

**Original article:**

## **Evaluation of Complications in Patients Undergoing Cholecystectomy at a Tertiary Care Centre: A Prospective Analysis**

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### **ABSTRACT**

**Background:** Cholecystectomy is commonly performed treatment for managing cases of symptomatic cholelithiasis. The incidence is variable, varying between 0.5 to 60%. Even reports indicating a higher rate of complication, the mortality rate related with laparoscopic cholecystectomy is lesser compared to the open procedure. The aim of the present study was determine the incidence of complications relating to cholecystectomy.

**Materials and methods:** Complete medical examination of all the subjects was carried out including complete haematological profile and hemogram. A detailed medical and family history was obtained from the subjects. The detailed information on both intraoperative and extraoperative complications was recorded by regular follow ups at 3 weeks, 3 months and 6 months. Chi square test and univariate regression curve were used as a test for significance. The probability value of less than 0.05 was regarded as significant.

**Result:** A total of records of 200 patients were analyzed. All the patients were aged between 25-60 years. There was a clear male predominance in our study. The mean age group was 44.25 $\pm$ 1.24 years. Majority of cases were of chronic calculous cholecystitis (66%). There were 14 cases of leakage of bile. The next common complication was subhepatic abscess which constituted about 8 cases.

**Conclusion:** Every surgical procedure carries its own set of complications. Cholecystectomy is not free of complications. The incidence of postoperative complications associated with our study was 20%.

**Keywords:** Calculous, Cholecystectomy, Laparoscopic, Retrospective.

### **INTRODUCTION**

Cholecystectomy is commonly performed treatment for managing cases of symptomatic cholelithiasis. It can be open or laparoscopic. Open laparoscopic is now days been replaced to a large extent by laparoscopic cholecystectomy. The first laparoscopic cholecystectomy was done by Dr Erich Miuhe in the year 1985 for removal of gall stones.<sup>1</sup> After this initial attempt it is widely popular for the quick removal of biliary stones. This procedure had its own advantages and disadvantages and was related with complications just like open cholecystectomy. The complications related with cholecystectomy are divided into major and minor ones. Some of the complications are elevated with laparoscopic cholecystectomy as compared to the open procedure.<sup>2</sup> The complications can be also classified as biliary and non-biliary. The incidence is variable, varying between 0.5 to 60%.<sup>3-6</sup> Even reports indicating a higher rate of complication, the mortality rate related with laparoscopic cholecystectomy is lesser compared to the open procedure.<sup>7</sup> For reducing the incidence of complications a surgeon should have a precise operative protocol, appropriate anatomical dissection with identification of appropriate landmarks. Cholangiography is the technique performed in scenarios of confusion relating to the identification of landmarks.<sup>3,8,9</sup> Both patient's and surgeon's variables are regarded responsible for

complications relating to cholecystectomy. The aim of the present study was determine the incidence of complications relating to cholecystectomy.

### MATERIALS AND METHODS

The prospective study enrolled 200 subjects who reported to the Department of Surgery, P.D.U. Medical College, Churu, Rajasthan (India) with pain in abdomen. The study was conducted for period of 2 years. Ethical committee clearance was obtained from the institute's ethical board. All the subjects were informed about the study and a written consent was obtained from them in their vernacular language. Subjects between 27- 60 years were included in the study. Subjects with ASA grade I and II were included in the study, patients with any other co morbidities were excluded from the study. Initially a pilot study was performed over a group of 4 subjects and depending on that a sample size of 200 was selected. Complete medical examination of all the subjects was carried out including complete haematological profile and hemogram. A detailed medical and family history was obtained from the subjects. All the surgeries were performed in the same surgical unit to avoid human error. The detailed information on both introperative and extraoperative complications was recorded by regular follow ups at 3 weeks, 3 months and 6 months. Special considerations were given to the surgeries performed by single operator to avoid any operator error that could alter the results. Preoperative risk factors that could possibly lead to complications were also noted. 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 regarded as significant.

**Table 1: Showing operative diagnosis in our study**

Diagnosis	Frequency	Percentage
Chronic calculous cholecystitis	120	60
Acute cholecystitis	50	25
Acalculous cholecystitis	18	9
Gall bladder mucocele	10	5
Gall stones in gall bladder remnant	1	0.5
Sclero-atrophic cholecystitis	1	0.5
P value	<0.05	

**Table 2: Incidence of complications**

Complications	Frequency	Percentage
Leakage of bile	14	7
Subhepatic abscess	8	4
Choleperitonium	8	4
Postoperative haemorrhage	5	2.5
Retained bile stone	5	2.5
Total	40	100

## RESULTS

A total of records of 200 patients were analyzed. All the patients were aged between 25-60 years. There was a clear male predominance in our study. The mean age group was 44.25+/-1.24 years.

Table 1 shows the data regarding the operative diagnosis. Majority of cases were of Chronic calculous cholecystitis (66%). There were 25% cases (n=50) of acute cholecystitis. Approximately 0.5% cases (n=1) were of Scleroatrophic Cholecystitis and Gall stones in gall bladder remnant. Approximately 9% cases (n=18) 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. There were 14 cases of leakage of bile. The next common complication was subhepatic abscess which constituted about 8 cases. There were 5 cases of retained bile stone, all were managed by minimal invasive surgery. There were also 5 cases of post operative haemorrhage.

## DISCUSSION

Cholecystectomy is a routinely performed procedure of choice for the management of biliary stones or stone in bile duct. Laparoscopy needs to be performed whenever there is need of cholecystectomy.<sup>10</sup> Cholecystectomy – both open and laparoscopic has its own set complications and advantages. The various pros of this technique are decreased hospital stay, minimal pain, rapid recovery and early return to work. Different risk factors predispose to the complications of this management. These include age of the patient, male preponderance, related systemic disorders, bladder wall thickness, empyema of bladder, which influence the post operative rate of complications.<sup>11-14</sup> Initially the rate of complications related with laparoscopy were quite high but with increased demand and usage nowadays they have reduced and related with decreased morbidity and mortality as compared to open cholecystectomy.<sup>15,16</sup> According to a study by Jatzko et al<sup>17</sup> laparoscopic cholesteotomy had a morbidity rate of 1.9% and that associated with open technique was 7.7%. As per their study, acute cholecystitis was related with majority of complications. Majority of cases in the present study were of Chronic calculous cholecystitis(66%). There were 25% cases (n=50) of acute cholecystitis. Approximately 0.5% cases (n=1) were of Scleroatrophic Cholecystitis and Gall stones in gall bladder remnant. Approximately 9% cases (n=18) constituted of acalculous cholecystitis. On applying chi square test a significant difference was found in the incidence of various complications. There were 14 cases of leakage of bile. The next common complication was subhepatic abscess which constituted about 8 cases. There were 5 cases of retained bile stone, all were managed by minimal invasive surgery. There were also 5 cases of post operative haemorrhage. To determine a complete outlook of complications related to cholecystectomy, retrospective studies with large number of patients needs to be performed. The present study was a prospective one and had fewer patients and the incidence of operator discrepancies could not be ruled out.

## CONCLUSION

Every surgical procedure carries its own set of complications. Cholecystectomy is not free of complications. With the introduction of Laparoscopic cholesteotomy, the incidence of complications has been reduced but the procedure is still not free of complications. The incidence of postoperative complications associated with our study was 20%.

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