OPEN ACCESS

Saudi Journal of Nursing and Health Care

Abbreviated Key Title: Saudi J Nurs Health Care
ISSN 2616-7921 (Print) |ISSN 2616-6186 (Online)
Scholars Middle East Publishers, Dubai, United Arab Emirates
Journal homepage: https://saudijournals.com

Original Research Article

A Cross Sectional Study of Comparison of Open Cholecystectomy with Laparoscopic Cholecystectomy in Patients with Cholelithiasis

Tabinda Parray[1]*, Aamir Fayaz[2], Manbir Kour[3]

[1]Assistant Professor, Department of Health and Allied Science, Global Group of Institutions Amritsar India
[2]Assistant Professor, Department of Health and Allied Science, Global Group of Institutions Amritsar India
[3]Principal, Department of Pharmacy, Global Group of Institutions Amritsar India

DOI: https://doi.org/10.36348/sjnhc.2026.v09i01.002 | **Received:** 13.11.2025 | **Accepted:** 03.01.2026 | **Published:** 07.01.2026

***Corresponding author:** Tabinda Parray
Assistant Professor, Department of Health and Allied Science, Global Group of Institutions Amritsar India

Abstract

Here we compare open cholecystectomy (OC) and Laparoscopic cholecystectomy (LC) with respect to duration of surgery, duration of post operative pain and duration of post operative stay in the hospital. 150 patients below 80 years were selectio to carryout the present study in District Hospital Bandipora and Tertiary Care Hospital Srinagar from May 2021 to July 2023. The patients were rendomly assigned into two groups X and Y. Group X consisted of patients that underwent Laparoscopic surgery and Group Y consists of patients that undergo open surgery. The result shows that duration of surgery, duration of pain and stay in the hospital were lower in Laparoscopic group. Main advantages of LC were reducted pain, rapaid recovery and reduced hospital stay.

Keywords: Cholelithiasis, LC and OC.

INTRODUCTION

Gall stones are the main cause of morbidity and mortality among patients all over the world [1]. Open cholecystectomy (OC) was only treatment of gall stones upto the end of 1980, first performed in 1882 by Karl Langenbuch [2]. With the introduction of LC in early 1990s, there has been a gradual shift in the treatment with most of surgeons preferring LC over OC. The first LC was performed by Philleppe Mouret in France and has now become the most common Laparoscopic surgery performed worldwide [3-5]. The Laparoscopic procedure is associated with a nubmer of advantages for the patients as it provides early post operative pain relief, early return to normal activity, decreased hospital stay and reducted cost [6]. The safety of LC for elderly has also been confirmed in may studies as an acceptable procedure and is now preferred procedure for cholecystectomy [7]. Despite having large benefits LC does have drawbacks also like increased bile duct injuries and longer duration of operation [8]. Apart from this, three dimensonial depth perception is limited and it sometimes become difficult to visualize internal structure properly [9]. In cardic patients OC is prefered over LC as carbondioxide insufflations in such patients can lead to cardic arrhythmias [10]. The initial cost for the setup of laparoscopic surgery is high and the time taken to gain the expertise over this procedure is also long as compared to open procedure. Taking into consideration the merits and demerits of both OC and LC, further studies are needed to highlight the superiority of one over the other.

METHODOLOGY

The study of 150 patients was carried out in District Hospital Bandipore and Tertiary Care Hospital Srinagar Kashmir between May 2021 to July 2023. The study included all symptomatic patients with cholelithiasis who were admitted ins surgical wards. Complete history of the disease was taken from the patients and proper physical examination was done for diagonsing a patients with gall blader stone. Following investigation were performed before operation. CBC, blood sugar level, routine urine examination, LFT, Chest X-Ray and abdominal USG.

The patients were randomly assigned into two groups X and Y. Group X consisted of patients that underwent laproscopic surgery while as Group Y consisted patients that underwent open surgery for cholelithiasis. The patients were explained in detail about both the procedures. The patients were evaluated for duration of surgery, during of post operative pain, post operative stay in the hospital and resumption of normal diet.

RESULTS

Table I: Depicts the sex distribution of patients that underwent LC and OC Sex Distribution

Sex	LC	OC
Male	20	13
Female	55	62

Out of 150 patients, 117 were females (78%) and 33 were males (22%). 20 males and 55 females in Group X underwent laproscopic surgery while as 13 males and 62 females in Group Y underwent open surgery. The age of patients ranged from 18 to 74 years with most in the age group 41 to 65 years.

Table II depicts the symptom profile of patients in both groups and its bar graph representation is shown in figure 1.

Table II: Symptom Profile

Surgery	Pain	Post prandial fullness	Nausea and vomiting	Dyspepsia	Belching	Fever
LC	70	45	40	30	21	15
OC	69	43	40	32	19	10

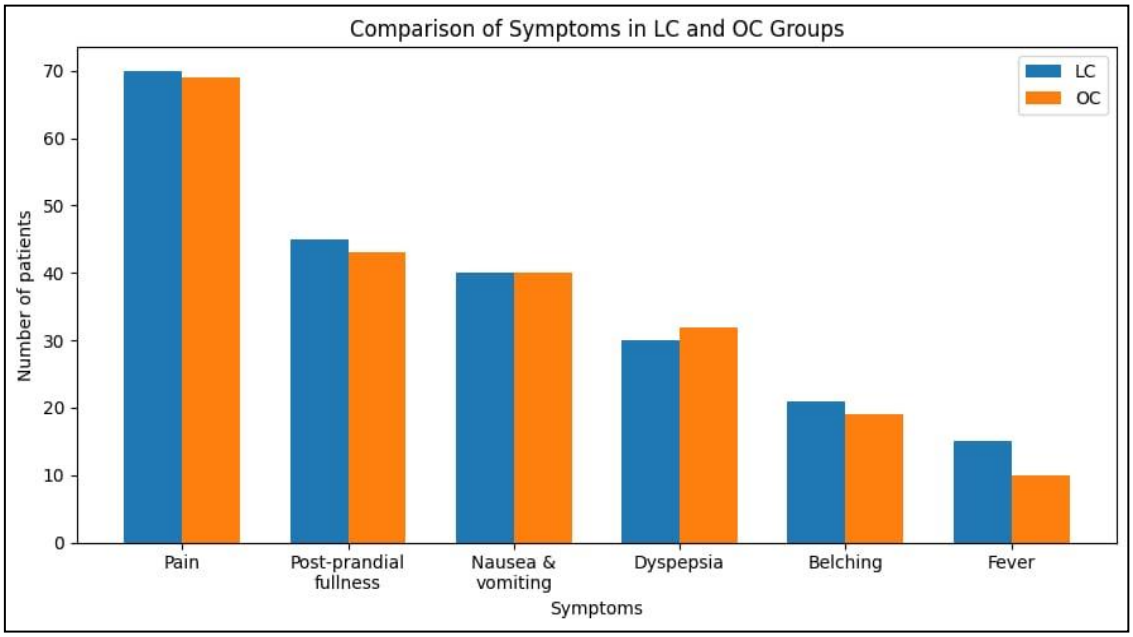

Figure I

Both the groups showed a high prevalence of pain, with 70 patients in LC group and 69 in the OC group. Post prandial fullness was observed in 45 LC patients and 43 OC patients. Nausea and vomiting were equally reported in both groups (40 petients each). Dyspepsia was slightly more common in OC group (32 patients) compared to LC group (30 patients) belching and fever were more frequently observed in LC group than in OC group.

Table III depicts the comparison of operative time between LC and OC and the bar graph representation of the data obtained is shown in figure II.

Table III: Time taken for surgery

LC				OC			
< 1.5	%	>1.5	%	<1.5	%	>1.5	%
68	90	7	10	55	73	20	27

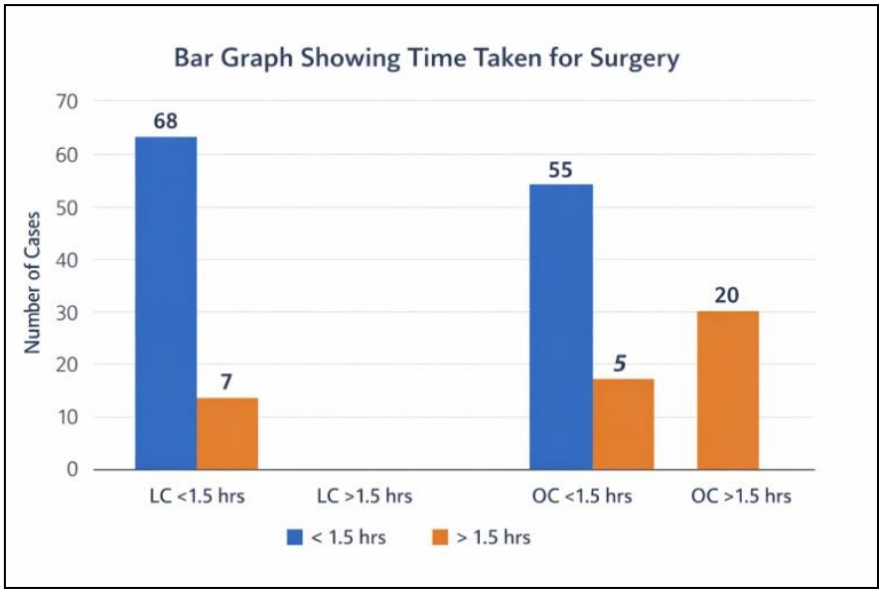

Figure II

The bar graph in figure II illustrates the distribution of surgical cases according to the time taken for LC and OC. Out of total cases, 68 LC surgeries and 55 OC surgeries were completed in less than 1.5 hours. In contrast only 7 LC surgeries and 20 OC surgeries exceeds 1.5 hours. This indicates that the majorityof surgeries regardless of the type were completed within 1.5 hours with LC procedure showing a notably higher proportion of faster completion. Statistical analysis showed a significant difference in operative time between the two groups ($P<0.05$), indicating that laparoscopic surgery generally requires less operative time.

Table IV depicts the duration of hospital stay after surgery and the bar graph representation of the data obtained is shown in figure III.

Table IV: Number of days of hospital stay

Surgery	< days	%	5 days	%
LC	70	94	5	6
OC	0	0	75	100

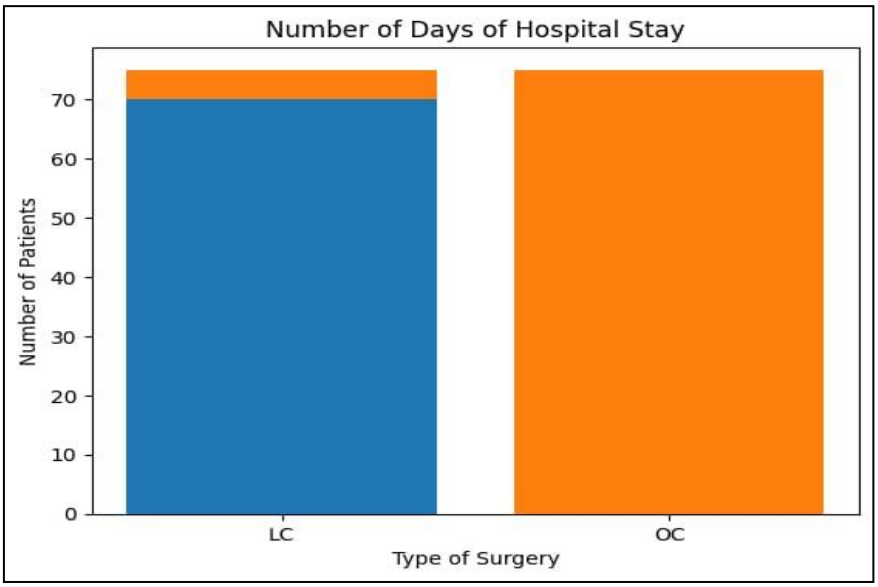

Figure III

The bar graph shows a clear difference in the duration of hospital stay between the two types of surgeries. Among patients who underwent LC, the majority (70 patients; 94%) stay in the hospital for less than 5 days while only 5 patients (6%) required a stay of more than 5 days. In contrast, for OC all patients (75

patients; 100%) had hospital stay of more than 5 days and none were discharged within 5 days.

DISCUSSION

The operative time for laproscopic surgery was found to be more than open cholecystectomy according to Supe AN *et al.,* [10]. According to waldner H *et al.,* there was no significient time difference between both the procedures [11]. The present study shows that LC is associated with shorter operative time compared to OC. The majority of laproscopic procedures were completed within 1.5 hours, reflecting its minimally invasive nature and efficiency. OC in contrast had a higher proportion of longer surgeries likely due to the need for logner incision, tissue dissection and more extensive handling of Intra-abdominal structures. Shorter operative time in laproscopic surgery may contribute to reducted anesthasia exposure, lower post operative pain, quicker recovery and shorter hospital stay. These finding are consistent with previous studies reporting laproscopic cholecystectomy as a faster and less invasive alternative to open surgery, while maintaining comparable safety and efficacy.

Pain is an inevitable outcome of any surgical procedure nd early relief from pain is one of the primary goal of treatment. Early relief from post operative pain was seen in LC as compared to OC patients in the present study. The comperative analysis of clinical symptoms between LC group and OC group shows that both groups have similar clinical presentation. Pain was most frequently rreported symptom in both groups affecting 70 patients in LC group and 69 patients in OC group, indicating that pain is dominent presenting complaint irrespective of groups classification. Post-prandial fullness was also commenly observed with slightly higher prevalence in LC group (45 patients) compared OC group (43 patients), suggesting minimal variation between the groups. Nausea and vomiting were reported equally in both groups (40 patients each) reflecting no observable difference in this symptom.

Patients who underwent OC had larger in hospital stay than those who underwent LC. The findings of present study indicates that most of LC patients (94%) were discharged within 5 days, suggesting fast recovery, reduced post operative completion and quicker return to the normal activities. On the other hand, OC patients required prolonged hospitilization, likely due to more invasive nature of the procedure increased post operative pain and longer recovery time. Similar results occur in the early studies conducted by Carbojo *et al.,* [12], and verma Gh etal [13]. Overall LC appers to be preferred surgicl approach when feasible, particularly in terms of operative time, early patient recovery and reduced hospital stay which can lead to lower healthcare costs and improved patient comfort and outcomes.

CONCLUSION

From the above discussion of the results obtained, it is concluded that LC canc be recommended as the first choice operative treatment for patients with cholelithiasis as it provides cosematic results, lesser pain, lesser post operative stay in hospital and fever incidence of surgical site infection.

Acknowledgement

The authors are thankful to Chairman Global Group of Institutions Dr. B.S. Chandi, Vice Chairman Dr. Akashdeep Singh Chandi and Dr. Arvind Dewangan Dean of Research and Development Global Group of Institutions Amratsar India for their support.

REFERENCES

1. Doke A, Gadekar N, Gadekar J, Desh N, Unawane S, A Comperative Study between open versus Laparescopic Cholecystectomy Sch J APP Med Sci 2016; 4(1); 57-61.
2. Beal JM; Historical Prespective of Gall Stone Disease, Surg Gynecol Obstet 18, 158, 181.
3. Mcherry CK, open Cholecystectomy Am J Surg, 1993; 165; 435-9.
4. Ji W, Li Lt, Li Js, Role of Laparoscopic Subtotal Cholecystectomy in the Treatment of Complicated Cholecystitis, Hepatobilpan creat DIS Inst 2006: 5(4); 584-9
5. Cishien A, Laparoscopic Cholecystectomy, JR Coll Surg Edinb 1999; 187-92
6. Starasberg SM, Clinical Practice Acute Calculus Cholecystitis, New England Journal 2011: 358(26): 2804
7. Kuwaabara K, Matsuda S, Ishikaw KB, Horiguchi, H, Fujimori; Comparative Quality of Laparscopic and open Cholecystectomy in the Elderly using Propensity score matching Analysis Gastroenterology Research and Practice 2010; 10, Article ID 490147
8. Paulino Netto A, A review of 391 selected open Cholecystectomies for Comparision with Laparscopic Cholecystectomy Am J Surg 1993; 166; 71-3
9. Lundberg D, Kristoffersion A, open versus Laparscopic Cholecystectomy for gall bladder Carcinoma J, Hepatobilliary Pancreat Surg 2001; 8(6); 525-9
10. Supe AN, Bapat VN, Pandya SV, Dalvi AN, Bapat RD Laparscopic verses Open Cholecystectomy, Indian J, Gastroenterology, 1996 15(3); 94-6
11. Waldner H; Laparscopic verses open Cholecystectomy in acute Cholecystitis Langen Becker Are, Chir Suppl Kongress bd 1997; 144; 1177-9
12. Carbajo CM, Martion DOJ, Blanco AJ, Cuesta DLLC, Atienze SR, Vaquero PC; Surgical Treatment of actude Cholecystitis in the Laparscopic age. A comparative study; Laparscopic against Laparotomy Rev ESP, Enfem Dig 1998; 90(11) 788-93
13. Verma GR; Laparscopic versus open Cholecystectomy Indian J Gastroentrollogy 1997