Frequency and Reasons of Conversion of Laproscopic Cholecystechtomy to Open Cholecystectomy

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ABSTRACT

Background: Gallstone disease is not only common health concern in developed countries, rather its incidence is increasing in developing countries. For the last two decades, laparoscopic cholecystectomy has been considered as a standard treatment for this disease.

Objective: To determine the frequency and reasons of conversion of laparoscopic cholecystectomy to open cholecystectomy.

Material & Method: The descriptive study was carried out in the department of surgery, Khyber Teaching Hospital Peshawar from January 2015 to December, 2016. Total 504 patients having symptomatic gall stones were subjected to laparoscopic cholecystectomy. Frequency of conversion of laparoscopic cholecystectomy to open and its causes were analyzed in this study.

Results: Among the 504 patients, 36 patients (7.14%) were converted to open cholecystectomy. The conversion in male and females were 12(11.8%) and 24(5.95%) respectively. The most common reason for conversion during laparoscopic cholecystectomy was adhesions followed by hemorrhage.

Conclusion: The commonest reason for conversion was adhesion followed by hemorrhage, common bile duct and gut injuries. Laparoscopic cholecystectomy can be safely performed with a conversion rate of less than 10% in all the patients.

Keywords*: Laparoscopic cholecystectomy (LC), Open cholecystectomy (OC).*

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INTRODUCTION

Gallstone disease is not only common health concern in developed countries, rather its incidence is increasing in developing countries.[1, 2] Its prevalence in USA is about 10-15% and in Pakistan up to 16%.[1, 2] For the last two decades, laparoscopic cholecystectomy has been considered as a standard treatment for this disease.[3, 4] Some of the advantages of the laparoscopic cholecystectomy are short hospital stay, less postoperative pain, early recovery, better cosmetic outcome and less cost.[3, 4] Nowadays it is also recommended in managing cases of acute cholecystitis [5].

Sometimes, symptomatic gallstone disease can lead to complications if not dealt with surgically. 1st open cholecystectomy was successfully performed by Carl-Langenbuch which was gold standard for managing this disease for nearly a hundred years. [6] Then Philippe Moret revolutionized the management of gallstone Disease by performing first successful laparoscopic cholecystectomy [7].

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Difficulties like peritoneal access, abnormal anatomy have been reported during LC and these difficulties along with other factors may lead the conversion of LC to OC.[8] However, the conversion should not be misleader as a technical failure of the surgeon. Several studies have reported different frequencies and causes of this conversion. Previous studies show that the rate of conversion is 16-18%.[8,9] various causes of conversion of laparoscopic to open cholecystectomy described in the literature are biliary duct injury, adhesions, GI tract injury and hemorrhage.[10, 11]

The aim of our study is to point out these causes of conversion of laparoscopic to open cholecystectomy, and to compare our results with other studies. This will help us to improve our facts and figures.

MATERIALS AND METHODS

This Descriptive case series was carried out in the surgical department of Khyber Teaching Hospital Peshawar; Khyber Pakhtunkhwa over a period of 02 years during ist January 2015 to 31st December 2016.he study design was approved by ethical committee of the hospital.

Total of 504 patients having age = 18 years with symptomatic cholelithiasis were included in this study. Choledocholethiasis, Cirrhotic liver patients and Patients with previous abdominal surgery were excluded from this study.

All patients having symptomatic gallstones were admitted through outpatient department in accordance with the inclusion criteria. An informed verbal and written consent was taken for study and procedure. A complete history was taken and relevant examination was performed. All routine investigations were done and any co-morbid conditions were excluded. Patients were kept nil per oral from midnight before surgery. At the time of induction of anesthesia, a single dose of 1.5 gram of Cefuroxime was given intravenously to all the patients. The procedure was carried out and the patients were followed and observed for the causes of conversion. Demographic data for each patient was recorded.

Laparoscopic cholecystectomy was performed by senior consultant. The data recorded were subjected to SPSS, version 20.0. Frequency and percentages were calculated for gender, conversions, biliary duct injury, adhesions, GI tract injuries and hemorrhage.

RESULTS

All 504 patients having symptomatic cholelithiasis were included in the study. Among these 504 patients, 403(79.96%) were female whereas the 101 (20.03%) were male (Table 1). The mean age of the patients was 44.54 years ±12.35 SD.

The conversion to open was observed in 36 (7.14%) patients (Table 1). The distribution of causes of conversion shows that the commonest cause was adhesions which might be due to tissue inflammation and fibrosis at calot's triangle. It was found in 26 (5.56%) converted cases followed by hemorrhage in 8 (1.58%) cases, CBD and Gut injuries 1 in each case (Table 2).

DISCUSSION

Laparoscopic surgery has many advantages in comparison to open surgery. However, conversion of LC to OC is discouraging for the surgeon. This should not be deemed as complication of the procedure, but basically it is a wise decision by the operating surgeon to avoid needless lengthening of the procedure in case of any intra-operative difficulty. According to the published literature of the recent years, the conversion rate ranged from 3.6% to 13.9%. [12, 13]

In case of conversion from LC to OC, it results in evidential change for patient on account of higher risk of postoperative complications along with longer stay at hospital.[14] The complications related to the conversion also rely upon the surgeon's experience and various other factors like repeated attacks of cholecystitis, patient's age and gender.[15, 16]

In spite of surgeon's trainings, excellent tools of laparoscopy instruments, the rate of conversion persisted almost stable. However the conversion must not be considered as complication but the real complications of the LC are hemorrhage, injury to biliary ducts and other visceral injuries.[17,18] Even in some cases the conversion may be required to prevent these mentioned complications. The most common situation that was found related with increased difficulty of cholecystectomy was adhesions due to repeated attacks of inflammation.[15] In the present study we

Table 1. Stratification of conversion over gender of patients.

Gender	Total No. of patients	No. of converted ptients
Male	101 (20.03%)	12 (11.8%)
Female	403 (79.96%)	24 (5.95%)
TOTAL	504 (100%)	36 (7.14%)

Table 2. Distribution of causes of conversion.

Causes of conversion	No. of patients
Adhesion	26(5.16%)
Common bile duct Injury	1(0.19%)
Hemorrhage	8(1.58%)
Gut Injury	1(0.19%)

Also found adhesions as one of the most frequent reason of conversion followed by hemorrhage as the second most. We also determined the bile duct and gut injuries as factors that lead to conversion.

Most of the previous literature also depicted that male gender is more prone to conversion in comparison to females.[19,20] it might be due to more severity of gallstone diseases in men in comparison to women[21]. The findings of the present study are also in close accordance with these studies.

CONCLUSION

This study was designed to determine the frequency and reasons of conversion of laparoscopic cholecystectomy to open cholecystectomy .The main causes of conversion were adhesions followed by hemorrhage. However the rate of conversion was stable and LC can be safely performed with a conversion rate of less than 10% in all the patients. And conversion should not be taken as complication of the procedure rather it is a good decision by the surgeons to avoid intraoperative complications and unnecessary lengthening of the procedure.

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