

Laparoscopic Cholecystectomy Outcome: Our Experience

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ABSTRACT

Aim: To determine the complications of laparoscopic cholecystectomy (LC) and its causes at our ward during the last year.

Study design: Prospective study

Duration of study: 1st January, 2013 to 31st December, 2013.

Methods: Data of all patients undergoing laparoscopic cholecystectomy during the study period and fulfilling the selection criteria was collected and analyzed.

Results: A total of 228 patients underwent laparoscopic cholecystectomy with an overwhelming majority of females. The overall complication rate was 6.14% (14/228). The complications included bleeding (2/228, 0.8%) from cystic artery and gall bladder bed, port site infection (10/228, 4.38%) and bile duct injury (2/228, 0.8%) The common causes of these complications were accidental injury to cystic artery, gross spillage of infected bile and erroneous clipping of common bile duct.

Conclusions: Port site infections and Bleeding were the commonest complications followed by common bile duct injury. The commonest cause of bleeding was cystic artery injury whereas the commonest cause of port site infection was gross spillage of infected bile.

Keywords: Laparoscopic cholecystectomy, Gall stones, Complications.

INTRODUCTION

Gallstones are a significant health problem all over the world. The incidence of gallstone related disease is 10 -15 %¹. Prof Dr Med Erich Mühe of Böblingen, Germany, performed the first laparoscopic cholecystectomy on September 12, 1985.² Ever since the first laparoscopic cholecystectomy was performed it has been gained increasing acceptance and has now been accepted as the gold standard treatment for gallstone disease. A number of studies have now documented the efficacy and safety of this procedure. It also has the advantage of reduced hospital stay, quick recovery, less intra-abdominal adhesion and improved cosmetic outcome^{3,4}. However, the benefits are directly related to the training and experience of the surgeon. The procedure requires general anesthesia and in addition to the complications associated with open cholecystectomy it carries addition risk of complications such as vascular or visceral injuries and CBD injuries. The overall frequency of complications is less than 5 %⁷.

The main aim of this study was to determine the complications of LC and their causes at our ward.

METHODOLOGY

All patients undergoing LC from 1st January, 2014 to 31st December, 2014 were included in this study.

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Data recorded included demographic information, past medical history, indication for operation and preoperative and post-operative complications. Routine baseline were carried out as well as LFTs and USG abdomen and hepatitis status. All patients were evaluated pre-operatively by consultant anesthetist. Informed consent was taken from all patients. All operations were performed by consultant surgeons.

Under general anesthesia and reverse trendelenburg, pneumo-peritoneum was created by means of Veress technique. After dissection of Calot's Triangle cystic duct and artery were skeletonized and clamped. After cutting them gall bladder was dissected from the liver bed. Drain placed in sub hepatic case in all patients. After completion, gall bladder was removed from umbilical incision. Pneumo-peritoneum was abolished and wound closed with vicryl 2/0 and prolene 3/0. Specimen was sent for histopathology. Post-operative patients were given three dose of antibiotics (first generation cephalosporin) and pain killers (Intra-venous Nalbuphine and Ketorolac). Within 12 hours of the procedure patients were allowed oral sips and mobilized. Drain removed after 24 hours if no significant addition (<50ML). Patients were discharged the next day. Follow-up was done in OPD. Patients were called for follow-up after 1 week and 3 weeks. Stitches were removed on first follow-up. All intra-operative and post-operative complications were noted.

RESULTS

A total of 228 patients were included in this study. There were 16 males (7.01%) and 202 females (88.5%). Mean age was about 37 years. The overall complication rate was 6.14% (14/228). The complications included port site infection (10/228, 4.38%), bleeding (2/228, 0.8%) from cystic artery and gall bladder bed, and bile duct injury (2/228, 0.8%). The common causes of these complications were accidental injury to cystic artery, gross spillage of infected bile and erroneous clipping of common bile duct.

10 patients (4.38%) developed port site infection. Out of these 9 patients had umbilical port infection and 1 epigastric port infection. Although some patients had spillage of bile, this is believed not to be the cause of infection since the infection failed to resolve completely with antibiotics and dressings. All the cases happened during the first half of the year. We performed wide local excision and achieved health margins in all cases. The resected tissue was sent for biopsy. Histopathology report showed giant cell granulomas. Patients were started on oral anti-tuberculosis therapy as well as intra muscular streptomycin after which the infection resolved. As a further precaution after this outbreak all the previously used ports were discarded. All patients undergoing laparoscopic procedures were given intra muscular injection of 1 gram Streptomycin at the time of induction in addition to the routine anti biotic. Furthermore we also added antibiotic (500mg of gentamicin) to the local which we used for injection before the incisions were made for ports. As a result of these measures there were no further cases of port site infections.

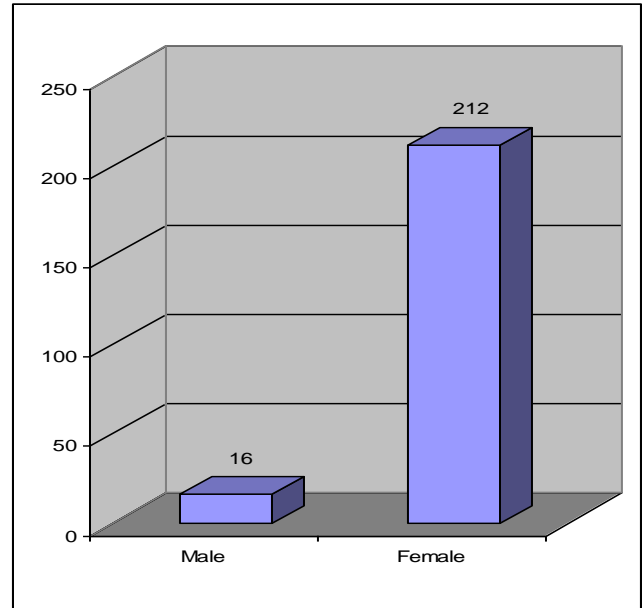
Bleeding (causing conversion to open) was seen in 2 patients (0.8%). It was due to accidental injury to cystic artery in one patient and bleeding from the liver bed in the other patient. In both cases bleeding was controlled and patient had an uneventful recovery.

There was accidental injury to CBD in two patients (0.5%). In one case there was injury to the CBD with electro-cautery and in the other case there was accidental partial clipping of CBD. First injury was recognized when patient developed bile drainage in his drain and the second presented later with episode of obstructive jaundice. Both patients underwent open exploration and T-Tube placement. Following this they had an uneventful recovery. T-tube was removed after normal cholangiogram obtained at 10th post-operative day.

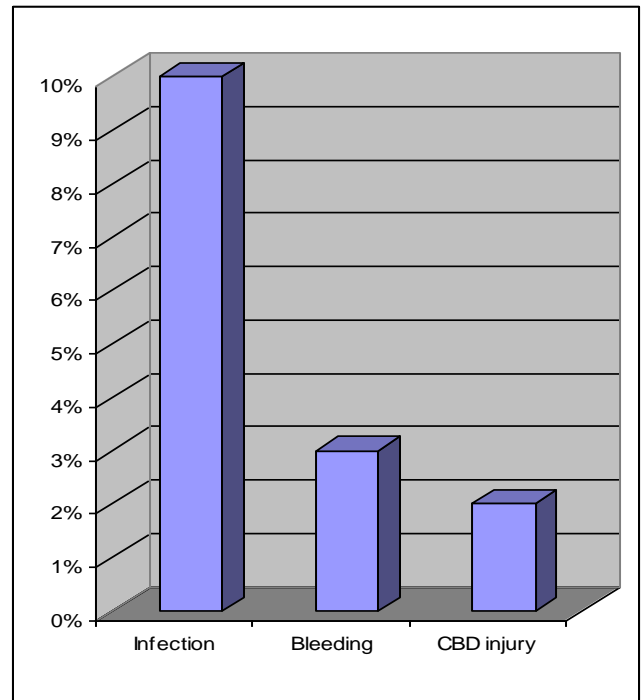
Table

Complication	n
Port Site Infection	10(4.38%)
Bleeding	2(0.8%)
CBD Injury	2(0.8%)

Gender distribution



Percentage of complications



DISCUSSION

Complication from LC can be categorized in two groups. Those occurring as a result of laparoscopic intervention and those occurring as a result of operative intervention. Rate of complication has decreased as the experience and training of surgeons has improved.

Wound infection rate of 0.3% - 1% has been documented at the site of umbilical cannulation through which the gall bladder is extracted.⁸ In this study 10 patients (4.38%) developed post-operative infection at the site of umbilical cannulation.

Breakdown in sterilization is believed to be responsible for this. This increased rate reflects the steps taken to keep the costs down rather than the use of single use trocars may also be contributing to the post-operative infection rate. Steps taken for the management of such patients have been elaborated. All cases were reported to the hospital infection control committee.

Injury to CBD is related directly to experience and with increasing surgical experience a decrease in CBD has been reported.⁹ In this study CBD injury was observed in two patients (0.5%). One injury was due to inadvertent clipping of CBD and other was due to thermal damage from cautery during dissection. Both of these were noted post-operatively and both patients underwent open exploration. Post-operative both remained stable and had an un-eventful recovery.

Visceral injury may occur during blind Veress Needle or trocar insertion. It may also occur in patients having adhesion and is usually recognized operatively. Incidence of 0-5% is reported in literature however there were no such complications during our study. This due to extreme care during insertion of Veress needle and first trocar and decision to establish pneumo-peritoneum by open method in patients having been operated previously or in whom closed technique was difficult or unsuccessful.

Bleeding is a commonly reported complication and may occur from port site or liver or vascular structures during dissection. In our study there was bleeding in 2 patients (0.8%). One patients had bleeding from injury to cystic artery and one bleeding from liver bed during dissection. No major vascular injury occurred. A 3.18% bleeding complication has been reported in local literature whereas bleeding

complication of 0.11 % has been reported by Usal Et Al in a study of 2589 procedures.¹⁰

CONCLUSION

The overall complication rate was 6.14% (14/228). The complications included bleeding (2/228, 0.8%) from cystic artery and gall bladder bed, port site infection (10/228, 4.38%) and bile duct injury (2/228, 0.8%). There was no injury to the abdominal viscera.

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