

A Hospital Based Retrospective Study Determining the Complications Associated with Laparoscopic Cholecystectomy

Pradeep Kumar Srivastava¹, Surendra Mehrotra^{2*}

¹Assistant Professor, ^{2*}Associate Professor,
Department of General Surgery, Mayo Institute of Medical Sciences, Barabanki, Uttar Pradesh, India.

ABSTRACT

Background: Laparoscopic cholecystectomy is widely for the management of symptomatic cholelithiasis. The complications can be further divided into biliary complications and non-biliary complications. The present study was conducted with the aim to evaluate the incidence and complications associated with laparoscopic cholecystectomy.

Materials and methods: The retrospective study enrolling 300 subjects was done in the general surgery department. A detailed medical and family history was obtained from the records. Lucker's procedure was followed for laparoscopic cholecystectomy. The trocar insertion was selected accordingly. Chi square test and univariate regression curve were used as a test for significance. The probability value of less than 0.05 was considered significant.

Result: A total of records of 300 patients were analyzed. All the patients were aged between 31-60 years. There was a male predominance in our study. The mean age group was 42.21+/-1.23 years. Majority of cases were of Chronic calculous cholecystitis (65%). There were 21% cases (n=63) of acute cholecystitis. There were 19 cases of leakage of bile,

out of them 10 were managed conservatively, 5 underwent minimal invasive surgery and 4 underwent open surgery.

Conclusion: The incidence of postoperative complications associated with our study was 17.7%.

Keywords: Calculous, Cholecystectomy, Laparoscopic, Retrospective.

*Correspondence to:

Dr. Surendra Mehrotra,
Associate Professor,
Department of General Surgery,
Mayo Institute of Medical Sciences,
Barabanki, Uttar Pradesh, India.

Article History:

Received: 22-01-2018, Revised: 19-02-2018, Accepted: 06-03-2018

Access this article online

Website: www.ijmrp.com	Quick Response code 
DOI: 10.21276/ijmrp.2018.4.2.007	

INTRODUCTION

Laparoscopic cholecystectomy is widely for the management of symptomatic cholelithiasis. The first laparoscopic cholecystectomy was executed by Dr Erich Miuhe in 1985 for eradication of gall stones.¹ After this attempt it is widely performed for the removal of gall stones. This procedure has its own pros and cons and is also associated with its own set of complications. The complications associated with it are divided into major and minor complications. Some of the risks are increased with laparoscopic cholecystectomy when compared to open cholecystectomy.² The complications can be further divided into biliary complications and non-biliary complications. They have a variable incidence, ranging between 0.5 to 60%.³⁻⁶ Even if there are reports of higher complication rates but the mortality associated with laparoscopic cholecystectomy is far lesser than of open procedure.⁷

For reduction in the incidence of complications a precise operative procedure, apt anatomical dissection with recognition of appropriate landmarks should be followed. Cholangiography is the procedure performed in cases of confusion regarding identification of the landmarks.^{3,8,9} Both patient's and surgeon's factors are considered responsible for the complications associated with

laparoscopic cholecystectomy. The present study was conducted with the aim to evaluate the incidence and complications associated with laparoscopic cholecystectomy.

MATERIALS AND METHODS

The retrospective study enrolling 300 subjects was done in the general surgery department. The details of all the subjects were kept confidential. Subjects between 30- 60 years were included in the study. Initially a pilot study was conducted over a group of 5 subjects and based on that a sample size of 300 was selected. All the information was obtained from the medical records of the hospital. A detailed medical and family history was obtained from the records. Lucker's procedure was followed for laparoscopic cholecystectomy. The trocar insertion was selected accordingly. The record of both intraoperative and extraoperative complications was taken into consideration. Care was taken to include the surgeries performed by single operator to avoid any operator error that could affect the results of the study. Preoperative risk factors that lead to complications were also assessed. All the data was arranged in a tabulated form and assessed using SPSS software.

Chi square test and univariate regression curve were used as a test for significance. The probability value of less than 0.05 was considered significant.

RESULTS

A total of records of 300 patients were analyzed. All the patients were aged between 31-60 years. There was a male predominance in our study. The mean age group was 42.21+/-1.23 years.

Table 1 shows the data regarding the operative diagnosis. Majority of cases were of Chronic calculous cholecystitis (65%). There were 21% cases (n=63) of acute cholecystitis. Approximately 1% cases (n=3) and 1% cases (n=3) were of Scleroatrophic Cholecystitis. Approximately 8 % cases (n=4)

constituted of acalculous cholecystitis. On applying chi square test a significant difference was found in the incidence of various complications.

Table 2 shows the incidence of post-operative complications and the treatment executed for the same. There were 19 cases of leakage of bile, out of them 10 were managed conservatively, 5 underwent minimal invasive surgery and 4 underwent open surgery. The next common complication was subhepatic abscess which constituted about 12 cases. Out of these 5 were managed by open surgery, 4 were managed conservatively and minimal invasive surgery was done for 3. There were 6 cases of rational bile stone, all were managed by minimal invasive surgery. There were also 6 cases of post-operative haemorrhage.

Table 1: Showing operative diagnosis in our study

DIAGNOSIS	FREQUENCY	PERCENTAGE
Chronic calculous cholecystitis	195	65
Acute cholecystitis	63	21
Acalculous cholecystitis	24	8
Gall bladder mucocele	12	4
Gall stones in gall bladder remnant	3	1
Sclero-atrophic cholecystitis	3	1
P value		<0.05

Table 2: Incidence of complications and their management

COMPLICATIONS	CONSERVATIVE TREATMENT	MINIMAL INVASIVE	OPEN SURGERY	TOTAL
Leakage of bile	10	5	4	19
Subhepatic abscess	4	3	5	12
Choleperitonium	1	4	5	10
Postoperative haemorrhage	0	2	4	6
Retained bile stone	0	6	0	6
Total	15	19	19	53

DISCUSSION

Laparoscopic cholecystectomy is the widely done procedure of choice for removal of gall stones. Laparoscopy needs to be done whenever cholecystectomy is to be performed.¹⁰ Laparoscopic cholecystectomy carries its own set complications and advantages. The various advantages of this technique include less hospital stay, reduced pain, quick recovery and early arrival to work. Various risk factors dispose to the problems of this procedure. These comprise of age, male preponderance, presence of systemic diseases, increased bladder wall thickness, empyema of gall bladder, all these influence the post-operative snags.¹¹⁻¹⁴ Initially hitches associated with laparoscopy were quite high but nowadays they have decreased and it is associated with decreased risk of morbidity and mortality when compared to open cholecystectomy.^{15,16} As per the study by Jatzko et al¹⁷ laparoscopic cholecystectomy offers a morbidity rate of 1.9% and an open technique offers a morbidity of 7.7%. According to their study, acute cholecystitis was associated with maximum number of complications.

In the present study, we observed that leakage of bile was the most common complication (n=19) followed by subhepatic abscess (n=12). A total of 53 complications were seen out of 300 (17.7%). Majority of complications were managed by minimal invasive surgery. As per a study by Duca et al⁸, major postoperative complications included haemorrhage in 2.3% cases, perforation of bladder in 15.9% of cases and common bile duct in 0.1% of cases.

In a study by Rishi et al¹⁸, the most common issue was leakage of bile seen in 10 cases followed by subhepatic abscess seen in 3 cases. According to by Miodrag et al¹⁹, the frequency of intraoperative complications reported was 13.1%. The main one was bladder perforation, in 5.27% cases. Along with the postoperative complications of intraabdominal haemorrhage was seen in 3.64% cases. Biliary leaks were identified in 1.89 % cases and wound infection was seen in 0.94% cases. The drawbacks of the present study included smaller sample size; more patients should be assessed to know the exact prevalence.

CONCLUSION

Every treatment strategy has its own set of complications. With the advent of Laparoscopic cholecystectomy, there is a gush of latest type of complications but morbidity associated with laparoscopy is low. The incidence of postoperative complications associated with our study was 17.7%.

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Source of Support: Nil. **Conflict of Interest:** None Declared.

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Cite this article as: Pradeep Kumar Srivastava, Surendra Mehrotra. A Hospital Based Retrospective Study Determining the Complications Associated with Laparoscopic Cholecystectomy. *Int J Med Res Prof.* 2018 Mar; 4(2):31-33.

DOI:10.21276/ijmrp.2018.4.2.007