

Laparoscopic Cholecystectomy in Chronic Calculus Cholecystitis

Sapkota P, Oli YB and Pokharel N

Department of Surgery, Lumbini Medical College and Teaching Hospital, Palpa, Nepal

Corresponding author: Dr. Prakash Sapkota, Dept. of Surgery, LMCTH, Palpa, Nepal; e-mail: sheetal_sapkota@yahoo.com

ABSTRACT

Introduction: Laparoscopic cholecystectomy has clearly become the choice over open cholecystectomy in the treatment of hepatobiliary disease since its introduction by Mouret in 1987. This study evaluates a series of patients with chronic calculus cholecystitis who were treated with laparoscopic and open cholecystectomy and assesses the outcomes of both techniques.

Objective: To evaluate the efficacy of laparoscopic vs open cholecystectomy in chronic calculus cholecystitis and establish the out-comes of this treatment modality at Lumbini Medical College and Teaching Hospital.

Methods: This was a retrospective analysis over a one-year period (January 1, 2012 to December 31, 2012), per-formed by single surgeon at Lumbini Medical College and Teaching Hospital located midwest of Nepal. 166 patients underwent surgical treatment for chronic calculus cholecystitis. Patients included were only chronic calculus cholecystitis proven histopathologically and the rest were excluded. Data was collected which included patients demographics, medical history, presentation, complications, conversion rates from laparoscopic. cholecystectomy to open cholecystectomy, operative and postoperative time. **Results:** Patients treated with laparoscopic cholecystectomy for chronic calculus cholecystitis had shorter operating times and length of stay compared to patients treated with open cholecystectomy for chronic calculus cholecystitis. Conversion rates were 3.54% in chronic calculus cholecystitis during the study period. Complications were also lower in patients who underwent laparoscopic cholecystectomy versus open cholecystectomy for cholelithiasis.

Conclusions: Laparoscopic cholecystectomy appears to be a reliable, safe, and cost-effective treatment modality for chronic calculus cholecystitis.

Keywords: Chronic calculus cholecystitis, conversion, Laparoscopic cholecystectomy.

INTRODUCTION

Laparoscopic cholecystectomy [LC] has clearly become the choice over open cholecystectomy [OC] in the treatment of hepatobiliary disease since the introduction of laparoscopic cholecystectomy by Mouret in 1987¹. Surgeons remain concerned about the safety and efficacy of LC due to obscured anatomy and chronic inflammation associated with chronic calculus cholecystitis [CCC]. Several studies have been published describing varying results.²⁻⁴ This study evaluates a series of patients with CCC who were treated with LC and OC and assesses the outcomes of both techniques.

MATERIALS AND METHODS

We report a retrospective analysis of 166 histopathologically proven CCC from 1st January 2012 to 31st of December 2012 conducted at Lumbini Medical College and Teaching Hospital located at Midwest of Nepal. We divided the patients based on their diagnosis and treatment modality into two groups: CCC treated by LC and OC. These groups were compared on the basis of mean age, male/female ratio, duration of illness, operative time, length of hospital stay, conversion rates and comparison of LC versus OC.

RESULTS

Total of 166 cases were operated among which 141[84.94%] were female and 25[15.06%] were male; as expected, there were more female patients with gallbladder disease overall.

Table-1: Distribution of Gender on the basis of Month:

Month	Cases	Male	Female
January	17	1	16
February	17	3	14
March	19	3	16
April	12	2	10
May	13	1	12
June	7	2	5
July	12	3	9
August	5 [Minimum]	1	4
September	12	3	9
October	10	0	10
November	19	3	16
December	23 [Maximum]	3	20
Total	166	25[15.06%]	141[84.94%]

Maximum 23 cases were operated in the month of December and minimum 5 cases in the month of August. Mean age for LC was 39.67 and for OC was

Table-2. Comparison of OC and LC

Procedure	Cases	M:F Ratio	Mean Age [Years]	Mean OR time [min]	Mean LOS[days]	Conversion[%]
LC	141[84.94%]	0.084:1	39.67	65.21	2.34	5[3.54%]
OC	25[15.06%]	1.27:1	43.48	131.33	6.80	N/A

43.4. The proportion of males undergoing OC was higher (M:F=1.27:1) as compared to those undergoing LC (M:F=1.27:1). The decision to undergo LC or OC was based on patient preference of the procedure. Among 166 CCC cases, 141[84.94%] had chosen LC, while 25[15.06%] cases preferred to undergo OC. Out of 141 cases, 136 cases successfully underwent LC, while 5 cases were converted to OC. Operating Time [OT] were 65.2 minutes in LC and 131.3 minutes in OC. LC had a shorter OR time compared to OC. The mean length of stay [LOS] was 2.34 days for LC and 6.80 days for OC. The length of stay was significantly shorter for LC compared to OC.

show that males tend to become symptomatic later in life and have associated with other comorbidities; hence the requirement of an open procedure. Most of the procedures were performed during December. We hypothesize that this may be due to the belief that there is lower incidence of wound infection in winter. 25 patients had chosen to undergo OC primarily probably due to belief that all of the Gall stones were not removed by LC, other people in society had undergone OC and doing well.

Five patients (3.54%) required conversion. The most frequent reasons for conversion was technical difficulty encountered because of the chronic inflammatory process, similar to what has been described by other authors⁸. The conversion rate of LC to OC was lower for the CCC group compared to other studies⁹.

The LOS was significantly shorter for LC when compared to OC. These numbers are in line with national and international standards for this procedure.⁷ We believe that this reduction in LOS, along with LC as the procedure of choice for gallbladder disease, influences the economic component of treatment of this disease. This minimally invasive procedure is easier on the patients, and they recover faster. Overall, published complications and mortality rates are lower for LC than OC. However, in our study, iatrogenic injuries to the bile duct and the liver were higher in the LC group than the OC group and post operative wound infection rate is higher in OC group than LC group.

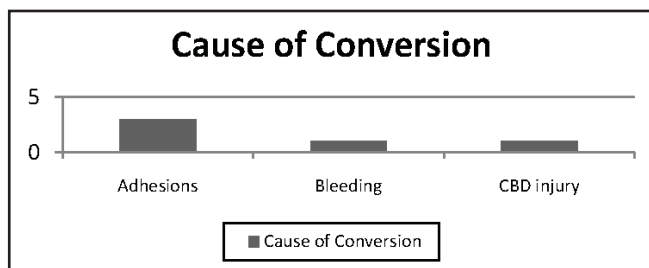


Fig. 1: Graph depicting the most common reasons of conversion from LC to OC

The overall most frequent intra operative complications of LC in CCC patients was dense adhesion in three patients which obscured the anatomy, bleeding from the liver bed in one patient and one patient with common bile duct injury required OC with T-tube drainage intra operatively, which was similar to other studies.⁵ Post operatively there were 3 patients with wound infection in OC cases though there were no mortality, respiratory, gastrointestinal, urinary, and cardiovascular complications for LC and OC which was not comparable to other series.⁶

CONCLUSIONS

LC for CCC appears to be a reliable, safe and cost-effective procedure. We believe that with a cautionary approach to CCC, LC will provide better outcomes in the management of this condition.

REFERENCES

1. Mouret P. From the first laparoscopic cholecystectomy to the frontier of laparoscopic surgery: The future perspective. *Dig Surg* 1991; 8: 124-5.
2. Schafer M, Krakenbuhl L, Farhadi J, Buckler MW. Cholecystitis-Laparoscopy or Laparotomy? *Ther Umschau* 1998; 55(2):110-5.
3. Kiviluoto T, Siren J, Luukkonen P, Kivilaasko E. Randomized trial of laparoscopic vs open cholecystectomy for acute and gangrenous cholecystitis. *Lancet*. 1998; 351(9099): 321-5.
4. Turfah F, Nazzal M, Ali A, Silva Y. Laparoscopic cholecystectomy: analysis of the complications at a community hospital. *Surg Laparosc Endosc*. 1994; 4(4): 264-7.

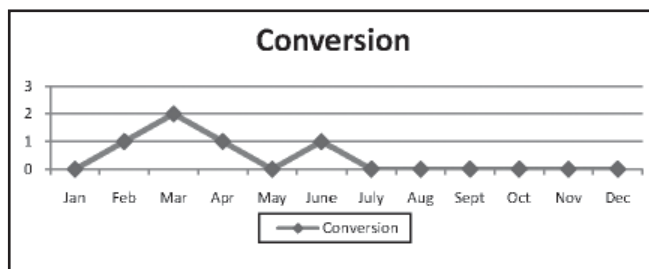


Fig 2: Graph depicting Conversion of Cases over one year period:

DISCUSSION

Over the past decade, LC has become the predominant procedure in the treatment of hepatobiliary disease. We noted that the male to female ratio was higher in the OC group. These results concur with previous series,⁷ which

5. Targarona EM, Marco C, Balague C, et al. How, when, and why bile duct injury occurs. *Surg Endosc* 1998; 12(4): 322-6.
6. Shea JA, Healey MJ, Berlin JA *et al.* Mortality and complications associated with laparoscopic cholecystectomy. A meta-analysis. *Ann Surg* 2006; 30: 1698-704.
7. Wherry DC, Marohn MR, Malanoski MP, Hetz SP, Rich NM. An external audit of laparoscopic cholecystectomy in the steady state performed in medical treatment facilities of the Department of Defense. *Ann Surg* 1996; 224(2): 145.
8. Bingener-Casey J, Richards ML, Strodel WE, Schwesinger WH, Sirinek KR *et al.* Reasons for conversion from laproscopic to open cholecystectomy: a 10 year review. *J Gastrintest Surg* 2002; 6: 800-5.
9. Ibrahim S, Hean TK, Ho LS, Ravintharan T, Chye TN, Chee CH, Risk factors for conversion to open surgery in patients undergoing laparoscopic cholecystectomy. *World J Surg* 2006; 30: 1698-704.