

Complications Associated with Laparoscopic Cholecystectomy for Symptomatic Gallstones- A Retrospective study

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Abstract

Background: Cholecystectomy is one of the most common abdominal surgical procedures in developed countries. The present study was conducted to assess the complications of LC indicated for symptomatic gallstones. **Subjects and Methods:** The present study was conducted on 82 patients of cholecystectomy of both genders. Out of 82 LC, 14 were converted to open cholecystectomy. Complications were compared for patients with complete laparoscopic procedures and in those open procedures were done. **Results:** Out of 82 patients, males were 40 and female were 42. There were 8/68 complications in LC group and 9/14 in open cholecystectomy group. Most common complication in LC group was intraoperative bleeding seen in 2 and in open cholecystectomy group was ligation of CBD in 2 cases. The difference was significant ($P < 0.05$). **Conclusion:** Authors found that laparoscopic cholecystectomy has fewer complications as compared to open cholecystectomy.

Keywords: Laparoscopic Cholecystectomy, Gall Bladder, Gallstones.

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Introduction

Gallstones disease has been a major cause of global morbidity with varying degree of prevalence based on the geographical, racial, and ethnic parameters. Gallstones are at least three to four times more common in females. The incidence of gallstones increases with advancing age and are rare before 20 years of age. In the United States (US), 15% of the adult population has gall bladder stones.^[1]

Cholecystectomy is one of the most common abdominal surgical procedures in developed countries. Since its introduction in the late 1980s, laparoscopic cholecystectomy (LC) has replaced open cholecystectomy (OC) as the treatment of choice for symptomatic gallstones. Beneficial effects of LC have been demonstrated in studies showing the advantages from real-life settings using secondary databases. Laparoscopic cholecystectomy (LC) has gained widespread popularity for treatment of symptomatic cholelithiasis.^[2] 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. 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. These complications can be divided into biliary and non biliary.^[3] The incidence of complications associated with this procedure varies between 0.5 to 60%. 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.^[4] The present study was conducted to assess the complications of LC indicated for symptomatic gallstones.

Subjects and Methods

The present study was conducted in the department of General surgery. It comprised of 82 patients of cholecystectomy of both genders. All patients were informed regarding the study and written consent was obtained. Ethical clearance was taken from institute ethical committee. Data such as name, age, gender etc. was recorded. A thorough clinical examination was done. Out of 82 LC, 14 were converted to open cholecystectomy. Complications were compared for patients with complete laparoscopic procedures and in those open procedures were done. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

Results

Table 1: Distribution of patients

Total- 82		
Gender	Males	Females
Number	40	42

[Table 1] shows that out of 82 patients, males were 40 and female were 42.

[Table 2, Figure 2] shows that there were 8/68 complications in LC group and 9/14 in open cholecystectomy group. Most common complication in LC group was intraoperative

bleeding seen in 2 and in open cholecystectomy group was ligation of CBD in 2 cases. The difference was significant ($P < 0.05$).

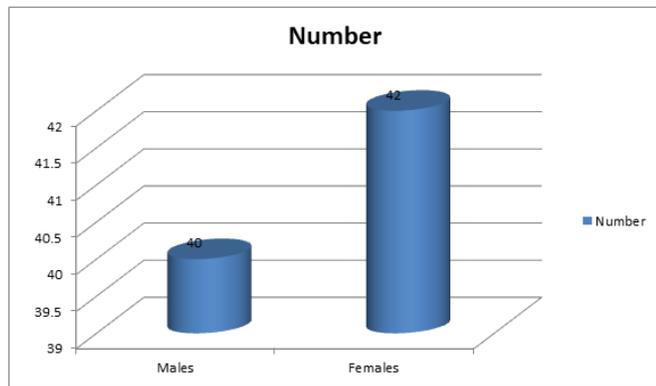


Figure 1: Distribution of patients

Table 2: Assessment of complications

Complications	LC (68)	OC (14)	P value
Intraoperative bleeding	2	1	0.01
Ligation of CBD	1	2	0.05
Bile duct injury	0	1	0.05
Duodenal perforation	0	1	0.05
Intra-abdominal collections	1	1	1
Bile leakage	0	0	0
SSI	1	1	1
Biliary peritonitis	1	0	0.01
Retained CBD stones	1	1	1
Death	1	1	1

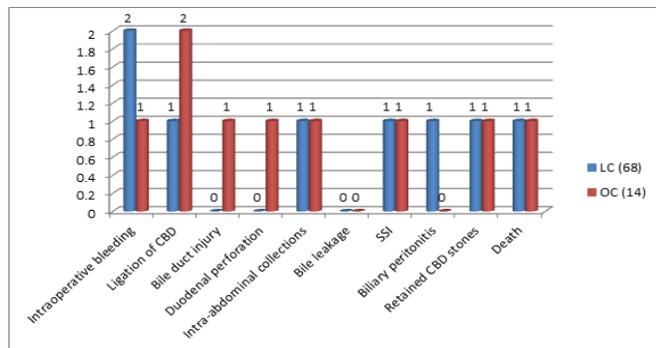


Figure 2: Assessment of complications

Discussion

Laparoscopic cholecystectomy is one of the routinely performed procedures of choice for cholelithiasis. Laparoscopy is done whenever cholecystectomy needs to be performed. 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.^[5] 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. 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.^[6] The present study was conducted to assess the complications of LC indicated for symptomatic gallstones.

In present study, there were 82 patients, of which males were 40 and females were 42. Sarda et al,^[7] analyzed a total of records of 230 patients. 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 calculous cholecystitis (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.

In present study, there were 8/68 complications in LC group and 9/14 in open cholecystectomy group. Most common complication in LC group was intraoperative bleeding seen in 2 and in open cholecystectomy group was ligation of CBD in 2 cases. Falor et al,^[8] found that the rate of complications associated with laparoscopic cholecystectomy was 6.8%. Older age, obesity, and multiple pre-operative risk factors were associated with complications. The most common intra-operative complication was hemorrhage (1.3%) and most common postoperative complication was surgical site infection (2.7%). Our conversion rate was 3.6%. Both intraoperative and postoperative complications were more common in procedures which were converted to open.

Kholdebarin et al,^[9] found that 13 651 patients were included; 86.1% had LC, 13.9% OC. 2.0% experienced surgical-related complications (SRC), 2.1% systemic complications (SC). The OR of complications after LC versus OC was 0.60 ($p < 0.001$) for SRC and 0.52 ($p < 0.001$) for SC. In relation to SRC, the advantage of LC was consistent across age categories, severity of gallstones and previous upper abdominal surgery, whereas there was no advantage among people with emergency admission (OR=0.94, $p = 0.764$). For SC, no significant advantage of LC was seen among very old people (OR=0.99, $p = 0.975$) and among those with previous upper abdominal surgery (OR=0.86, $p = 0.905$).

Advantages of the laparoscopic approach include better recovery, lower morbidity, and lower postoperative pain, shortened duration of hospital stay, and lower mortality rate. However, intraoperative bleeding was seen to be unaffected by the selection of operative technique. The incidence of major complications with LC remains as low as 5%. There may be several factors contributing to the risk of conversion to an open procedure. Distorted anatomy, excessive bleeding, visceral injury, adhesion, equipment failure and surgeons expertise are all factors that increase conversion from LC to open approach. The frequency of conversion has been reported to be 5%.^[10]

Conclusion

Authors found that laparoscopic cholecystectomy has fewer complications as compared to open cholecystectomy.

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