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Original Article

Retrospective Analysis of Complications Associated with Laparoscopic Cholecystectomy: A Hospital Based Study

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ABSTRACT:

Background: First laparoscopic cholecystectomy was performed by Dr Erich Miuhe in the year 1985 for removal of gall stones. It is after then that cholecystectomy has been widely used. Various major and minor complications are associated with it. Some risks are more with laparoscopic cholecystectomy as compared to open cholecystectomy. These complications can be divided into biliary and non-biliary. The aim of present study is to evaluate the incidence and complications associated with laparoscopic cholecystectomy. **Materials and methods**: The present retrospective study was conducted in the Department of General Surgery, Government Bangur Hospital, Pali, Rajasthan (India) during a period of 1 year. Medical records of the patient were analyzed. Complete account of history was taken into consideration. For laparoscopic cholecystectomy, procedure given by Lucker was used for placement of the operation team and the site of trocar insertion was also selected accordingly. All the data is recorded in a tabulated form. This data was analyzed by SPSS software. The test of significance that was applied was Chi square test and univariate regression curve was used to determine the level of significance. **Result:** A total of records of 230 patients were analyzed. All the patients were aged between 30-65 years. There was a male predominance in our study. The mean age group was 40.21+/-1.13 years. Majority of cases were of Chronic calculouscholecystitis(64.3%). There were 20% cases (n=46) of acute cholecystitis. There were 12 cases of leakage of bile, out of them 6 were managed conservatively, 4 underwent minimal invasive surgery and 2 underwent open surgery.

Conclusion: Every procedure is associated with complications. With the introduction of Laparoscopic cholestectomy, there is a surge of newer type of complications but the morbidity associated with this procedure is low. The incidence of postoperative complications associated with our study was 14.85%.

Keywords: Calculous, Cholescystectomy, Laparocsopic, Retrospective

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INTRODUCTION

Laparoscopic cholecystectomy has gained widespread popularity for treatment of symptomatic cholelithiasis. First laparoscopic cholecystectomy was performed by Dr Erich Miuhe in the year 1985 for removal of gall stones.[1]It is after then that cholecystectomy has been widely used. It is not that this procedure is not associated with complications. Various major and minor complications are associated with it. Some risks are more with laparoscopic cholecystectomy as compared to open cholecystectomy.[2]These complications can be divided into biliary and non biliary. The incidence of complications associated with this procedure varies between 0.5 to 60%.[3-6] Even though there have been reports of increased complication rates but the morbidity and mortality associated with laparoscopic procedure is less than that of open procedure.[7]

A good and precise operative technique, careful anatomical dissection with identification of appropriate landmarks can aid in reduction of the complication rate. Cholangiography can be done if there is any confusion regarding the landmarks.[3,8,9] Various patient and surgeon's factors are responsible for complications associated with laparoscopic cholecystectomy. The aim of present study is to evaluate the incidence and complications associated with laparoscopic cholecystectomy.

MATERIALS AND METHODS

The present retrospective study was conducted in the Department of General Surgery, Government Bangur Hospital, Pali, Rajasthan (India) during a period of 1 year. The study was approved by the Institute's ethical board and all the patient detail was kept confidential. The study was conducted from January 2014 to January 2015.

Medical records of the patient were analyzed. Complete account of history was taken into consideration. For laparoscopic cholecystectomy, procedure given by Lucker was used for placement of the operation team and the site of trocar insertion was also selected accordingly. The incidence and type of intra operative and post operative complications were recorded. A note was also given to the various risk factors that lead to complications. All the data is recorded in a tabulated form. This data was analyzed by SPSS software. The test of significance that was applied was Chi square test and univariate regression curve was used to determine the level of significance.

RESULTS

A total of records of 230 patients were analyzed. All the patients were aged between 30-65 years. There was a male predominance in our study. The mean age group was 40.21+/-1.13 years.

Table 1 shows the data regarding the operative diagnosis. Majority of cases were of Chronic calculous cholecystitis(64.3%). There were 20% cases (n=46) of acute cholecystitis. Approximately 0.8% cases (n=2) and 1.3% cases (n=3) were of Scleroatrophic Cholecystitis. Approximately 9.1% cases (n=21) constituted of acalculous cholecystitis.

Table 2 shows the incidence of post operative complications and the treatment executed for the same. There were 12 cases of leakage of bile, out of them 6 were managed conservatively, 4 underwent minimal invasive surgery and 2 underwent open surgery. The next common complication was subhepatic abscess which constituted about 9 cases. Out of these 4 were managed by open surgery, 3 were managed conservatively and minimal invasive surgery was done for 2. There were 3 cases of rational bile stone, all were managed by minimal invasive surgery. There were also 4 cases of post operative haemorrhage.

Table 1: Showing operative diagnosis in our study

Diagnosis	Frequency	Percentage
Chronic calculous cholecystitis	148	64.3
Acute cholecystitis	46	20
Acalculous cholecystitis	21	9.1
Gall bladder mucocele	10	4.3
Gall stones in gall bladder remnant	3	1.3
Sclero-atrophic cholecystitis	2	0.8

Table 2: Incidence of complications and their management

Complications	Conservative Treatment	Minimal Invasive	Open Surgery	Total
Leakage of bile	6	4	2	12
Subhepatic abscess	3	2	4	9
Choleperitonium	0	2	4	6
Postoperative haemorrhage	0	1	3	4
Retained bile stone	0	3	0	3
Total				34

DISCUSSION

Laparoscopic cholecystectomy is one of the routinely performed procedures of choice for cholelithiasis. Laparoscopy is done whenever cholecystectomy needs to be performed.[10] It has its own set of advantages and disadvantages. The various advantages offered by this technique are minimal hospital stay, minimum pain, rapid recovery and early return to work. Various risk factors predispose to the complications of this procedure. These include age, male predominance, presence of systematic diseases, increased thickness of the bladder wall, gall bladder empyema, all these predispose to the post operative complications.[11-14] Initially complications associated with this technique were high but now they have decreased and it carries a lower risk of morbidity and mortality compared to open cholecystectomy procedures.[15,16] According to the study by Jatzko et al[17] laparoscopic techniques offer a morbidity of 1.9% and an open procedure offers a morbidity of 7.7%. It has been seen that acute cholecystitis is associated with maximum complications.

In the present study, we observed that leakage of bile was the most common complication (n=12) followed by subhepatic abscess (n=9). A total of 34 complications were seen out of 230 (14.85%). Majority of complications were manages by minimal invasive surgery. According to a study by Duca et al[8], main postoperative complications were haemorrhage (2.3%), perforation of bladder (15.9%) and common bile duct (0.1%). In a study conducted by Rishi et al[18], the most common complication was leakage of bile (n=10) followed by subhepatic abscess (n=3). In a study by Miodraget al[19], the incidence of intraoperative complications was 13.1%. The major one was perforation of bladder, which was seen in 5.27% cases. Amongst postoperative complications the most common was intraabdominal haemorrhage, in 3.64% cases. Biliary leaks were seen in 1.89% cases and infection of wound was seen in 0.94% cases.

The sample size of our study was small, more number of patients needs to assessed to determine the exact incidence of complications. There was no emphasis on surgeon's factors associated with complications. All the operations were performed by different surgeons.

CONCLUSION

Every procedure is associated with complications. With the introduction of Laparoscopic cholestectomy, there is a surge of newer type of complications but the morbidity associated with this procedure is low. The incidence of postoperative complications associated with our study was 14.85%.

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