

LAPAROSCOPIC CHOLECYSTECTOMY IN A TERTIARY CARE MEDICAL COLLEGE AND HOSPITAL- A RETROSPECTIVE STUDY FROM ODISHA, INDIA

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Abstract

Background: Laparoscopic Cholecystectomy is the most prevalent digestive system surgical surgery. It is now the preferred method of treating cholelithiasis and gallbladder inflammation in place of open Cholecystectomy. This study's objective was to evaluate the outcome of laparoscopic Cholecystectomy in terms of complications, conversion rate, and length of hospital stay. **Materials and Methods:** This retrospective analysis was conducted on 826 patients with laparoscopic cholecystectomies at Sriram Chandra Bhanja Medical College and Hospital, Cuttack, Odisha, and the socio-demographic and essential data were collected and analysed. **Result:** A total of 826 patients were studied, with 187 males (23%) and 639 females (77%). The patient's mean age was 47 years in our study. In our study, the operative time ranged from 15 to 90 minutes in 51.1% of patients. Eleven patients had bile duct injuries (1.3 percent). Out of 826 patients, 44 (5.3%) required open Cholecystectomy after the initial operation. **Conclusion:** The global scope of gallstone disease is expanding. The preferred method for treating gallstones is now laparoscopic Cholecystectomy rather than open Cholecystectomy. The majority of patients with gallstones tend to be women. The risk of an open cholecystectomy increases with male gender, thick adhesions in Calot's triangle, advanced age, acute cholecystitis, dense adhesions, fibrosis, and fewer surgical experience.

INTRODUCTION

Cholecystectomy is a common abdominal operation, and many are performed laparoscopically in developed countries. For example, 90% of cholecystectomies in the US are performed laparoscopically.^[1] Laparoscopic Cholecystectomy is the gold standard in gallstone surgery. This technique reduces pain, improves cosmetology, shortens hospital stays and reduces work disability.^[2,3,4,5] Laparoscopic Cholecystectomy has a greater risk of complications than open surgery.^[6,7] Indications include symptomatic cholelithiasis, asymptomatic cholelithiasis in patients at risk of gallstones or gallbladder cancer. acalculous cholecystitis, polyps > 0.5 cm, porcelain gallbladder.^[8] Contraindications are diffuse peritonitis with hemodynamic impairment and

uncontrolled bleeding.^[9,10] Intraoperative complications such as vascular injury, bowel perforation, mesenteric injury, and bile duct injuries require immediate laparotomy. Laparoscopic Surgery should be switched to open if the surgeon requires manual palpation and direct visualization. If necessary, surgeons should perform open surgery.^[11,12,13,14] The gallbladder hole may be closed with forceps or sutured to prevent additional spillage. Suck and flush the bile. Shedding bile without stone shedding does not aggravate postoperative infections.^[15,16,17] Gallstones, especially pigment stones, that harbor germs can increase the postoperative risk of infection.^[18,19,20,21,22,23] If possible, remove any gallstones that have been passed. This task requires large rock grabbers. If a trocar pierces a larger blood vessel, it should be left in place and a laparotomy

performed immediately.^[24,25] Trocars should be viewed with the laparoscope as they are removed to look for injured abdominal vessels. Bleeding can be treated with cautery, Foley catheter balloon tamponade, or an aft suture. Observe and mark intestinal damage during and after the procedure. If there is a leak, it can be fixed laparoscopically or openly by lengthening the umbilical incision. Then the laparoscopic surgery can begin. Bile duct damage should be corrected immediately. Indocyanine green fluorescence imaging could describe bile anatomy and avoid bile duct damage. The technique has not been tested, but seems promising.^[2,26,27,28,29] Some bile duct injuries go undetected during surgery and manifest later. All should be referred to an experienced biliary surgeon since the initial procedure has the best chance of success. If the surgeon is elsewhere, the patient should be drained externally. The aim of this study is to share knowledge in management of laparoscopic cholecystectomy problems in a tertiary care teaching hospital.

MATERIALS AND METHODS

This retrospective study included 826 patients who underwent laparoscopic Cholecystectomy at Sriram Chandra Bhanja Medical College and Hospital, Cuttack, Odisha, a government medical college and hospital in eastern India. The following data were retrospectively reviewed: patient demographics (age, gender), preoperative investigations (CBC, liver function tests, renal function tests, blood glucose levels, hepatitis screening), intraoperative findings (operative time, intraoperative bleeding and iatrogenic injuries), transformation from laparoscopic to open Cholecystectomy and reason for transformation, postoperative complication (haemorrhagic complications). Patients in which four port laparoscopic cholecystectomies were performed were included and followed up three months after the operation. We have excluded the patients with incomplete medical records. Four-port laparoscopic cholecystectomies were performed in all patients. Due to the retrospective design of the study, informed consent was not obtained.

RESULTS

In our study a total of 826 patients were evaluated who had laparoscopic cholecystectomies, of which

77% (639) were females and the rest were male. The gender distribution is provided in [Figure 1].

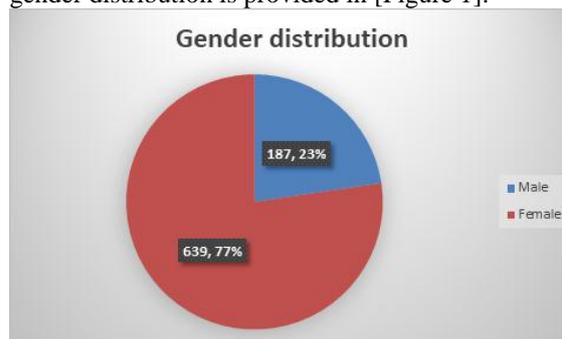


Figure 1: Gender distribution of patients

[Table 1] shows the age distribution of patients. Majority of patients were from age group 20 to 29 years (21.4%) followed by 40-49 years (20.9%). The average age of the patients evaluated in our study was 47 years.

The operation duration for patients are provided in [Table 2], in which for majority of patients (51.1%), the duration was between 15 to 30 minutes.

In our study we found 44 patients (5.3%) who required open Cholecystectomy after initial operation. The details of the number of conversion is provided in [Table 3].

In [Table 4], the reason for the conversion has been provided. The most common reason was dense adhesion (2.5%), followed by fibrotic gall bladder (1.5%).

The post-operative complications of laparoscopic Cholecystectomy is provided in [Table 5]. Majority of patients experienced gall bladder perforation (23.8%), followed by intra operative bleeding (13.2%).

The length of hospital stay is shown in [Figure 2], in which majority of patients were discharged after 24 hrs of operation.

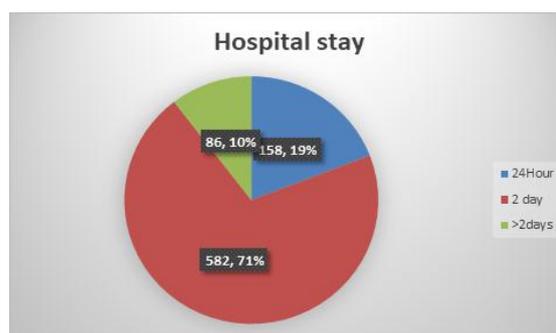


Figure 2: Hospital stay

Table 1: Age distribution of patients

Age group	Frequency (n)	Percentage %
20-29 years	177	21.4
30-39 years	159	19.2
40-49 years	173	20.9
50-59 years	136	16.5
60-69 years	102	12.3
70-79 years	65	7.9
80 years and above	14	1.7
Total	826	100

Table 2: Operation duration

		Frequency (n)	Percentage (%)
Operation time	15-30 minutes	422	51.1
	30-60 minutes	361	43.7
	More than 60 minutes	43	5.2

Table 3: Laparoscopic cholecystectomies converted to open Cholecystectomy

		Frequency (n)	Percentage (%)
Conversion to Open	No	782	94.7
	Yes	44	5.3
	Total	826	100

Table 4: Reasons for conversion

		Frequency (n)	Percentage (%)
Reasons For Conversion	Dense Adhesion	21	2.5
	Fibrotic Gallbladder	12	1.5
	Intraoperative Bleeding	5	0.6
	Acute Inflammatory adhesion	6	0.7
Total		44	5.3

Table 5 Complications of laparoscopic Cholecystectomy

	Frequency (n)	Percentage (%)
Bile duct injury	11	1.3
Duodenal Injury	3	0.4
Gallbladder perforation	197	23.8
Intra operative bleeding	109	13.2
Total	320	38.7

DISCUSSION

Laparoscopic Cholecystectomy is the most common surgery in modern medicine to treat symptomatic gallstone disease. Our institution originally recommended laparoscopic cholecystectomy treatment for patients with simple cholelithiasis. Laparoscopic Cholecystectomy, on the other hand, was made available to patients with acute calculous cholecystitis when the additional experience was gained. The age and sex distributions observed in our study were similar to those observed in previous results, with average age of 47 years reported in our study.^[15] The average duration of operation in our study was 53 minutes, which is less than the 70-90 minute range reported in other studies.^[15,16,17] This was most likely due to our case selection policy. Nineteen percent of our patients were discharged home on the first postoperative day without difficulty or readmissions. Our study reported the conversion rate of 5.5 percent, which is consistent with the results of other studies.^[18,19,20,21,22,23] Our study's most common causes for conversion were dense adhesion (2.5%), followed by fibrotic gallbladder (1.5%). Other reasons were acute inflammatory adhesion (0.7%) and intraoperative bleeding (0.6%), for which surgery was converted to open Cholecystectomy in 44 patients (5.5 percent). One of the most well-known side effects of Cholecystectomy is bleeding, 0.6 percent of patients undergoing laparoscopic Cholecystectomy had clinically significant bleeding. In our investigation, three patients experienced intraoperative bleeding that necessitated an open cholecystectomy.^[14]

Technically speaking, acute cholecystitis makes laparoscopic Cholecystectomy more challenging than in elective situations. The anatomy surrounding Calot's triangle is concealed by considerable inflammation and increased adhesion, making dissection difficult and potentially deadly. In these circumstances, the conversion should not be regarded as a problem but rather as an effort to address difficulties by more extensive surgical surgery.^[24]

While laparoscopic Cholecystectomy has several benefits over open Cholecystectomy, it also carries a unique set of risks.^[25] The laparoscopic method has a 0.2 percent to 0.9 percent possibility of bile duct injury. This warrants special attention. In our study we found bile duct injury in 1.3% of the patients.^[2,26,27,28,29] Many surgeons believe that a significant issue with laparoscopic Cholecystectomy is the relatively high prevalence of bile duct damage that might happen during the procedure. High morbidity rates, extended hospital stays, greater financial burden, increased chance of litigation, and in some cases even death are linked to injuries to the bile duct.^[20] However, as more surgeons gain experience, the frequency of this complication is projected to decline.^[30]

Gallbladder perforation during surgery occurred in 197 cases, accounting for 23.8 percent of the total. This is in contrast to the incidence, which is estimated to be between 10% and 32% 21. Dissection of the gallbladder bed, gallbladder retraction, removal of the gallbladder from the liver, and slippage of ductal cystic clips are the most common causes of bile spillage.

CONCLUSION

Its fact that laparoscopic cholecystectomy is a safe minimally invasive procedure. This study shows that both the rates of complications and the total conversion rate are below acceptable thresholds. Our findings agreed with those of the other investigations. However, a multidisciplinary approach is necessary when there is difficulty. The procedure should be carried out in a high-volume hospital because it would be beneficial in terms of mortality and morbidity.

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