)
Bile duct injury	1 (0.98%)
Total	**6 (5.88%)**

DISCUSSION

Laparoscopic cholecystectomy is not easy for the surgeon. Laparoscopic surgery has learning curve. It need thorough instruction as well as experience for the improvement of result.

Study done by Keus et al[4] showed morbidity rates of 5.4% following LC. This rate is comparable to our morbidity rate of post LC (5.88%). Eelco J Veen et al[5] had also shown 7% post LC morbidity rates. However, the study has not included biliary injury rate (1%). During the surgical learning curve for LC, there was an initial rise in the reports of bile duct injuries,[6] resulting mainly from the surgeons' inexperience and misinterpretation of anatomy. However, LC has been still associated with significant bile duct injuries up to 0.5–0.8%[7-9] and the nature of bile duct injury is more severe.[10] An audit of 1522 LCs performed in Thailand revealed a bile duct injury rate of 0.59%.[11] Waheeb R. Al-Kubati et al[12] showed biliary injury in 0.6% of LC cases done for chronic calculous cholecysytitis.

In our study, bile duct injury was found in one patient (0.98%) out of 102 cases. In this case, common hepatic duct was clipped instead of cystic duct. It was diagnosed on 7th postoperatvive day and managed with Roux-n-y hepatico-jejunostomy.

The biliary leak may be minor,[13] arising from a small, accessory bile duct[14] and clinically insignificant. Percutaneous drainage of the bile collected in subhepatic space is usually sufficient for such cases. In our study there were 3 (2.94%) cases with bile leak. Subhepatic drain kept during operation was sufficient to manage biliary leakage. In all cases, there was minimal (<50ml) bile in drain. The drain was removed on 4-5th postoperative day in all cases. In cases where there was doubt about the hemostasis from raw area of gallbladder fossa, subhepatic drain was kept during operation. Similarly in the study done by Muneer Imran et al[15], two patients (8%) had bile stained drain following laparoscopic cholecystectomy for 2 days. Minor leak was there in both cases and it was stopped spontaneously without requirement of any surgical intervention.

LC has become the first line of surgical treatment of calculous gallbladder disease; however, conversion to OC remains a possibility.[16] Our conversion rate to OC in 102 cases of LC was 3.92%.

Table 3 compares our conversion rate with some major published similar work.

Table 3. Conversion rate of laprascopic cholecystectomy into open cholecystectomy

Study	No of patients	Conversion rate (%)
Saeed Hadi et al[17]	709	8.3
Waseen Memon et al[18]	216	4
Butt et al[19]	300	4
Present study	102	3.92

Saeed Hadi et al and Waseen Memon et al claimed that commonest cause of conversion was frozen Calot's triangle which was true in our study also. Frozen Calot's triangle

means dense adhesion around Calot's Triangle

CONCLUSION

Laparoscopiccholecystectomyisareliableandsafesurgery. With growing experience in laparoscopic technique, it is possible to bring complications and conversion rate to minimum. However, there will be no significant improvementsoncelearningcurveisreached.Rather,the nature of biliary injury may become more severe.

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