

Scope of Laparoscopic Cholecystectomy in Patient with History of Previous Upper Abdominal Surgery

MUHAMMAD ZEB¹, MUHAMMAD ZARIN², IJAZ AHMAD KHAN³, SAMIULLAH⁴, MUHAMMAD YOUNAS KHAN⁵, KALEEMULLAH⁶

¹Consultant General Surgeon DHQ Hospital Dir upper

²Professor of Surgery Khyber teaching hospital Peshawa

³Medical Officer Health department kpk

⁴District Surgeon DHQ Hospital Dir upper

⁵Assistant professor of surgery Khyber teaching hospital Peshawar.

⁶Khyber medical college Peshawar

Correspondence to: Muhammad Zeb

ABSTRACT

Introduction: In recent years, laparoscopy's role in treating benign gallbladder and biliary tract diseases has been well confirmed.

Objective: The main objective of the study is to find the scope of laparoscopic cholecystectomy in patient with history of previous upper abdominal surgery.

Material and methods: This retrospective study was conducted in khyber medical center Peshawar during June 2022 to December 2022. An informed consent was obtained from each patient included in the study. The primary outcomes of the current study involves incidence rate of intraoperative biliary injury and the secondary outcome of the study includes postoperative strictures, bile leaks, hernia, infections, postoperative need for reoperation or drainage.

Results: A total of 316 cholecystectomies were performed. Out of these 28 were performed with other hepatobiliary or bariatric operations. The remaining subjects 288, out of which 212 did not show severe cholecystitis and the remaining 76 had severe cholecystitis. 51 patients with severe cholecystitis had LC and 22 were treated with LSC out of those 3 went through open cholecystectomy and were excluded from the study.

Practical Implication: This study will help us in hospitals in Laparoscopic cholecystectomy because it's a safe method and procedure.

Conclusion: It is concluded that Laparoscopic cholecystectomy is a feasible and safe treatment for symptomatic gallstone disease in selected patients with previous upper abdominal surgery history.

Keywords: Laparoscopic cholecystectomy, Procedure, Patients, Abdominal

INTRODUCTION

In recent years, laparoscopy's role in treating benign gallbladder and biliary tract diseases has been well confirmed. Laparoscopic cholecystectomy (LC) enjoys the benefits of diminished torment, more limited healing, decreased employable pressure, and restricted fiery reaction¹. It has turned into the highest quality level for treating harmless gallbladder sicknesses. Concerning normal bile pipe (CBD) stones, contrasted with different medicines, for example, endoscopic retrograde cholangiopancreatography (ERCP), laparoscopic normal bile channel investigation (LCBDE) has acquired boundless acknowledgment since it saves the capability of the sphincter of Oddi, works with more limited clinic stay, and creates an equivalent stone freedom rate².

The best quality level treatment for suggestive gallstones is laparoscopic cholecystectomy. Diminished postoperative uneasiness and issues, faster ambulation, more limited medical clinic stay, and further developed cosmeses are benefits over open cholecystectomy. LC has various benefits over open a medical procedure, including a more limited clinic stay (and thus a speedier re-visitation of everyday exercises and work), less postoperative torment, a quicker recuperation, better cosmesis, and a less expensive expense³. During LC, various issues might grow, some of which are special to this methodology and others which are normal to laparoscopic medical procedure overall⁴.

Sedation related difficulties, peritoneal access inconveniences (e.g., vascular wounds, instinctive wounds, and port-site hernia development), pneumoperitoneum intricacies (e.g., heart confusion, pneumonic entanglements, and gas embolism), and thermocoagulation complexities are only a couple of them⁵. Numerous troubles have been recorded during LC, including sedation, Peritoneal access, pneumoperitoneum, careful investigation, and thermocoagulation are worries that might require change from LC to open cholecystectomy, alongside various extra factors (OC). Change ought not be viewed as a specialized disappointment when it is proper, yet rather as an unrivaled careful practice by both the patient and the specialist⁶.

No matter what the way that various examinations have uncovered shifting paces of the reasons of this worldwide clinical issue, each establishment should be totally mindful of the rate and

reasons for change to open a medical procedure relying upon culture and geology, as well as inside the organization. A background marked by stomach tasks has generally been viewed as a contraindication to the laparoscopic approaches, yet as of late new ones have been involved to assist with decreasing Open cholecystectomy in examination with laparoscopic cholecystectomy⁷.

As of now, the standard treatment for suggestive cholelithiasis is laparoscopic cholecystectomy (LC). LC enjoys a few upper hands over the open methodology, including better surface level results, less postoperative torment, and more limited clinic stay. Then again, it has been accounted for that the pace of change of LC to open a medical procedure is around 8.9% overall and higher than that in intense cholecystitis cases specifically contrasted with elective cases⁸.

Laparoscopic cholecystectomy (LC) diminishes postoperative agony, permits prior oral admission, abbreviates emergency clinic stay, upgrades prior return to ordinary movement, and improves cosmesis over open cholecystectomy. LC is currently acknowledged as the new best quality level for the treatment of suggestive gallbladder disease⁹. Notwithstanding, there is as yet a significant extent of patients in whom LC can't be effectively performed and for whom change to open a medical procedure is required. Various relative contraindications, like horrible corpulence, past upper stomach a medical procedure, and intense cholecystitis, have been proposed in deciding if a patient is a contender for laparoscopic cholecystectomy. With growth in experience, criteria for selecting patients for LC have been liberalized¹⁰.

Objective: The main objective of the study is to find the scope of laparoscopic cholecystectomy in patient with history of previous upper abdominal surgery.

MATERIAL AND METHODS

This retrospective study was conducted in---khyber medical center peshawar during June 2022 to December 2022.

Inclusion criteria

- All the patients > 18 years who underwent LC, and whose medical data records were accessible.

Exclusion criteria

- Patients who do not want to participate in the study.
- Patients with pregnancy, undergoing another invasive procedure in addition to LC (such as sleeve gastrectomy), single port laparoscopic and mini-LC procedures were excluded.

Data Collection: An informed consent was obtained from each patient included in the study. The primary outcomes of the current study involves incidence rate of intraoperative biliary injury and the secondary outcome of the study includes postoperative strictures, bile leaks, hernia, infections, postoperative need for reoperation or drainage.

All operations were performed with each patient positioned in reverse trendelenburg position with a slight left side tilt. Two 5mm and 10mm laparoscopic ports were used to perform the operation. To display the gallbladder a complete abdominopelvic cavity assessment was performed. LC was performed only if the gallbladder was positioned off of the liver. The types of previous abdominal surgeries were also recorded. Preoperative laboratory analysis of patients included white blood cell count, total serum bilirubin, alkaline phosphatase, aspartate transaminase, alanine transaminase, and amylase. Each was in normal ranges in all patients.

Statistical Analysis: A chi square test was used to compare the results. For all operative and postoperative complications such as bile leak, bile duct injury and hernia, risk ratio was used. SPSS v.23 was used to analyse the statistics.

RESULTS

A total of 316 cholecystectomies were performed. Out of these 28 were performed with other hepatobiliary or bariatric operations. The remaining subjects 288, out of which 212 did not show severe cholecystitis and the remaining 76 had severe cholecystitis. 51 patients with severe cholecystitis had LC and 22 were treated with LSC out of those 3 went through open cholecystectomy and were excluded from the study. The demographic data of both groups LC and LC with previous abdominal surgeries were compared, demographic data is summarised in table no 1. No significant difference was found in the comparison of demographic data such as age, gender etc. All patients included in the study had severe cholecystitis. Intraoperative biliary injury was detected in only one patient in LC group and open exploration was done including repair of injury with T-tube insertion. From the group I there was no case of intraoperative biliary injury detected. However, post-operative bile leak cases were significantly higher in patients with previous abdominal surgeries compared to LC group.

Table 1: Operative findings and Demographic data of all patients

Demographic data	LC with no previous abdominal surgery		LC with previous abdominal surgery		P-value
	No.	%	No.	%	
Age (Median)	46.5 (21-72) years		48.5 (30-67) years		
Hospital stay (median)	(1-21) Days		(1-15) days		
Adhesions	13	25.49	7	31.8	0.6
Inflammation	7	13.7	5	22.72	0.3
Perforation	9	17.6	4	18.2	0.4
Gangrene	12	23.5	3	13.6	0.2
Gallbladder contraction	4	7.8	2	9	0.4
Empyema	2	3.9	1	4.5	0.5
Mirizzi's Syndrome	4	7.8	0		0.05

Table 2: Data representation of Operative and post-operative complications and interventions

Post-operative complications	Group I	Group II	RR
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	No	No	%
Biliary Injury	12	20	
Bile Leaks	21	22	9.09
Biliary Strictures	11	10	
Common bile stones	29	31	4.5
Hernia	01	09	4.5
Wound Infection	26	31	4.5
Drainage Collection	40	46	18.1
Reoperation for Collection	21	11	4.5
Total	15	10	45.45

Our study showed that one of the converted patients with upper abdominal surgery had a previous gastrectomy. The conversion was directly attributable to adhesions. We found that one of the converted patients with lower abdominal surgery had had a sigmoid resection previously for sigmoid volvulus

Table 3: Causes of Conversion to Open Cholecystectomy in Each Group

Cause	Group 1	Group 2
Dense adhesion in Calot's triangle	4	1
Uncertain anatomy	2	-
Friable gallbladder	1	-
Failed pneumoperitoneum	1	1
Thick cystic duct	1	-

DISCUSSION

Compared with and open cholecystectomy, LC can decrease postoperative agony, permit prior oral admission, abbreviate emergency clinic stays, elevate prior return to ordinary exercises, and give better surface level outcomes¹¹. With the advancement of laparoscopic innovation and hardware, LC has turned into the highest quality level for treating harmless gallbladder infections. There are right now more choices for treating CBD stones. ERCP and LCBDE have turned into the two essential negligibly obtrusive treatment choices in clinical practice¹².

The investigation of Karayiannakis et al.¹² led a review concentrate on 473 patients whom had gone through past stomach a medical procedure (58 patients with UAS and 415 patients with LAS)¹³. Of these, 402 patients had gone through 1 past activity, 59 had gone through 2 past tasks, 11 had gone through 3 previous tasks, and 1 had gone through 4 past tasks while our review included patients with just 1 entry point. On a similar subject Kohli et al.¹³ concentrate on looked at the practicality of laparoscopic cholecystectomy in patients with and patients without past stomach a medical procedure, concerning the quantity of patients included, just 8 patients out of 195 patients remembered for his review had past upper stomach cuts while 97 patients without any set of experiences of past stomach activity and 90 patients with history of past lower stomach tasks, with age going from 18 to 70 years¹⁴⁻¹⁵. Most of grips from past upper stomach a medical procedure, as per Akyurek et al., don't change the life systems of the right upper quadrant of the mid-region and don't considerably affect the outcome of a laparoscopic cholecystectomy In our review, in regards to Strategies for safe passage to the mid-region among the members, Safe section of first trocar was our objective in quite a while so we involved various strategies for first trocar addition in this manner forestalling injury to entrail or any design that would stick to stomach wall, the Hasson's method was utilized among 52%, Veress needle was utilized among 24%, Palmer's point was utilized among 18%, Visi port was utilized among 6% of the members. It is sensible to assume that grips will cause addition of a laparoscope tricky in people who to have had past upper stomach a medical procedure¹⁶⁻¹⁸. The impact of past UAS on LC has been broadly researched, and in many preliminaries, earlier medical procedure didn't expand the hour of medical procedure, the pace of entanglements, the pace of change, or the length of stay in the emergency clinic¹⁹.

Bile conduit structures are a known difficulty of the methodology in center (LC) and the frequency revealed in past writing is 0.5%. In the ongoing concentrate just a single patient in the LC bunch had this difficulty and there was no case rate in the

LSC bunch. The patient was treated with ERCP and the treatment ended up being a triumph. Biliary stones in the gallbladder with repetitive gallbladder illness side effects normally happen in 4-24% of patients tracked down in past writing²⁰.

CONCLUSION

It is concluded that Laparoscopic cholecystectomy is a feasible and safe treatment for symptomatic gallstone disease in selected patients with previous upper abdominal surgery history. Based on our study, LC can be performed safely in patients with previous upper or lower abdominal surgery, if they do not have such conditions as acute cholecystitis and pancreatitis.

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