

Study of Complication of Laparoscopic Cholecystectomy in South Karnataka Population

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Abstract:

Background: The complications following laparoscopic cholecystectomy range from superficial surgical site infection to bile duct injury which may cause death. Hence, a meticulous approach can lead to successful LC.

Method: 44 adult patients aged between 39 to 60 years of age with benign GB disease were operated on with LC; prior to surgery, a hematological and radiological evaluation was carried out. Histopathological study, intraoperative, and postoperative complications were noted.

Results: Histo-pathological studies included 34 (77.2%) chronic calculous cholecystitis, 3 (6.81%) chronic calculous cholecystitis with mucocele, 2 (4.54%) acute calculus cholecystitis, 2 (4.54%) empyema G.B., 1 (2.2%) acute cholecystitis, 1 (1.2%) chronic cholecystitis with cystitis glandularis proliferans, and 1 (2.2%) chronic calculous cholecystitis. Peri and postoperative complications were 4 (9%) trocar site bleeding, 4 (9%) liver bed injury, 3 (6.8%) bile leakage from GB, 2 (4.5%) bleeding from calots, and 1 (2.2%) port infection.

Conclusion: LC is a safe and effective procedure for GB disease, but it requires an experienced surgeon to avoid morbidity and mortality for favorable results.

Keywords: gall bladder, bile duct, laparoscopy, cholecystectomy, histopathology.

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Introduction

Gallstone disease is a common and costly condition affecting approximately 20 million people globally. Cholecystectomy is the most common elective abdominal surgery practiced widely [1].

The objectives of laparoscopic cholecystectomy (LC) are disability-free survival with relief of symptoms; complications following LC impact negatively on these desired outcomes [2]. These range from superficial surgical site infection through major causes of serious morbidity such as bile duct injury to death of the patient [3]. Hence complications of laparoscopic cholecystectomy (LC) need to be understood, and consistent investigations of outcomes following LC has to be monitored so that patients can be relieved from gall bladder stone diseases without any postsurgical complications [4]. Hence, an attempt is made to evaluate the complications of LC and note the complications so every patient will be free from any post-LC complications.

Material and Method

44 patients aged between 30 to 60 years old regularly visited the Srinivas Institute of Medical Sciences, and research centers in Mukka, Surathkal, and Mangaluru- 574146 were studied.

Inclusion Criteria: Patients diagnosed with Benign GB disease, above 18 years, and who gave their consent in writing for study were selected for study.

Exclusion Criteria: Patients having common bile duct (CBD) stone or dilatation, features of obstructive jaundice and malignancy of the gall bladder (GB) were excluded from the study.

Method: Every patient was evaluated with a physical examination, relevant laboratory and radiological investigations, and underwent laparoscopic cholecystectomy (LC). Histopathological tests were conducted to evaluate the causes of GB disease; perioperative and postoperative complications were noted.

The duration of the study was from January 2022 to January 2023.

Statistical Analysis: Histopathological findings and perioperative and postoperative complications were classified with percentage. The statistical analysis

was carried out in SPSS software. The ratio of male and female was 1:2.

Observation and Results

Table 1: Histo-pathological study of cholecystitis: 34 (77.2%) had chronic calculous, 3 (6.81%) had chronic calculous cholecystitis with mucocele, 2 (4.59%) had acute calculus cholecystitis, 2 (4.54%) had empyema gall bladder, 1 (2.27%) acute cholecystitis, 1 (2.27%) chronic cholecystitis with cystitis

glandularis proliferans, and 1 (2.27%) chronic calculous cholecystitis.

Table 2: Peri and postoperative complications 4 (9%) trocar site bleeding, 4 (9%) liver bed injury, 3 (6.8%) bile leakage from gallbladder, 2 (4.5%) bleeding from calots, 1 (2.2%) port site infection

Table 3: Comparison of present study findings 62% conversion rate is compared with previous workers.

Table 1: Histopathological study of Cholecystitis

SI No	Details	No. of Patients (44)	Percentage (%)
1	Chronic calculous cholecystitis	34	77.2%
2	Chronic calculous cholecystitis with Mucocele	3	6.81%
3	Acute calculous cholecystitis	2	4.54%
4	Empyema Gall Bladder	2	4.54%
5	Acute cholecystitis	1	2.27%
6	Chronic cholecystitis with cystitis glandularis proliferans	1	2.27%
7	Chronic acalculous cholecystitis	1	2.27%

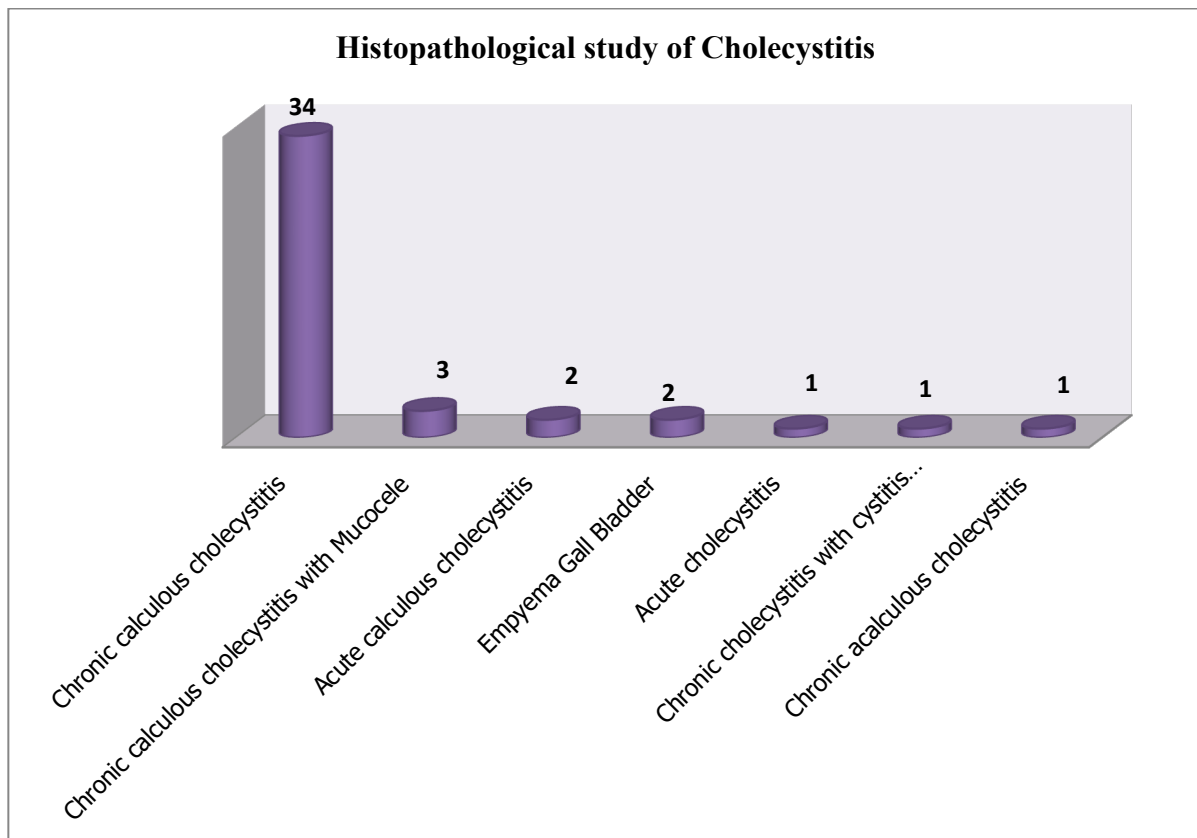


Figure 1: Histopathological study of Cholecystitis

Table 2: Peri and Post-Operative Complications (Total No. of Patients: 44)

Complications	No. of patients (44)	Percentage (%)
(A) Intra-operative complications		
Trocar site bleeding	4	9.0
Liver bed injury	4	9.0
Bile leakage from GB	3	6.8
Bleeding from calots	2	4.5
Spilled gall stones	0	0
Injury to common Bile duct	0	0

Major vascular surgery	0	0
(B) Post-operative complications		
Port site infection	1	2.27
Haemorrhage	0	0
Biliary leak	0	0
Mortality	0	0

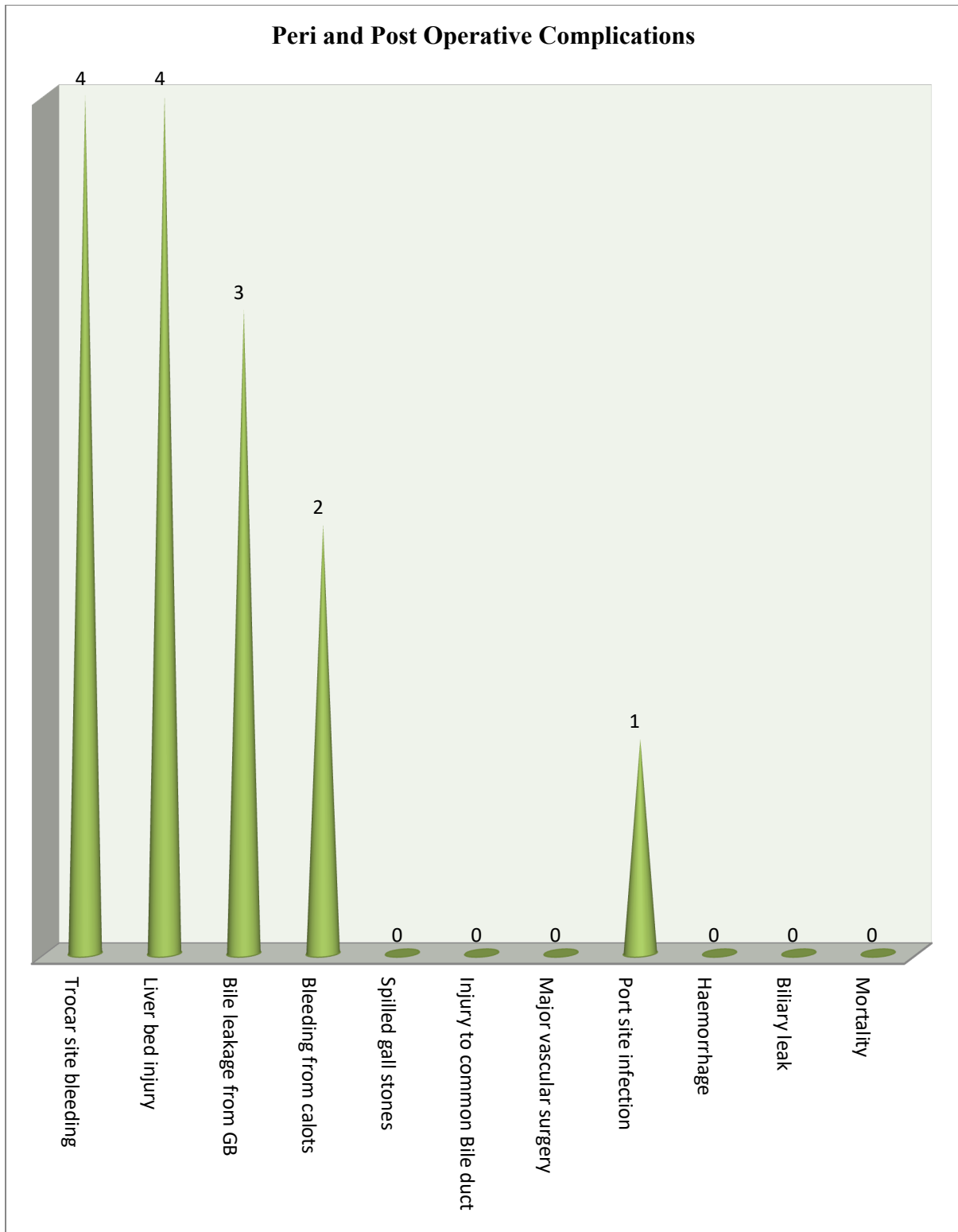


Figure 2: Peri and Post Operative Complications

Table 3: Comparison of conversion rates with previous studies

Name of the Author with year	Conversion rate percentage (%)
Rooh-ul-Mugin et al 2008	3.6
Shaun et al 2009	5.37
Ghnnam et al 2010	5.30
Daniel et al 2012	7
Shankar et al 2012	7.8
Nidani et al 2015	6
Lee S No. et al 2015	8.5
Miodrag et al 2016	3.9
Faruquzzaman et al 2017	7
Ravindra et al 2022	6
Naik et al 2022	6.1
Present study 2024	6.2

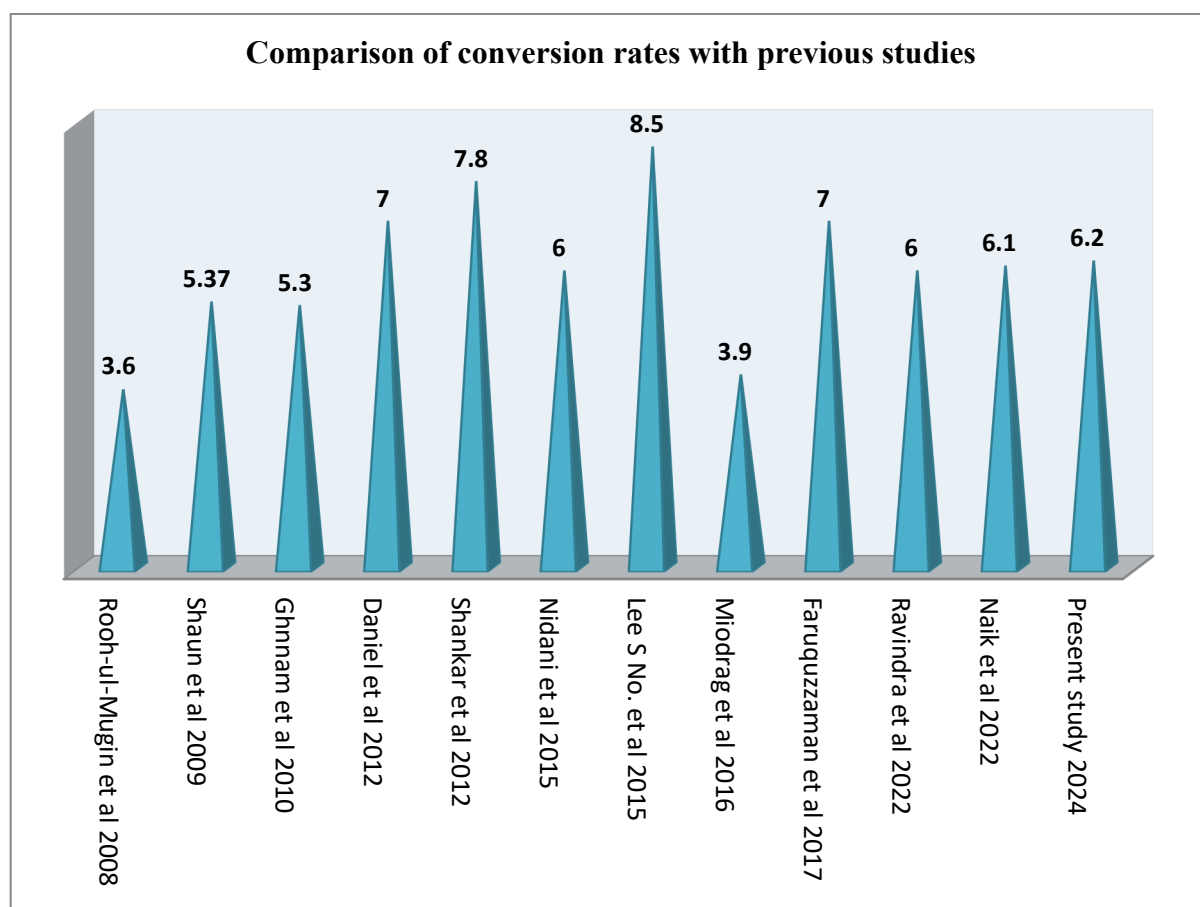


Figure 3: Comparison of conversion rates with previous studies

Discussion

Present study of complications of laparoscopic cholecystectomy in the South Karnataka population. In histo-pathological study of cholecystitis, 34 (77.2%) chronic calculous cholecystitis, 3 (6.8%) chronic calculous cholecystitis with mucocele, 2 (4.54%) acute chronic calculous cholecystitis, empyema GB, 1 (2.2%) acute cholecystitis, 1 (2.2%) chronic acalculous cholecystitis with cystitis glandularis proliferans, and 1 (2.27%) chronic acalculous cholecystitis (Table 1). Peri and postoperative complications had 4 (9%) trocar site bleeding, 4 (9%) liver bed in-

jury, 3 (6.8%) bile leakage from GB, 2 (4.5%) bleeding from calots, and 1 (2.2%) port site infection (Table 2). Conversion and compared with previous studies (Table 3). These findings are more or less in agreement with previous studies [5,6,7].

Trocar-related bowel injuries are frequently encountered during port entry. The trocar site bleeding can occur from trocar site vessels, inferior epigastric arteries, or omental vessels [8]. It was managed with pressure hemostasis from the trocar itself, diathermy, or vessel ligation. Omental vessel injury was managed with a laparoscopic energy device. Liver bed injury occurs in the form of bleeding from

the liver bed; it was more common in cases where the GB was partially intrahepatic or firmly adherent to the liver bed and the plane of dissection was not clearly defined [9]. Bile spillage may occur inadvertently during the surgical dissection of GB handled either by grasper or electrocautery dissection of GB with laparoscopic instruments. It may also occur at the time of retrieval from the abdomen spilled gallstones are due to iatrogenic perforation of GB, which is most of the time associated with spilled gallstones in the peritoneal cavity [10]. Biliary leakage was due to improper ligation of the cystic duct. The port site infection was managed conservatively with daily dressing and with intravenous antibiotics after culture and sensitivity [11]. Mortality during laparoscopic cholecystectomy is a rare phenomenon. It could be due to an undiagnosed rupture of malignancy in GB.

Summary and Conclusion

The present study of complications in laparoscopic cholecystectomy is the most advanced technique with the least rate of mortality and morbidity. It is a safe and effective procedure in patients presenting with symptomatic benign GB diseases. Most of the complications are due to inexperienced surgeons; hence, proper and skilled training of laparoscopic technique for surgeons can minimize the complications, and the LC technique can remain the gold standard method.

Limitation of Study: Owing to tertiary locations of research centers, small number of patients and a lack of the latest techniques, we have limited findings and results.

This research work was approved by the ethical committee of Srinivas Institute of Medical Sciences and research centers Mukka, Surathkal, Mangaluru-574146

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