ORIGINAL ARTICLE

Laparoscopic Cholecystectomy - Our Experience at Mayo Hospital, Lahore

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ABSTRACT

Objectives: To study the complications following Laparoscopic cholecystectomy.
Design: It was a retrospective analysis.
Materials and Method: The study was conducted in West Surgical Unit, Mayo Hospital, Lahore over a period of one year from 1st Nov 2007 to 30th Oct 2008, comprising of 118 patients.
Results: We had two cases with intra-operative bleeding (1.6%), There was one bile duct injury (0.8%), occurring in patients with abnormal cystic duct anatomy, damage to alimentary tract was none, and the number of conversions was 7(5.9%). Early Post operative complications: one patient had bleeding due to slippage of clip (0.8%), bile leakage in one patient (0.8%), No Port site bleeding, Late complications: Wound Infection 4(3.3%), shoulder pain in 9 (7.6%). none of the patient in the study had, port site hernia, deep venous thrombosis and pulmonary embolism. There was no mortality in this series.
Conclusion: Data obtained by this study suggests that laparoscopic cholecystectomy is safe and effective for the treatment of symptomatic gallstone disease.
Keywords: Laparoscopic cholecystectomy, cholelithiasis, complications.

INTRODUCTION

Gallbladder disease is a wide spread health problem. The incidence of gallbladder disease shows a significant amount of suffering and disability, although the mortality of the disorder is relatively limited. Risk factors include age, gender, race, parity, obesity and diabetes[1].

Gallstones and associated complications are the most common disorders of the biliary system. Nearly two third of the patients with gallstones are asymptomatic. Recurrent symptomatic gallstone disease in elderly patients managed non-operatively may have fatal outcome. Laparoscopic Cholecystectomy has become the approach of choice for gallbladder removal for the vast majority of patients[2]. It provides a quicker, comfortable recovery with rapid return to work by reducing the trauma of operative access. The wide spread use of diagnostic Ultrasonography has lead to increasing detection of clinically unsuspected gallstones. But this finding has promoted the surgeons to have liberal attitude towards the operative indications for Cholelithiasis, particularly after the advent of Laparoscopy.[5] Which involves assessing the safety of laparoscopic Cholecystectomy and alerting the surgeons to possible complications[3].

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Reports from specialized centers with wide experience in laparoscopic surgery are unlikely to represent what occurs in everyday practice. This study represents the true incidence of complications, conversion to open procedure and extend of post-operative stay in the hospital. Our complication rate compares favorably with those from other centers[4].

The aim of this study was to assess the complications that arouse during our experience with laparoscopic cholecystectomy.

MATERIALS AND METHOD

This was a retrospective study of laparoscopic cholecystectomy performed in West Surgical Unit, Mayo Hospital, Lahore. Over a period of one year from 1st November 2007 to 30th October 2008, comprising of 118 patients of either sex, average age was 43.3±12.5 years while male to female ratio 1:6.6, age ranged from 15 to 80 years. Data was collected on a standardized form by one of the authors and patients were seen within six weeks post-operatively in outpatient clinics. During this period one consultant with vast experience performed laparoscopic cholecystectomy.

Gallbladder disease was diagnosed on the basis of history, physical examination, laboratory testing and ultrasonic evaluation. The patients included in the study were also evaluated for co-morbid conditions to anticipate the problems likely to occur with them. Co-morbid conditions were cirrhosis, obesity, diabetes mellitus, hypertension and ischemic

heart disease. The indications for surgery included chronic calculus cholecystitis, acute calculus cholecystitis. Patients with obstructive jaundice were excluded from study pre-operatively. In each instance, laparoscopic procedure was explained to the patient pre-operatively, and informed consent was obtained; the patient was also told that, in the event of intra-operative difficulties, the procedure might be converted to an open cholecystectomy.

Pre-operative antibiotic coverage was provided with pre-medication by inj zinacef 1.5gm. The basic operative technique was standard pattern involving a four puncture in all cases. Diathermy of the gallbladder was performed with monopolar electrosurgical hook in all cases. In none of the cases scissors was used for dissection.

RESULTS

The operating time was calculated from skin incision, for introduction of Veress needle to end of skin closure of puncture wounds. An average of 91 minutes (range from 45 to 134 minutes) was required for each operation. In none of our patient hospital discharge occurred on the day of surgery. Only seven patients were discharged 24 hours after the procedure. The average duration of hospital stay was 3 days (2 to 14 days).

Table 1: operative and post operative data

	Range	Mean
Operation time(minutes)	45 -134 (minutes)	91 min
Hospital stay (days)	2-14(days)	3 days

Conversion to a standard open cholecystectomy was necessary in 7 cases (5.9%). Reasons for conversion to open technique were: acutely inflamed edematous thick-walled gallbladder was difficult to grasp in 3 cases, in 1 bleeding from cystic artery, in 3 patients, poor visualization of the operative field due to technical difficulties with our camera.

Table 2: Complications

Intra-operative complications	**n =**	%**age**
Damage to common bile duct	1	0.8
Bleeding	2	1.6
Damage to alimentary tract	0	0
Conversion to open cholecystectomy	7	5.9
Early post-operative complications		
Post Operative Bleeding	1	0.8
Prolonged bile leakage	1	0.8
Port site bleeding	0	0
Late complications		
Wound Infection	4	3.3
Shoulder pain	9	7. 6
Port site Hernia	0	0
Others like DVT, PE	0	0

DVT= Deep venous thrombosis. PE- Pulmonary Embolism

One common bile duct injury (0.8%) occurred in our series. It was not detected at the time of surgery. The patient had sub-hepatic redi-vac drain and there was continuous bile drainage. One patient had a clipped common bile duct secondary to abnormal cystic duct anatomy that was not recognized during the laparoscopic procedure and the patient continued to drain bile from the drain. After ERCP the patient had laparotomy and choledochojejunostomy on the 10th postoperative day.

Re-operation was necessary in one patient for post-operative bleeding, 12 hours following the procedure. The hemorrhage stemmed from cystic artery because of slipped clips. Postoperative bile leakage occurred in one patient (0.8%). This patient had, drain, placed at the time of surgery, it stopped spontaneously on the third post-operative day.

Sub-umbilical port site wound infection occurred in 4 (3.3%) patient, that was controlled with local dressings and antibiotics. None of the patient in the study had port site bleeding, Pulmonary Embolism (PE), Deep Venous Thrombosis (DVT) and port site hernia.

During the immediate postoperative period 9(7.6%)of our patients complained of shoulder pain. In most of the patients it was controlled with paracetamol but in some cases it had to be supplemented with non-steroidal anti-inflammatory agents. There was no death in our series of 118 laparoscopic cholecystectomies.

DISCUISSION

Although laparoscopic cholecystectomy has become very popular for the treatment of gallbladder stones, the procedure must be able to be performed reliably without increased morbidity and mortality. With the advancement in the field of surgery the abdominal surgical procedures have become safer with a lower rate of post-operative complications and simplified post-operative care[5]. Injury to common bile duct causes the most serious morbidity associated with laparoscopic cholecystectomy. It has been seen recently that bile duct injuries occurred with both experienced and inexperienced surgeons [6,7,8,12,13].

Our incidence of bile duct injury (0.8%) during laparoscopic cholecystectomy is equivalent to many published series in the literature[5, 14, 15] .It has been seen in our study that bile duct injury was not detected during the procedure and there was a delay in the detection of such injury. It is therefore, necessary for good long-term results that the first repair be undertaken by an experienced biliary surgeon in a specialist hepato-biliary unit. It becomes all the more important as laparoscopic bile duct injury tends to be more severe than that which occurs during open cholecystectomy. Many surgeons

perform intra-operative cholangiography to facilitate exposure and prevent iatrogenic injury but we did not use it in any of our cases [9, 12].

One of our cases that had post-operative bile leakage had sub-hepatic drains placed at the time of the procedure and it resolved with no complications. Our study shows that placement of sub-hepatic drain is a safe technique in cases with difficult dissection[12] Most of these minor bile leaks will stop if there is no distal obstruction as majority of them mentioned in the literature are either due to failure of clips used to secure the cystic duct or from accessory Ducts of Luschka[5,8,19].

No case of pulmonary embolism occurred in our series of 118 cases who received prophylactic heparin. We found that prophylactic heparin is useful in the prevention of pulmonary embolism especially in the older age group and in those cases where induction of pneumoperitoneum may be prolonged by difficult dissection as in cases of acute cholecystitis and multiple adhesions[17, 18].

Operation time was more than 90min on average. The conversion rate of (5.9%) in our series, because 3 patients opened as due to difficult dissection on account of acute cholecystitis. One due to bleeding from cystic artery and in 3 patients' poor visualization of the operative field due to technical difficulties with our camera.

The average post-operative stay of our patients (3 days) was longer than reported in most series. This was partly due to social reasons and as most patients believed in staying longer in the hospital after surgery[7,9,12]. Wound infection was 3.3%, which is comparable. It was treated with local dressings and antibiotics. 9(7.6%) of the patients had shoulder pain probably due to irritation and stretching of the diaphragm that usually respond to simple analgesics and some times require the NSAIDS. The procedural complications of laparoscopic cholecystectomy are the same as reported elsewhere. Mortality and morbidity continue to occur in relation to procedure[16].

CONCLUSIONS

Laparoscopic cholecystectomy that has been regarded as a ‘’gold standard” treatment for symptomatic gallstone disease and now accepted and strongly sought after, by our patients. Our series has indicated overwhelming patient satisfaction with the procedure and its clinical outcomes. However, a continuous effort is needed to improve the quality of service delivered to our patients. The increased incidence of bile duct injury than after conventional cholecystectomy remains a source of anxiety and needs to be reduced. Intra-operative injuries like intra-peritoneal bleeding, bile duct injuries, bile leaks and visceral injuries need to be recognized and managed early. We must realize that conversion to an open procedure is not a failure but may avoid unnecessary complications. The length of hospital stay needs to be reduced when appropriate. Learning of safe technique, patience, careful dissection while lifting the gallbladder from its bed and avoiding injurious use of diathermy and cool temperament of the surgeon is important for the procedure to be performed with lower morbidity. The results of this study have shown that laparoscopic cholecystectomy is quite safe and effective for the treatment of symptomatic gallstone disease. It can be introduced safely in major teaching hospitals in our country.

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