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Original Research Article

Laparoscopic Completion Cholecystectomy: A Retrospective Study

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Abstract:

Background: Laparoscopic completion cholecystectomy (LCC) is a surgical procedure performed on patients who have previously undergone a partial cholecystectomy. This study aims to evaluate the outcomes and complications associated with LCC in a series of 40 cases at Netaji Subhash Medical College, Bihta, Patna, from January 2024 to May 2024.

Materials and Methods: A retrospective analysis was conducted on 40 patients aged 50-65 years who underwent LCC between January 2024 and May 2024. Data were collected from medical records, including patient demographics, indications for surgery, intraoperative findings, operative time, postoperative complications, and hospital stay duration. Statistical analysis was performed to assess the correlation between patient characteristics and surgical outcomes.

Results: Out of the 40 patients, 25 were male, and 15 were female. The mean operative time was 90 minutes (range: 75-120 minutes). The most common indication for LCC was residual gallbladder stones, accounting for 70% of the cases. Intraoperative complications occurred in 10% of the cases, with bile duct injury being the most significant complication. Postoperative complications were observed in 15% of the patients, including wound infection (5%) and bile leakage (10%). The average hospital stay was 4 days (range: 3-7 days). No mortality was reported in this series.

Conclusion: Laparoscopic completion cholecystectomy is a feasible and safe procedure with acceptable morbidity rates. It is a viable option for patients with residual gallbladder disease following partial cholecystectomy. Proper patient selection and surgical expertise are crucial for minimizing complications and ensuring favorable outcomes.

Keywords: Laparoscopic completion cholecystectomy, residual gallbladder stones, postoperative complications, bile duct injury, retrospective study.

Introduction

Laparoscopic cholecystectomy has become the gold standard for the treatment of symptomatic gallstones and other gallbladder pathologies due to its minimally invasive nature, shorter recovery times, and reduced postoperative pain [1]. However, in some cases, a partial cholecystectomy is performed due to difficult surgical conditions such as severe inflammation, dense adhesions, or anatomical anomalies, leaving behind a residual gallbladder [2,3]. This residual gallbladder can harbor stones or lead to other complications, necessitating a completion cholecystectomy [4].

Laparoscopic completion cholecystectomy (LCC) is a surgical intervention performed to remove the remaining gallbladder tissue after a previous partial cholecystectomy. Despite its benefits, LCC is technically more challenging than primary laparoscopic cholecystectomy due to the presence of dense adhesions and altered anatomy [5]. Previous studies have reported varying outcomes and complication rates associated with LCC, highlighting the need for further investigation to optimize patient care and surgical techniques [6,7].

This study aims to evaluate the outcomes and complications associated with LCC in a series of 40 cases at Netaji Subhash Medical College, Bihta, and Patna. By analyzing patient demographics, intraoperative findings, postoperative outcomes, and complication rates, this study seeks to contribute to the existing body of knowledge and provide insights into the feasibility and safety of LCC in a clinical setting.

Materials and Methods

A retrospective study was conducted at Netaji Subhash Medical College, Bihta, Patna, to evaluate

the outcomes of laparoscopic completion cholecystectomy (LCC). The study included 40 patients aged between 50 and 65 years who underwent LCC from January 2024 to May 2024. Patient consent was waived due to the retrospective nature of the study.

Patient Selection: Patients who had previously undergone partial cholecystectomy and presented with residual gallbladder disease, such as retained stones or chronic cholecystitis, were included. Exclusion criteria were patients with severe comorbidities, those who underwent open cholecystectomy, and those with incomplete medical records.

Data Collection: Data were collected from medical records, including patient demographics (age, sex), indications for LCC, intraoperative findings, operative time, postoperative complications, and duration of hospital stay. Preoperative imaging, including ultrasound and MRCP, was reviewed to assess the residual gallbladder and biliary anatomy.

Surgical Procedure: All procedures were performed under general anesthesia using standard laparoscopic techniques. The patient was placed in the supine position, and pneumoperitoneum was established using a Veress needle or an open technique. Four trocars were inserted: one at the umbilicus for the camera, one in the epigastrium, and two in the right upper quadrant for working ports.

Adhesions were carefully dissected to identify the residual gallbladder. The cystic duct and artery were clipped and divided. The gallbladder was then dissected from the liver bed, ensuring complete removal of all residual tissue. Intraoperative cholangiography was performed in select cases to confirm the absence of bile duct stones.

Postoperative Care: Patients were monitored in the postoperative ward and were discharged once they were afebrile, had normal liver function tests, and were able to tolerate a regular diet. Follow-up visits were scheduled at one week, one month, and three months postoperatively to assess for complications and recovery.

Statistical Analysis: Data were analyzed using SPSS version 25.0 (IBM Corp., Armonk, NY, USA). Continuous variables were expressed as mean ± standard deviation (SD), and categorical variables were presented as frequencies and percentages. The association between patient characteristics and outcomes was assessed using chi-square tests and t-tests, with a p-value of <0.05 considered statistically significant.

Results

A total of 40 patients underwent laparoscopic completion cholecystectomy (LCC) during the study period from January 2024 to May 2024 at Netaji Subhash Medical College, Bihta, Patna. The demographic and clinical characteristics of the patients are summarized in Table 1.

Table 1: Demographic and Clinical Characteristics of Patients

Characteristic	Value
Number of patients	40
Age (years)	57.5 ± 4.5
Gender	25 males, 15 females
Indication for LCC	Residual gallbladder stones (70%) Chronic cholecystitis (30%)
Preoperative imaging	Ultrasound (100%) MRCP (50%)

Intraoperative Findings and Surgical Outcomes: The intraoperative findings and surgical outcomes are presented in Table 2. The mean operative time was 90 minutes, with a range of 75 to 120 minutes. Adhesion-related difficulties were encountered in 40% of the cases. Intraoperative cholangiography was performed in 30% of the cases to confirm the absence of bile duct stones.

Table 2: Intraoperative Findings and Surgical Outcomes

Parameter	Value
Operative time (minutes)	90 ± 15
Adhesion-related difficulties	16 (40%)
Intraoperative cholangiography	12 (30%)
Intraoperative complications	4 (10%)
Conversion to open surgery	2 (5%)

Postoperative Complications and Hospital Stay: Postoperative complications were observed in 15% of the patients, with bile leakage being the most common complication. The mean hospital stay was 4 days, with a range of 3 to 7 days. No mortality was reported in this series. The details of postoperative complications and hospital stay are shown in Table 3.

Table 3: Postoperative Complications and Hospital Stay

Complication	Number of Cases (Percentage)
Wound infection	2 (5%)
Bile leakage	4 (10%)
Total postoperative complications	6 (15%)
Hospital stay (days)	4 ± 1

In summary, the study demonstrated that LCC is a feasible and safe procedure with acceptable morbidity rates. Proper patient selection and surgical expertise are crucial for minimizing complications and ensuring favorable outcomes.

Discussion

The present study evaluated the outcomes and complications of laparoscopic completion cholecystectomy (LCC) in 40 patients at Netaji Subhash Medical College, Bihta, Patna. Our findings suggest that LCC is a feasible and safe procedure with acceptable morbidity rates, consistent with the existing literature [1,2].

One of the primary challenges in LCC is the presence of dense adhesions and altered anatomy due to the previous partial cholecystectomy. In our study, adhesion-related difficulties were encountered in 40% of the cases, highlighting the technical challenges associated with this procedure. This finding aligns with previous reports indicating that adhesions are a significant factor complicating LCC [3,4].

The mean operative time in our study was 90 minutes, which is comparable to other studies reporting operative times ranging from 80 to 120 minutes [5]. The intraoperative complication rate was 10%, with bile duct injury being the most significant complication.

This is slightly higher than the complication rates reported in some studies but within the acceptable range for complex laparoscopic procedures [6,7]. The conversion to open surgery rate was 5%, which is consistent with other studies that have reported conversion rates between 4% and 10% [8].

Postoperative complications occurred in 15% of the patients, with bile leakage being the most common. The rate of postoperative complications in our study is in line with previous findings, where complication rates have ranged from 10% to 20% [9,10]. The mean hospital stay was 4 days, reflecting a relatively quick recovery period typical of laparoscopic procedures [11].

Our study underscores the importance of proper patient selection and surgical expertise in minimizing complications and ensuring favorable outcomes. Patients with significant comorbidities or those unsuitable for laparoscopic surgery were excluded, which may have contributed to the relatively low complication rates observed. Additionally, the experience of the surgical team plays a critical role in the success of LCC [12].

Conclusion

In conclusion, LCC is a viable option for patients with residual gallbladder disease following partial cholecystectomy. While the procedure is technically challenging, it can be performed safely with acceptable morbidity rates in a well-selected patient population. Further studies with larger sample sizes and longer follow-up periods are warranted to validate these findings and refine the surgical techniques for LCC.

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