



## ASSESSMENT OF INCIDENCE OF VARIOUS COMPLICATIONS ASSOCIATED WITH LAPROSCOPIC CHOLECYSTECTOMY

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### ABSTRACT

In recent years complications in performing laparoscopic cholecystectomy has been noticed. Complications include intraoperative and postoperative complications. Major complications like biliary and vascular complications are always life threatening resulting in increased mortality rate. This resulted in changing the method of operation from laparoscopy to open surgery. About 0.5 to 6% of people operated with laparoscopy are expected to have complications. With a rate of occurrence of about 0.1 to 0.6% among all the population undergone with laparoscopy, injury to common bile duct is the major cause for mortality. Bile leaks was seen in 7 patients with 23.3%, sub hepatic collection was reported in 3, with 10%, surgical wound infection was reported in 3 patients with 10%, port site hernia was seen in 2 patients with 6.6%, hematoma of the abdominal wall was seen in 2 patients with 6.6%, gall bladder carcinoma was seen in 1 patient with 3.3%, retained calculus in common bile duct was seen in 1 patient with 3.3%, lost gall stones was reported in 2 patients with a percentage of 6.6% in over all patients reported with post-operative complications (30 patients). From the study it is clear that bile leakage are of high incidence among postoperative complications and Iatrogenic perforations of the gallbladder and bleeding from adjacent tissues of gallbladder are of major incidence in intraoperative complications. Thus, it is clear that intraoperative complications can be overcome by performing the procedure very vigilantly and by immediate alternative approach. However, based on the severity and requirement the procedure of laparoscopic cholecystectomy can be changed to other available approach of therapy.

**Key words:** Cholecystectomy, Cholelithiasis, Common Bile Duct Injury, Laparoscopy, Intraoperative Complications.

### INTRODUCTION

Symptomatic cholelithiasis is generally treated by performing laparoscopic cholecystectomy [1,2]. In recent years complications in performing laparoscopic cholecystectomy has been noticed [3,4]. Complications include intraoperative and postoperative complications [5]. Major complications like biliary and vascular are always life threatening resulting in increased mortality rate[7,8]. This resulted in changing the method of operation from laparoscopy to open surgery [9,10]. About 0.5 to 6% of

people operated with laparoscopy are expected to have complications [11]. With a rate of occurrence of about 0.1 to 0.6% among all the population undergone with laparoscopy, injury to common bile duct is the major cause for mortality [12]. Major blood vessel injury at a rate of 0.4 to 1.22%, is the other major complication for mortality[13]. Gallbladder with spilled gallstones due to iatrogenic perforation is another complication with an incidence of 10-30%[14,15].

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**AIMS & OBJECTIVES:**

We aim to assess the incidence and types of various intraoperative and postoperative complications that are associated while performing laparoscopic cholecystectomy.

**MATERIALS & METHODS:**

**Materials:** All the materials required for the study has been collected from department of General Surgery in Government Tiruvannamalai Medical College and Hospital on getting approval from the head of the department.

**Study type:** Retrospective study.

**Study site:** Government Tiruvannamalai Medical College and Hospital, Tamil Nadu, India.

**Study department:** General Surgery ward, both General and Postoperative Wards.

**Ethical clearance:** Study was carried out after getting ethical clearance from the institutional ethics committee on brief submission of study protocol which included- methodology of the study, need and privacy retained in data collection process).

**Study population:** Patients admitted with history of Symptomatic Cholelithiasis who underwent laparoscopic cholecystectomy.

**Study Duration:** The study was carried out under the supervision of Unit Chiefs collecting all their guidance for a period of 12 months from Nov-2018 to Oct-2019.

**Inclusion criteria:** Patients brought to the hospital with symptoms of cholelithiasis and who have underwent laparoscopic cholecystectomy.

**Exclusion criteria:** Patients who are in their gestational period, patients with medical history of diabetes, cardiovascular surgeries, unspecified drug allergies have been excluded from the study to maintain the consistency in the study report.

**Statistical evaluation of the study:**

Study reports have been statistically evaluated by

using Super Anova statistical package, paired t-test for comparing the consistency between two different groups of the study and by performing ANOVA.

**RESULTS & DISCUSSION:**

In the present study being a retrospective analysis a total number of 76 cases have been collected from the respective study departments. The cases included both male and female patients who have met inclusion criteria for the study. The complications of the patients have been widely divided into 2 types which included Intraoperative complications (IOC) and postoperative complications (POC).

**Risk factors for complications:**

- Male gender
- Age
- Presence of systemic inflammatory response syndrome (defined by elevated inflammatory parameters- elevated white blood cell count and C- reactive protein).
- Acute inflammation of the gallbladder
- Preoperative ultrasonographic finding of increased thickness of the gallbladder wall.
- Presence of gallbladder empyema

As represented in table 1, the intraoperative complications includes bleeding from tissues adjacent to gallbladder, with a incidence of 9 patients with 19.5%, bleeding from cystic artery was in 2 patients with 4.3%, iatrogenic perforation of the gall bladder was reported in 19 patients with a percentage of 41.3%, injuries to the common bile duct was seen in 3 patients with a percentage of 6.52%, bleeding from the abdominal wall was observed in 3 patients with a percentage of 6.52%, spilled gall stones was reported in 5 patients with a percentage of 10.86%, bleeding from the ligaments of the liver was seen in 3 patients with 6.52% and lesions of the omentum was observed in 2 patients with 4.34% of overall patients with IOC.

**Table 1: Intraoperative complications**

IOC TYPE	N(46)	%
Bleeding from tissues adjacent to gallbladder	9	19.5
Bleeding from cystic artery	2	4.34
Iatrogenic perforations of the gallbladder	19	41.3
Injuries to the common bile duct	3	6.52
Bleeding from the abdominal wall (port)	3	6.52
Spilled gallstones	5	10.86
Bleeding from the ligaments of the liver	3	6.52
Lesions of the omentum	2	4.34

As represented in table 2, the POC like bleeding from abdominal cavity > 100ml/day was reported in 9 patients with a high incidence of 30%, bile leaks was seen in 7 patients with 23.3%, subhepatic collection was reported in 3, with 10%, surgical wound infection was reported in 3 patients with 10%, port site hernia was seen in 2 patients with 6.6%, hematoma of the

abdominal wall was seen in 2 patients with 6.6%, gall bladder carcinoma was seen in 1 patient with 3.3%, retained calculus in common bile duct was seen in 1 patient with 3.3%, lost gall stones was reported in 2 patients with a percentage of 6.6% in over all patients reported with POC(30 patients).

**Table 2: Postoperative complications**

POC TYPE	N(30)	%
Bleeding from abdominal cavity >100 ml/24h	9	30
Bile leaks >50-100 ml/24h	7	23.3
Subhepatic collection	3	10
Surgical wound infection	3	10
Port site hernia	2	6.6
Hematoma of the abdominal wall	2	6.6
Gallbladder carcinoma	1	3.3
Retained calculus in common bile duct	1	3.3
Lost gallstones	2	6.6

**CONCLUSION:**

From the study it is clear that bleeding from abdominal cavity, bile leakage are of high incidence among postoperative complications and Iatrogenic perforations of the gallbladder and bleeding from adjacent tissues of gallbladder are of major incidence in intraoperative complications. Thus, it is clear that

intraoperative complications can be overcome by performing the procedure very vigilantly and by immediate alternative approach. However, based on the severity and requirement the procedure of laparoscopic cholecystectomy can be changed to other available approach of therapy.

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