

# Laparoscopic Cholecystectomy in a Private Hospital

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## Abstract

**Introduction:** Laparoscopic Cholecystectomy is the gold standard for benign Gall Bladder disease. Laparoscopic Cholecystectomy has rapidly gained popularity and it is one of the commonly performed operations in Nepal. The current study was carried out in the Department of General Surgery, Hospital for Advanced Medicine and Surgery (HAMS), Kathmandu, Nepal to evaluate the result of Laparoscopic Cholecystectomy in our set up.

**Methods:** A retrospective review of medical records was conducted on all study patients. Demographic data, indication for surgery, rate of conversion to open cholecystectomy, morbidity and mortality rates were noted. The data of all patients who underwent laparoscopic cholecystectomy from April, 2012 to April, 2014 was entered in standardized proforma and analysed on SPSS 20.

**Results:** A total of 130 Cholecystectomy over a period of 2 years, Male :Female ratio 1:1.9. Mean Age group 41-50 years. Out of all these patients, 76% patients presented with symptoms while 24% were asymptomatic. Overall conversion rate was 9.2%. The average hospital stay was 2 days. There were no complications and no mortality in this period of study.

**Conclusion:** Our finding demonstrates that there was no difference in the outcome whether the patient was given the antibiotics post-operatively or not. Even the diabetics can be treated with prophylactic doses of antibiotics. Three port technique was safe. Complications can be avoided even without selecting cases if two surgeons perform together and early decision of conversion to open cholecystectomy is made.

**Key Words:** Cholelithiasis, Laparoscopic Cholecystectomy, Private Hospital, Three port technique.

## Introduction

Laparoscopic cholecystectomy, since its introduction in the late 1850s has grown quickly in its acceptance<sup>1</sup> and has revolutionized the world in the surgical management of benign gall bladder disease. It is the gold standard for the benign gall bladder diseases<sup>2,3,4</sup>. Looking at the benefits of minimal access procedures for gall stone disease, many surgeons got interested to learn this patient friendly surgical modality. Its superiority to the open surgery is accepted due to earlier return of bowel motility, less post-operative pain, better cosmetic results, shorter hospital stay and early return to daily activities<sup>5</sup>. Even in Nepal, Laparoscopic Cholecystectomy has rapidly gained popularity and is one of the commonly performed operations. The current study was carried out in the Department of Surgery, Hospital of Advanced Medicine and Surgery (HAMS), Kathmandu, Nepal.

## Methods

A retrospective review of medical records was conducted on all the study patients. Demographic data, indications of surgery, rate of conversion to open cholecystectomy, complication of laparoscopic cholecystectomy and mortality rates were noted. The data of all patients who underwent laparoscopic cholecystectomy from April, 2012 to April, 2014 were entered in standardized proforma and analysed on SPSS 20.

Pre-operative work up included a complete blood count, renal function test, liver function test, Chest X-ray, Serological test, USG abdomen and ECG in patients >50 years and/or with comorbidities. Any further investigation was done, if required, for fitness of patient for the operative procedure.

The operation was performed with three port technique by a surgical team of two expert surgeons with the experience in laparoscopic cholecystectomy for atleast 20 years each. A single dose of broad spectrum antibiotic prophylaxis was administered to all the patients at the time of induction of anesthesia. Ports were made. CO<sub>2</sub> was used for peritoneal cavity insufflation. Gall bladder was identified and retracted. Cystic artery and cystic duct were identified, clamped with the metallic clips and cut. Gall bladder was dissected and removed. Hemostasis maintained and wounds closed in layers. Post-operative intravenous antibiotics (3<sup>rd</sup> generation cephalosporin) was given in 68 patients (2 doses) and not given in 64 of them. Proper pain management was done

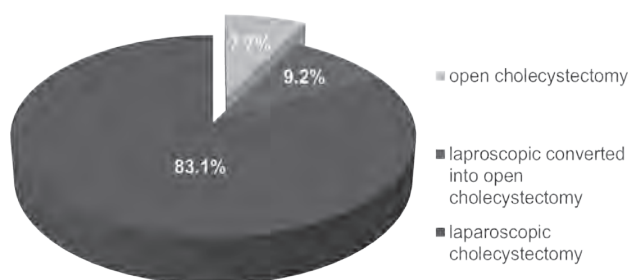
with intravenous analgesics. All the patients had oral liquid and were encouraged to proceed with food 6 hours after the operation provided there was no nausea and vomiting. Mobilization was done on the first post-operative day.

### Result

Out of 130 patients, who underwent laparoscopic surgery over a period of 2 years, a planned open cholecystectomy was done for 7.7% patients. A laparoscopic approach was originally attempted in 120 patients and completed in 109 patients (Figure 1). Overall conversion rate was 9.2% (Table 1). The most common cause being dense adhesion (Table 2).

**Table 1 Comparison of Conversion Rate with Other Literatures**

| Hospital   | Year      | No of patients | %    |
|--|-----------|----------------|------|
| Gandaki Medical College, Pokhara                                 | 2009-2011 | 397            | 4.03 |
| College of Medical Sciences, Bharatpur                           | 2011      | 110            | 7.2  |
| B.P.Koirala Institute of Health Science, Dharan                  | 2010      | 346            | 2.9  |
| Omdurman Teaching Hospital, Sudan                                | 2006-2007 | 114            | 7.9  |
| Green Ville Hospital, South Carolina                             | 2008-2010 | 341            | 2.6  |
| Eastern Virginia Medical School, Virginia                        | 2008-2009 | 346            | 11.9 |
| SKIMS Soura, Kashmir   | 1996-2004 | 800            | 7.5  |
| VardhmanMahavir Medical College & Safdarjung Hospital, New Delhi | 2011-2012 | 200            | 5    |
| Hospital for Advanced Medicine and Surgery                       | 2012-2014 | 130            | 9.2  |



**Figure 1 Conversion Rate**

**Table 2 Causes of Conversion**

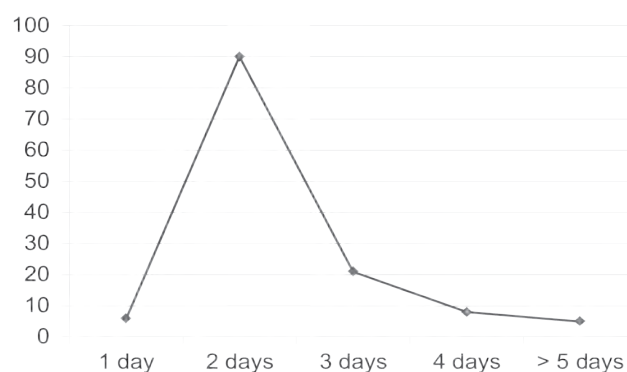
|                             |
|-----------------------------|
| Dense adhesion              |
| Difficult anatomy           |
| Thickened gall bladder wall |
| Mucocele                    |
| Contracted gall bladder     |

There were 65% female and 35% male in the study group giving rise to female to male ratio of 1.9:1 (Table 3).

**Table 3 Female:male ratio in different centers**

| Hospitals   | Year      | No. of Patients | Female : Male ratio |
|---|-----------|-----------------|---------------------|
| Government Medical College, India                                 | 2008-2012 | 100             | 2:1                 |
| Gandaki Medical College, Nepal                                    | 2009-2011 | 397             | 5.6:1               |
| Kathmandu Medical College, Nepal                                  | 2009-2010 | 35              | 7.3:1               |
| College of Medical Science, Nepal                                 | 2008-2009 | 110             | 3.5:1               |
| B.P. Koirala Institute of Health Science, Nepal                   | 2010      | 346             | 4:1                 |
| Ghulam Muhammad Mahar Medical College Teaching Hospital, Pakistan | 2004-2010 | 1110            | 6:1.4               |
| Hospital for Advanced Medicine and Surgery, Nepal                 | 2012-2014 | 130             | 1.9:1               |

The age ranged from 7-78 years, the mean age group being 41-50 years. The weight ranged from 34-98 kgs; mean weight being 64kgs. Out of all these patients, 76% presented with symptoms while 24% were asymptomatic. The average hospital stay was 2 days (Figure 2). The patients with and without use of post-operative prophylactic antibiotics showed no difference in the outcome. Even the diabetics with only prophylactic antibiotic had no infection post-operatively (Table 4). There were no complications and mortality in this study period.

**Figure 2 Duration of hospital stay****Table 4 Post-operative management**

|                               | No. of Patients | Diabetic patients | Infection |
|-------------------------------|-----------------|-------------------|-----------|
| No post-operative antibiotics | 68              | -                 | No        |
| 2 doses of antibiotics        | 62              | 8                 | No        |

## Discussion

Laparoscopic cholecystectomy has rejuvenated general surgery and in a very short time has become the gold standard for gall bladder disease. Even with definite advantages compared to open cholecystectomy, it carries its own risk. The usual notion of the general people is that private hospitals select cases and use lot of antibiotics for the better result and the patients are admitted for longer period of time for financial reasons. But our study has shown that even without selecting cases and with minimal use of antibiotic the outcome was good with no complication and mortality and that the patients can be discharged early after laparoscopic cholecystectomy.

In our study, 10 patients were planned open out of which 2 patients underwent open due to concurrent operation for ovarian cyst and right partial nephrectomy and the rest due to suspected malignancy. We used antibiotics in some patients and did not use in others after the laparoscopic surgery. There was no significant difference in the outcome

of the patients in both the groups and even the diabetics were managed with prophylactic doses of antibiotics after the surgery (Table 4).

Earlier laparoscopy cholecystectomy was usually reserved for patients with uncomplicated cholelithiasis<sup>5,6</sup>. However, with the increase in expertise<sup>6</sup>, difficult gall bladder are subsequently dealt with laparoscopically. Laparoscopic cholecystectomy has proved to be effective in elective as well as in emergency conditions, however conversion to open surgery is inevitable in some cases. The decision to convert should be considered as a sign of surgical maturity than of failure. Review of national and international data shows a conversion rate of 2.6% to 11.9% in various studies (Table 1). Our study concluded the conversion rate of 9.2% which is comparable to other literature. Out of the total conversions to open cholecystectomy, 81% were men. Men are supposed to be one of the criteria of difficult gall bladder surgery<sup>1,4,8,12,13</sup>.

The reason for conversion were dense adhesion, difficult anatomy, single large stone, multiple large and small stones, thickened wall, mucocoele, empyema and contracted gall bladder. The other reasons reported in the literatures are hemorrhage in Calot's triangle, slipped ligature and clips, partial transection of CBD, injury to the other organs and technical failures which were not encountered in our study group<sup>3,4,12</sup>. The surgeons should keep a low threshold for conversion to open surgery but it should be taken as a step in the interest of the patient rather than being looked upon as an insult to the surgeon<sup>6</sup>. Therefore, all the patients are explained about possibility of conversion to open technique at the time of taking consent for laparoscopic cholecystectomy.

In our study, 65% of the patients were female. Now-a-days, males with gall bladder problems are seen quite commonly in our hospital. So, the scenario of our hospital no longer favors the dictum of **"Fair, Fatty Ladies of Forty"** (Table 3). These days there is no age or gender bar in cholelithiasis.

Laparoscopic cholecystectomy is done for symptomatic patients<sup>1,4</sup>. But our record shows that out of total number of patients undergoing cholecystectomy laparoscopically 24% were asymptomatic. The reason behind it was elderly patients with morbidity, those from remote areas who have no access to health centers at the time of emergency, travellers who were scared of getting acute attack in the middle of their journey, patients going abroad wanted the operation to be performed due to the fear of getting into trouble in the foreign land, when they have no health insurance.

Laparoscopic surgery has been practiced as a day-care surgery in most of the countries<sup>5</sup> and in same centers of our country as well<sup>10</sup>. We have been focusing to apply the same in our center also but we are still unable to do so due to some psychosocial<sup>10</sup> and cultural reasons. Our patients themselves ask to prolong their hospital stay so that they get proper rest, medical care and attention. They fear of pain after getting discharged. Especially the females want more hospital stay because in our society its female who have to take care of the family and the household matters. If they get discharged earlier, they have to return to their chores sooner. In hospital, they get pampered by the family members. Some, due to the need of long travel to get back to their hometown and lack of proper health management there, ask for few more days in hospital.

The three port technique was adopted in our hospital since both the surgeons prefer it and has been found to be safe<sup>14,15</sup> with no complication.

Some surgeons prefer doing laparoscopic cholecystectomy alone with a non-surgical assistant to hold the camera port. In our hospital, two surgeons assist each other in the operation. Cholecystectomy, previously open but now a days laparoscopic is the second operation given to the residents in their career after they master their skills in appendectomy. Although thought to be simple among the other major operations<sup>9</sup>, the consequence of even a small mistake might be hazardous lifelong for the patient and very difficult to manage. No complications were encountered in our hospital in this study period maybe due to two surgeons working together.

## Limitation

The study suffers from certain limitation. Since, it was performed in a retrospective fashion, this method naturally fails to be as accurate as the prospective data collection.

## Conclusion

Our finding demonstrates that there was no difference in the outcome whether the patient was given the antibiotics post-operatively. Even the patients with diabetics can be treated with prophylactic doses of antibiotics. Three port technique was safe. Complications can be avoided even without selecting cases if two surgeons perform together and early decision of conversion to open cholecystectomy is made.

**Conflict of interest:** None declared.

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