

## Complications And Conversion Rate In Patients Undergoing Laparoscopic Cholecystectomy In A Tertiary Care Centre Of Kumaon Region Of Uttarakhand: A Prospective Study

Dr. Mukul singh<sup>1</sup>, Dr. Pankaj kumar verma<sup>2</sup>

<sup>1</sup>. Assistant professor, department of general surgery government medical college haldwani.

<sup>2</sup>. Associate professor, department of general surgery government medical college haldwani.

Corresponding Author: Dr. Pankaj kumar verma

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### Abstract

**Aim and Objective:** To study the complications and conversion rate in patients undergoing laparoscopic cholecystectomy in a tertiary care centre of kumaon region of uttarakhand.

**Material and Method:** This was a prospective study done from Nov.2013 to Sept.2015 in department of general surgery Dr. Susheela Tiwari Government Medical College and Hospital Haldwani, Nainital, Uttarakhand. The patients who underwent laparoscopic cholecystectomy were included in this study. Total number of patients was 100 and included both, admitted either as routine or emergency cases.

**Results:** Laparoscopic cholecystectomy is a safe procedure however intraoperative bleeding occurred in 3 cases, tear of gallbladder with spillage of bile was present in 4 cases, whereas spillage of stone also occurred in 4 cases, There was postoperative leakage of bile in 2 cases, no case of CBD injury occurred and port site infection occurred in 7 cases, In our study in 5 patients Laparoscopic cholecystectomy was converted to open cholecystectomy.

**Conclusion:** Laparoscopic cholecystectomy is a safe procedure and Conversion to open surgery is neither a failure nor a complication, but an attempt to avoid complications.

**Key words:** Complications, conversion rate, laparoscopic cholecystectomy, GMC Haldwani.

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### I. Introduction

Gall stones are very common entity known to be in human beings. By the age of 75, the incidence of gall stones in women and men is 35% and 20% respectively. In western society, the majority are either cholesterol or mixed cholesterol/calcium bilirubin stones. In a functioning Gall Bladder most of the gall stones are cholesterol stones. Gall stone disease is a relatively common problem in our country particularly in North India. It is estimated that more than 60% of these patients have cholesterol stones. Studies from South India have highlighted pigment & mixed variety of gall stones to be more common (>90%) in contrast to cholesterol stones.<sup>[1]</sup>

Gallstone is one of the commonest disease treated by general surgeon.<sup>[2]</sup> In 1882, Carl Langenbuch performed the first open cholecystectomy for gallstone disease.<sup>[3]</sup> Since then, open cholecystectomy became the gold standard of treatment of cholelithiasis. Cholecystectomy is now the most common procedure performed on the biliary tract and the second most common major abdominal operation performed today.<sup>[4]</sup>

The pain associated with long incision and its effect on the postoperative chest complications and also various wound complications of traditional open cholecystectomy added to the morbidity of this procedure.<sup>[4]</sup>

In 1987, 105 years later, Philippe Mouret performed the first laparoscopic cholecystectomy. T.E. Udwardia did the first laparoscopic cholecystectomy in India in 1989.<sup>[5,6]</sup> In 1990 10% of cholecystectomies were performed laparoscopically in U.S and by 1992; this percentage had risen to 90%. Never before has a surgical revolution occurred so fast.<sup>[5]</sup>

Recent studies have demonstrated that laparoscopic removal of gallbladder may be accomplished with less mortality and morbidity than that of open cholecystectomy in terms of smaller incision, less pain, early return to full activity, abolition of wound infections, better cosmesis and diminished tendency to adhesion formation.<sup>[6-9]</sup>

Anatomic and pathologic variations may make the operation difficult which sometimes may require conversion to open cholecystectomy. Certain preoperative diseases such as cholangitis, acute pancreatitis, diffuse peritonitis, previous upper abdominal surgery, chronic obstructive pulmonary disease, cholecystoenteric fistula and acute cholecystitis in pregnancy make the technical difficulty further more complicated which may prolong the operation time and may require conversion to open cholecystectomy.<sup>[2]</sup>

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In patients undergoing elective laparoscopic cholecystectomy conversion rate to open surgery is between 2% and 9%, which may increase further, in complicated cases. The need for conversion to open technique is neither failure nor a complication but is a judgement taken in favour of patient to avoid complications.<sup>[10, 11]</sup>

However, conversion to open cholecystectomy diminishes the potential medical, cosmetic and economic advantages of minimally invasive procedures. A converted cholecystectomy, involves extra cost for equipments and patient has a longer post operative hospital stay and more pain.<sup>[12, 13]</sup>

## II. Material And Method

This was a prospective study conducted in Department of Surgery, Dr. Susheela Tiwari Government Medical College and Associated Government Hospital, Rampur Road Haldwani, Distt. Nainital Uttarakhand, from Nov. 2013 to Sept. 2015.

The patients who underwent laparoscopic cholecystectomy were included in this study. Total number of patients was 100 and included both, admitted either as routine or emergency cases.

The following were the exclusion criteria:

### Exclusion Criteria

- The patients who were taken for open cholecystectomy directly.
- Severe restrictive pulmonary disease (these patients cannot tolerate CO2 pneumoperitoneum).
- Suspected gall bladder malignancy.
- Patients unfit for general anaesthesia.
- Patients not giving informed written consent.

The selected patients were then told about the procedure and written informed consent was taken. Patients were also informed about the possibility of conversion to open cholecystectomy.

## III. Results

In this Prospective study conducted between Nov. 2013 To Sept. 2015 in the Department of Surgery, Dr. Susheela Tiwari Government Medical College and associated Government Hospital, Rampur Road Haldwani, Distt. Nainital Uttarakhand, the complications and conversion rate associated with laparoscopic cholecystectomy was noted.

**Table -1 : Operative findings**

Operative findings	Total number of patients	Percentage%
Mucocele GB	12	12%
Empyema GB	2	2%
Gangrenous GB	1	1%
Adhesions	18	18%
Anomalous vessels	5	5%
Difficult calot's triangle	15	15%

- Analysis of operative findings showed that 12 (12%) patients had Mucocele, 2 (2%) patients had Empyema and 1 (1%) patient had Gangrenous gallbladder.
- Patients with Adhesions in calot's triangle or omental or duodenal adhesions to body of gallbladder were 18 (18%) cases.
- Anomalous vessels were encountered in 5 (5%) cases, in 2 (2%) cases there were accessory cystic artery whereas in three cases cystic artery was crossing in front of the common hepatic duct.

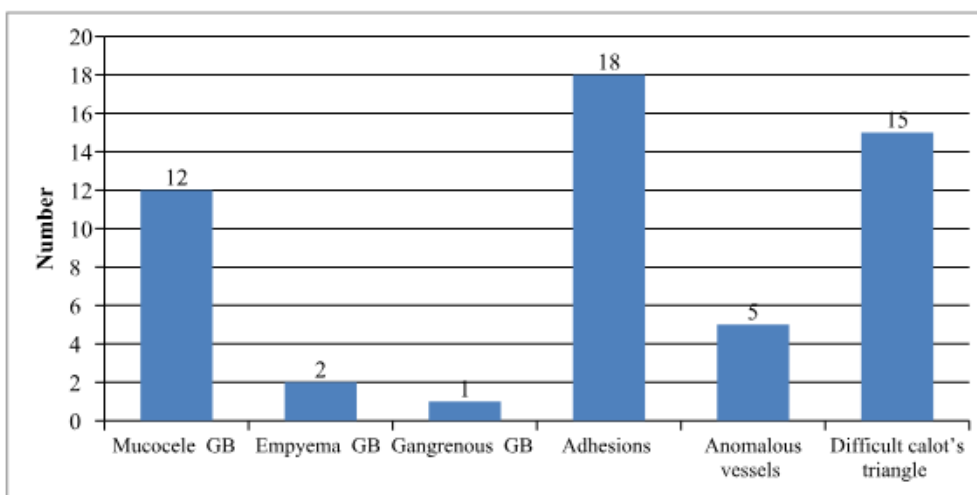


Figure-1 : Operative findings

Table -2 : Intraoperative complications

Intraoperative complications	Total no. of patients	% patients
Tear of GB	4	4.00
Per. Op. leakage of bile	4	4.00
Spillage of stones	4	4.00
CBD injury	0	0.00
Intraoperative bleeding	3	3.00

- In our study tear of gallbladder with spillage of bile was present in 4 cases, whereas spillage of stone also occurred in 4 cases. We encountered intraoperative bleeding in 3 cases.

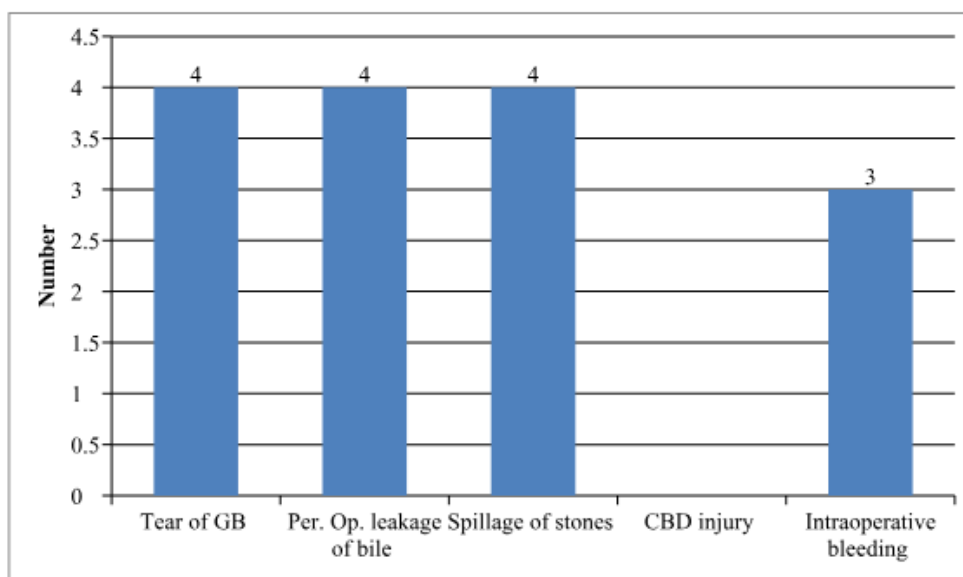


Figure -2 : Intraoperative problems

Table -3 : Duration of Hospital stay

Duration (days)	No. of patients	% patients
Upto 2	67	67.00
3-4	31	31.00
5-6	2	2.00
7-8	0	0.00

- In our study maximum number of patients were discharged within 2 days.
- In 2 patients stay was more than 5 days.
- 31 patients were discharged on 3<sup>rd</sup> or 4<sup>th</sup> day because of their own wish.

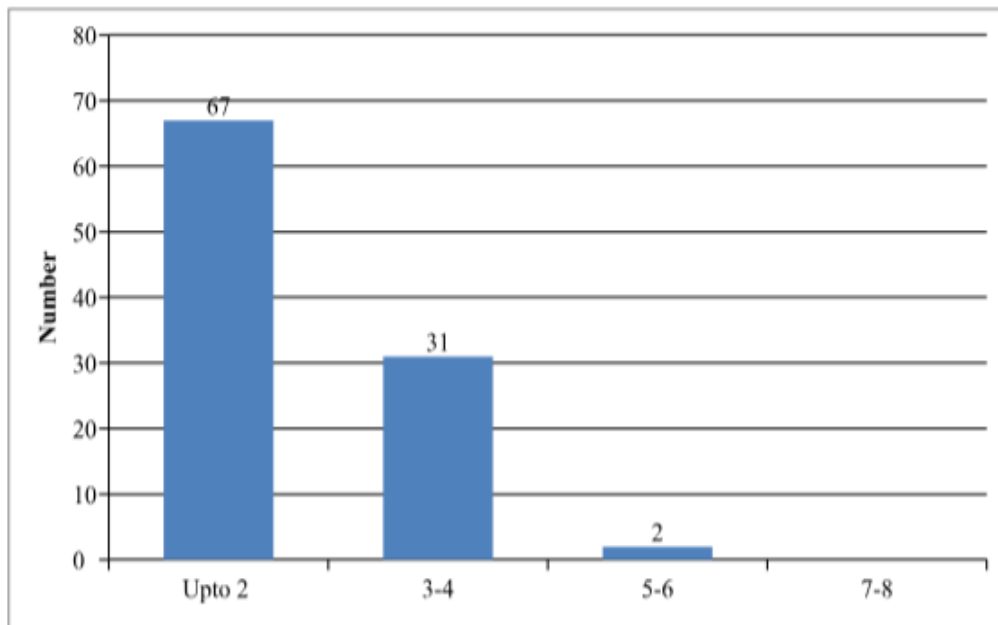


Figure -3 : Duration of Hospital stay

Table- 4: Postoperative complications

Postoperative complications	Total no. of patients	% patients
Post Op. leakage of bile	2	2.00
Port site infection	7	7.00

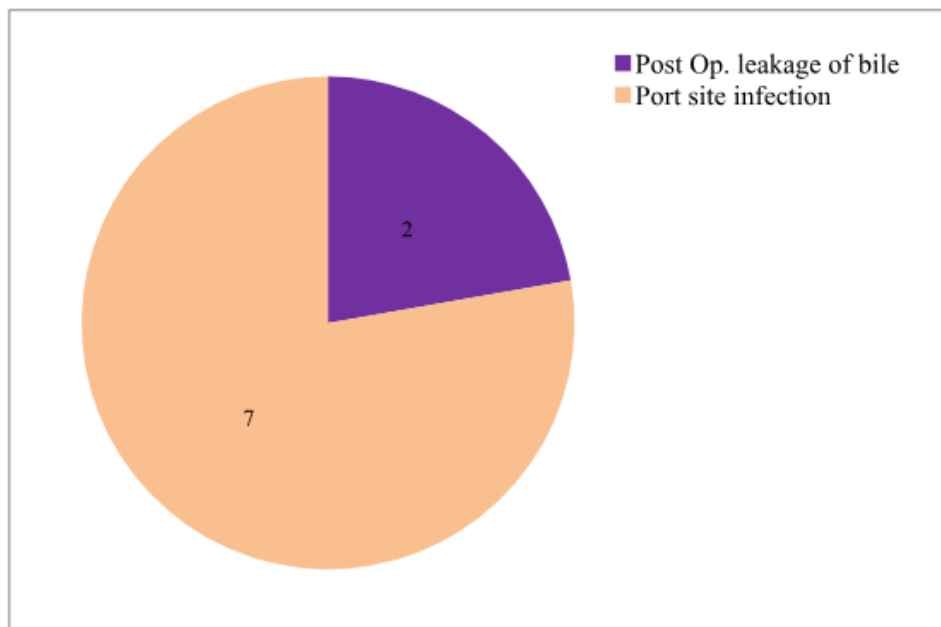


Fig.- 4: Postoperative complications



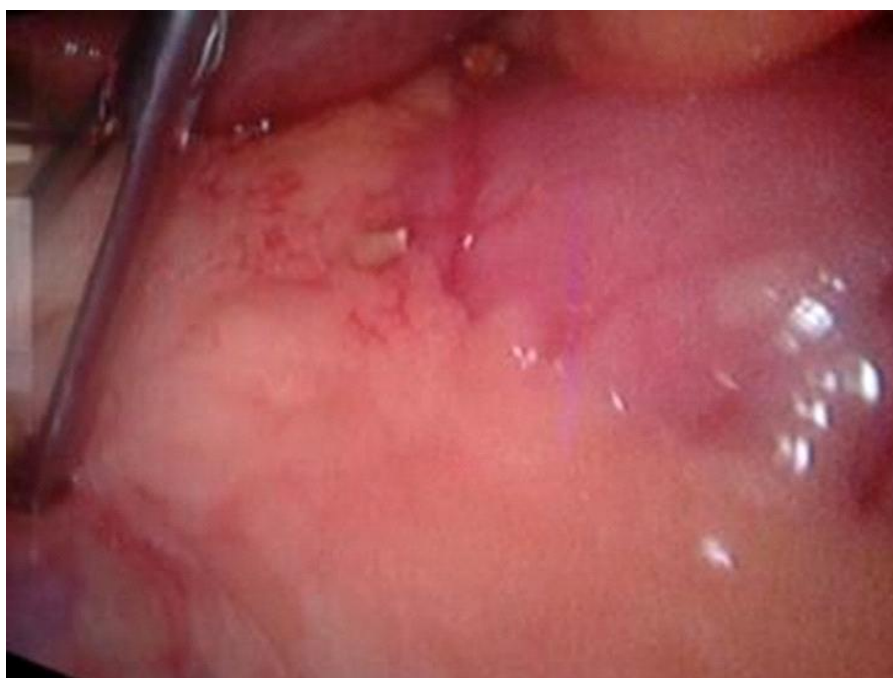
**1.PEROPERATIVE BLEEDING**



**2.GALLBLADDER PERFORATION**



**3.PEROPERATIVE LEAKAGE OF BILE**



**4.SPILLAGE OF STONES**

Surgery was converted to open cholecystectomy because of adhesions or unclear anatomy it was difficult to progress laparoscopically. In our study 5(5%) patients were converted to open cholecystectomy.

**Table-5: Conversion rate**

TOTAL NO. OF PATIENTS	100	100%
LAPAROSCOPIC CHOLECYSTECTOMY DONE	95	95%
CONVERSION TO OPEN CHOLECYSTECTOMY	05	5%

#### **IV. Discussion**

This was a Prospective study conducted between Nov. 2013 To Sept. 2015 in the Department of surgery, Dr. Susheela Tiwari Government Medical College and Associated Government Hospital, Rampur Road Haldwani, Distt. Nainital Uttarakhand. This study was done to find out the complications and conversion rate to open cholecystectomy associated with laparoscopic cholecystectomy.

##### **INTRAOPERATIVE PROBLEMS**

Intraoperative bleeding occurred in 3 cases:

- In 1 case it was due to tear of cystic artery during dissection.
- In 1 case it was due to spillage of clip from cystic artery.
- 1 case was of acute cholecystitis and bleeding occurred while releasing adhesions.

First 2 cases were managed by reclipping. in all the cases drain was left in situ in subhepatic space. Drain was removed on first postoperative day in all cases.

In our study tear of gallbladder with spillage of bile was present in 4 cases, whereas spillage of stone also occurred in 4 in all these cases stones were collected, bile aspirated and thorough lavage of peritoneal cavity was done with normal saline.

There was postoperative leakage of bile in 2 cases, no case of CBD injury and port site infection occurred in 7 cases.

##### **CONVERSIONS**

Surgery was converted to open cholecystectomy because of adhesions or unclear anatomy it was difficult to progress laparoscopically.

In our study 5 patients were converted to open cholecystectomy.

All of the 5 patients were having adhesions of omentum and duodenum to gallbladder.

- Patient had cholecystoduodenal fistula.
- Patients had contracted gallbladder and in 3 patients anatomy was obscure, so it was converted to open cholecystectomy.

In patients undergoing elective surgery, conversion rate to open surgery is taken between 2% to 9%.

In our study also conversion rate is 5%, which is in accordance with literature.

Conversion to open surgery is neither a failure nor a complication, but an attempt to avoid complications. It is always helpful to know the risk of conversion of laparoscopic cholecystectomy beforehand<sup>[11]</sup>. This may allow the patient to be better prepared for surgery and to plan their absence from work. Patients with a high –predicted risk of conversion could be operated on either by or under supervision of a more experienced surgeon.<sup>[11]</sup> Surgeons in early phase of their training could operate on patients with low risk of conversion.<sup>[14]</sup>

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