

Rate of Conversion of Laparoscopic Cholecystectomy to Open Cholecystectomy; A Retrospective Analytical Study

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ABSTRACT

Aim: To analyse the incidence of intra operative risk factors responsible for conversion from laparoscopic to open cholecystectomy in our setting.

Study design: A retrospective analytical study of patients who underwent laparoscopic surgery from June 2009 to June 2012, conducted at the surgical unit 2 of the Services Hospital Lahore, Pakistan.

Methods: All those patients who underwent laparoscopic cholecystectomy (n=283) and were converted to open surgery (n = 10) were enrolled as cases. The reason behind the conversion and factors leading to it were recorded.

Results: A retrospective analysis in which a total of 283 patients were studied with age ranging from 25-65 years with M: F ratio, 2:8 and body weight in range of 45-95 kilogram. Ten patients (3.5%) out of a total of two hundred eighty three (283) had to be converted to open cholecystectomy for reasons which included dense omental or visceral adhesions- 2(0.7%), mirizi's syndrome - 2(0.7%), intrahepatic thick wall gall bladder- 2 (0.7%), carcinoma of gall bladder- 1 (0.4%), empyema gall bladder-1 (0.4%), cirrhotic liver with shrunken gall bladder-1 (0.4%), perforated gall bladder-1 (0.4%). The percentage of successful cholecystectomy was 96.5% (273 out of 283 cases) while the rate of conversion into OC was 3.5% (10 out of 283 cases).

Conclusion: The etiology responsible for conversion of LC into OC is multifactorial, however proper preoperative assessment, good laparoscopic surgical skills and equipment, adequate experience and innovations are important factors in carrying out successful laparoscopic cholecystectomies.

Keywords: laparoscopic cholecystectomy, risk factors, conversion rate, lap to open chole

INTRODUCTION

Pathology relating with hepatobiliary system constitutes a major portion of digestive tract disorder. Among these cholelithiasis is the most common biliary tract problem. Carl-Langenbuch has the credit to perform first ever Open cholecystectomy on 15th July 1882 in Berlin. However the advent of Laparoscopic cholecystectomy has in fact revolutionized the treatment of cholelithiasis¹. Laparoscopic cholecystectomy was performed for the first time by Philippe Moret in France (1987). Laparoscopic cholecystectomy has been regarded as the gold standard in the treatment of patients with symptomatic Cholelithiasis and has replaced the conventional open cholecystectomy as declared in National Institutes of Health Consensus Conference² (1993). However, the certain factors influence the outcome of Laparoscopic cholecystectomy. The rate of conversion of laparoscopic (LC) into open cholecystectomy (OC) depends upon several factors including preoperative variables, intraoperative factors (findings), surgical skills and availability of latest operating instruments³. We presented a retrospective study reporting our experience with

laparoscopic cholecystectomy and reasons for conversion.

MATERIAL AND METHODS

The study was conducted on the patients who underwent laparoscopic cholecystectomy between June 2009 to June 2012 in surgical unit 2 of the Services hospital, Lahore, Pakistan. All patients with age less than 65 years, admitted through OPD with diagnosis of cholelithiasis having no contraindication for general anaesthesia were included in this study. In all patients standard 4 port laparoscopic cholecystectomy procedure was performed. For patients undergoing conversion to open a detailed note of the reasons responsible for conversion were recorded. Factors leading to conversion and how to avoid these factors was also recorded.

RESULTS

Ten patients (3.5%) out of a total of two hundred eighty three (283) had to be converted to open cholecystectomy for reasons which included dense omental or visceral adhesions- 2(0.7%), mirizi's

syndrome - 2(0.7%), intrahepatic thick wall gall bladder- 2(0.7%), carcinoma of gall bladder- 1 (0.4%), empyema gall bladder-1 (0.4%), cirrhotic liver with shrunken gall bladder-1 (0.4%), perforated gall bladder-1(0.4%).

Table 1. Reasons for conversion from laparoscopic to open chole (n=10/283)

Reasons for conversion	No.	%age
Dense omental or visceral adhesions	2	0.7
Gall bladder mass	1	0.4
Empyema Gall bladder	1	0.4
Cirrhotic liver with shrunken gallbladder	1	0.4
Intrahepatic thick walled gall bladder	2	0.7
Mirrizi syndrome	2	0.7
Perforated Gall bladder	1	0.4
Total	10	3.5 %

The percentage of successful cholecystectomy was 96.5% (273 out of 283 cases) while the rate of conversion into OC was 3.5 % (10 out of 283 cases).

DISCUSSION

Complex per operative findings are sole factor responsible for failure of Laparoscopic cholecystectomy and result in conversion into open cholecystectomy. However with the advent of latest instruments & equipments and improved laproscopic skills, the rate of conversion is declining over the past few decades. In our trial, we tried to evaluate the rate of conversion of laproscopic cholecystectomy into open cholecystectomy, among all those cholecystectomies that were performed on elective list between June 2009 to June 2012 it was found to be 3.5 %. These results are comparable with those of any specialized centres.

However there were few modifications among the percentage of etiologic factors resulting in conversion. Among previous studies, the percentage of "adhesion related conversion" was very high upto 5 %^{7,8}, but in our study, it is percentage is 0.7%. the adhesions cause the visual blockade of access to GB and result in injury to bowel and other viscus but with the availability of improved instruments like ligasure and harmonic scalpel, the percentage has markedly declined. Similarly, the incidence of bile leakage and

the uncontrolled bleeding from cystic artery is dealt with the latest and finer ligatures.

According to the review research article⁹ in the last two decades the causes of conversion were inability to correctly identify the anatomy (50%), "others" indications (16%), bleeding (14%), suspected choledocholithiasis (11%) and suspected bile duct injury (8%). While performing laparoscopy we successfully managed the choledocholithiasis, the adhesions and the complications like bleeding from cystic artery or aberrant duct the incidence of iatrogenic injury to CBD is negligible. We conclude that with the better understanding of pathophysiology of cholelithiasis, with the evolution of latest diagnostic tools, the improvement and availability of advance laparoscopic instruments and the revised surgical skills, there is a significant decline in the rate of conversion of lap to open cholecystectomy as well as a drastic change among the percentage of factors responsible for conversion.

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