

Comparison Of Open Cholecystectomy And Laparoscopic Cholecystectomy

Dr. Esha H. Sinai Bhangui^{1*}, Dr. R. G. Naniwadekar², Dr. Aakash Katkar³

¹3rd year Resident, Department of General Surgery, KIMS, Karad, Maharashtra, India

²Professor, Department of General Surgery, KIMS, Karad, Maharashtra, India

³Assistant Professor, Department of General Surgery, KIMS, Karad, Maharashtra, India

*Corresponding Author: Dr. Esha H. Sinai Bhangui

¹3rd year Resident, Department of General Surgery, KIMS, Karad, Maharashtra, India, Email: eshabhangui@gmail.com

DOI: 10.47750/pnr.2022.13.S02.57

Abstract

Background: The incidence of gallstones is one of the most important causes of morbidity in the world. The present study was conducted to compare open cholecystectomy (OC) and laparoscopic cholecystectomy (LC).

Materials & Methods: 50 patients of acute cholecystitis of both genders were divided into 2 groups of 25 each. Group I patients were of OC and group II were of LC. Parameters such as history of jaundice, blood loss, pain on VAS, duration of operation, complications, hospital length of stay, were recorded.

Results: Group I had 14 males and 11 and group II had 12 males and 13 females. The mean duration of surgery was 65.3minutes in group I and 83.2minutes in group II. Blood loss >100 ml was seen in 4 in group I and 11 in group II. Time to oral feed was 19hours in group I and 10hours in group II. The mean hospital stay (days) 5.2 in group I and 3.1 in group II. Pain on VAS was 3.6 in group I and 2.4 in group II. The difference was significant (P< 0.05). Complications in group I and group II were bleeding in 5 and 2, jaundice in 3 and 1, infection in 8 and 3, nausea in 12 and 7 and vomiting/ hernia in 15 and 6 respectively. The difference was significant (P< 0.05).

Conclusion: Laparoscopic cholecystectomy found to be effective in management of patients with gall stones. There were less post-operative complications as compared to open cholecystectomy.

Key words: Laparoscopic cholecystectomy, gall stones, open cholecystectomy.

INTRODUCTION

The evolution of laparoscopic cholecystectomy (LC) and other laparoscopic procedures in general surgery during the last 2 years has generated a lot of enthusiasm, as well as disbelief, among surgeons.¹ The first papers describing the experience of laparoscopic cholecystectomy from various centers around the world have reported increasing numbers of patients treated with this new surgical modality.² The incidence of gallstones is known to increase with an increase in age and demographic studies have demonstrated that females are more likely to have gallstones compared to males. It is estimated that approximately 20% of women and 5% of men in the age bracket of 50 to 65 years have gallstones.³

The incidence of gallstones - one of the most important causes of morbidity in the world - should increase in next year due to obesity and older age, known risk factors in the development of cholelithiasis. Currently, minimally invasive procedures, LC and MC, have largely replaced the procedure previously employed, the traditional cholecystectomy.⁴ However, there are discussions about the advantages and disadvantages of minilaparotomy surgery in relation to laparoscopic. In patients with cardiac illnesses, the carbon dioxide insufflation can induce arrhythmias.⁵ Also, the poor structural visualization can lead to the increased risk of hemorrhage and bile duct damage or leakage. Coupled with the elevated cost of equipment, the use of laparoscopic procedures in poorer set ups is a troublesome task.^{6,7} The present study was conducted to compare open cholecystectomy (OC) and laparoscopic cholecystectomy (LC).

MATERIALS & METHODS

The present study comprised of 50 patients of acute cholecystitis of both genders. All gave their written consent for the participation in the study.

Data such as name, age, gender etc. was recorded. All underwent history taking and general examination process. The routine investigations and radiology imaging were performed prior to the surgery. Patients were divided into 2 groups of 25 each. Group I patients were of OC and group II were of LC. Parameters such as body mass index (BMI), history of jaundice, blood loss, pain on VAS, duration of operation, complications, hospital length of stay, were recorded. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Groups	Group I	Group II
Method	OC	LC
M:F	14:11	12:13

Table I shows that group I had 14 males and 11 and group II had 12 males and 13 females.

Table II Comparison of parameters

Parameters	Group I	Group II	P value
Duration of surgery (mins)	65.3	83.2	0.05
Blood loss >100 ml	4	11	0.01
Time to oral feed (hours)	19	10	0.03
Hospital stay (days)	5.2	3.1	0.04
Pain on VAS	3.6	2.4	0.05

Table II, graph I shows that mean duration of surgery was 65.3minutes in group I and 83.2minutes in group II. Blood loss >100 ml was seen in 4in group I and 11in group II. Time to oral feed was 19hours in group I and 10hours in group II. The mean hospital stay (days) 5.2 in group I and 3.1 in group II. Pain on VAS was 3.6 in group I and 2.4in group II. The difference was significant ($P < 0.05$).

Graph I Comparison of parameters

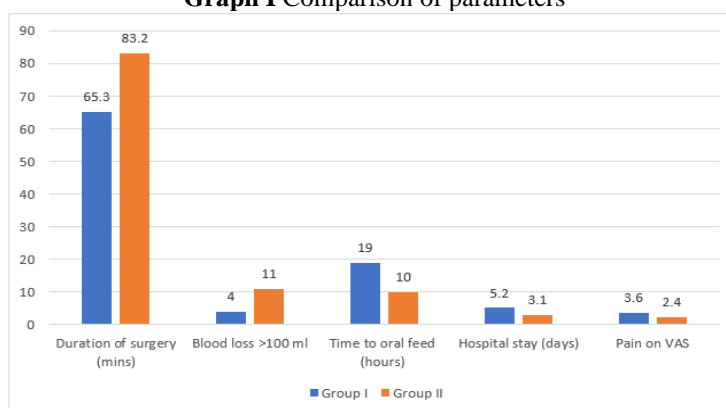
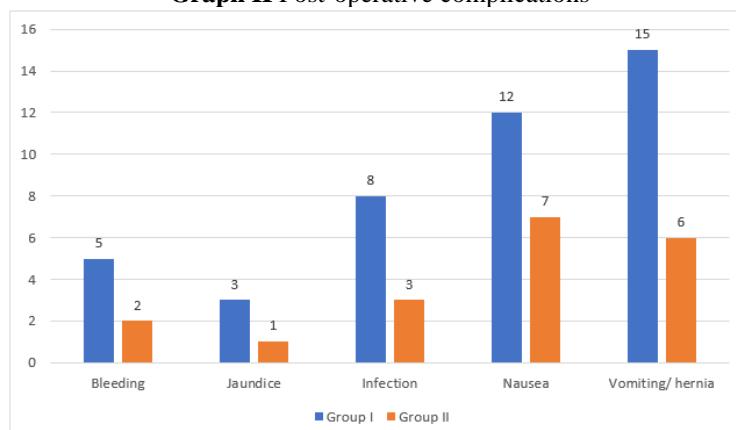


Table III Post-operative complications

Complications	Group I	Group II	P value
Bleeding	5	2	0.01
Jaundice	3	1	0.05
Infection	8	3	0.02
Nausea	12	7	0.05
Vomiting/ hernia	15	6	0.03

Table III, graph II shows that complications in group I and group II were bleeding in 5 and 2, jaundice in 3 and 1, infection in 8 and 3, nausea in 12 and 7 and vomiting/ hernia in 15 and 6 respectively. The difference was significant ($P < 0.05$).

Graph II Post-operative complications



DISCUSSION

The first open cholecystectomy was performed by Carl Langenbuch in 1882, who believed in the theory that the gallbladder needed to be removed not because it had gallstones, but because it was “sick”.⁸ After that, the technique was popularized through large incisions. In 1985, Erich Mühe in Böblingen, Germany, performed the first laparoscopic cholecystectomy (LC), which became dominant process in the treatment of cholecystitis in late eighties.^{9,10} Presently, LC enjoys the status of being a safe, reliable and routine procedure, preferred by both surgeons and patients due to its minimal access technique which includes reduced postoperative pain, faster mobilization of the patient, reduced hospital stay and better cosmetic results as compared to the open technique, which have further increased its applications.^{11,12} The present study was conducted to compare open cholecystectomy (OC) and laparoscopic cholecystectomy (LC).

We found that group I had 14 males and 11 and group II had 12 males and 13 females. Pateria et al¹³ in their study 100 subjects divided in two groups based on modality employed. The operative and post-operative parameters were noted and presented. The study displayed that the advent of post-operative complications as well as hospital stay duration was higher in traditional laparoscopic cholecystectomy cases. The study reiterated the long known fact that laparoscopic surgeries in gall stones is favorable from the patient perspective but is riddled with unavailability due to financial and infrastructure based concerns.

We found that mean duration of surgery was 65.3 minutes in group I and 83.2 minutes in group II. Blood loss >100 ml was seen in 4 in group I and 11 in group II. Time to oral feed was 19 hours in group I and 10 hours in group II. Glinatis et al¹⁴ in their study 2 groups of 40 patients (31 females, 9 males), matched for age and body mass index, who underwent either elective open cholecystectomy (Group I) or elective laparoscopic cholecystectomy (Group II) were studied retrospectively to detect differences in operating time, morbidity and mortality, hospital length of stay, and use of postoperative analgesics. The two groups of patients had almost identical histories of gallstone disease. The median operating time for the patients in Group I was 45 min (range 35-95) compared with 90 min (range 50-135) in Group II. An intraoperative cholangiogram was performed in 21 of the patients in Group I and 22 patients in Group II. There were no deaths in either group. The overall complication rate was 22.5% in Group I and 10% in Group II. Median postoperative length of stay was 5 days for Group I patients and 2 days for Group II patients. All Group I patients required postoperative intravenous or intramuscular opiates, while 10% of Group II patients did not require any analgesia at all and pain was controlled with oral analgesics alone in 16%. Median total morphine dose for Group I patients was 46.9 mg (range 9.4-180), as compared with only 15.6 mg (6.2-37.5) for Group II patients. This study concludes that laparoscopic cholecystectomy led to less complications, shorter hospital length of stay, and minimal use of postoperative analgesia.

We found that the mean hospital stay (days) 5.2 in group I and 3.1 in group II. Pain on VAS was 3.6 in group I and 2.4 in group II. Complications in group I and group II were bleeding in 5 and 2, jaundice in 3 and 1, infection in 8 and 3, nausea in 12 and 7 and vomiting/ hernia in 15 and 6 respectively. Purkayastha et al¹⁵ compared the LC and MC, included nine randomized controlled trials with a total sample of 2032 patients. All outcome measures had no statistically significant results, with the exception of surgical time and hospital stay. The mean of surgical time was 14.14 minutes higher in the group that performed the LC, and mean of hospitalization time was 0.37 days higher in the group that made the MC. Comparatively, in this review we found that the mean of operative time was 31.83 minutes higher in the LC, and the mean of hospitalization was 0.79 days higher in the group that performed the MC. The limitation the study is small sample size.

CONCLUSION

Authors found that laparoscopic cholecystectomy found to be effective in management of patients with gall stones. There were less post-operative complications as compared to open cholecystectomy.

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