ORIGINAL ARTICLE

LAPAROSCOPIC CHOLECYSTECTOMY: AN AUDIT OF 500 PATIENTS

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Background: The Gold standard treatment for symptomatic gallstone disease is laparoscopic cholecystectomy (LC) since 1990. LC can be performed safely as a day case procedure. The objective of this study was to evaluate the results of laparoscopic cholecystectomy in symptomatic gall stones disease in terms of length of hospital stay, complications, morbidity and mortality. **Methods:** This retrospective descriptive study was carried out in Department of General & Laparoscopic Surgery, AK CMH, Muzaffarabad. Notes of all patients who underwent laparoscopic cholecystectomy in the department over a 26 month period were reviewed from department register. Demographics as well as details of cases, conversion to open operation and complications of surgery and anaesthesia were reviewed from clinical notes and departmental register and noted on a designed Performa. Data were analysed using SPSS-18 and results compared with international studies. **Results:** Out of 500 patients, 443 (88.6%) were females and 57 (11.4%) were males. The mean age of the patients was 42.47±11.43 years. Mean operative time was 40.09±11.16 minutes. Seven (1.4%) patients developed port site wound infection. Sixteen (3.2%) cases were converted to open surgery in face of obscured anatomy of Calot's triangle. Two (0.4%) cases has cystic duct stoma leak secondary to missed Common duct stones and were dealt with ERCP and stone extraction. There was no case of bile duct injury, major haemorrhage or bowel injury. There was no mortality associated with laparoscopic cholecystectomy in our series. **Conclusion:** Laparoscopic cholecystectomy is a safe and effective management of gall stone disease. Better training, careful case selection, meticulous technique and high standard equipment are of paramount importance for ensuring good results in laparoscopic cholecystectomy.

Keywords: Laparoscopic cholecystectomy, complications, cystic duct leak, bile duct injury, gall stone

INTRODUCTION

Gall stone disease is one of the most common condition encountered in general surgical practice in adult population.[1] The Gold standard treatment for symptomatic gallstone disease is laparoscopic cholecystectomy (LC) since 1990.[2,3] LC is one of most common operation performed world wide.[4] The main advantages of LC is less postoperative pain, shorter hospital stays, a rapid return to work, less intra abdominal adhesion, a better cosmetic outcome and a significant decrease in perioperative septic complications.[2,5] LC can be performed safely as a day case procedure.[6] This study was performed to evaluate the efficacy of LC in context to its complications, morbidly and mortality.

PATIENTS AND METHODS

This descriptive retrospective study was carried out in department of General and Laparoscopic Surgery, H. H. Sheikh Khalifa Bin Zayed Innahayan Hospital/AK CMH Muzaffarabad. Operative and clinical notes and records of all patients who underwent LC over a 26 months period from Nov 2009 to Feb 2012 were reviewed. In all these patients LC was done using standard four ports technique and pneumoperitoneum was created by open Hassen's technique. All patients were followed-up fortnightly for first two months. We reviewed demographics such as age and gender, cases of conversion to open operation, intra-operative, postoperative complications, morbidity and mortality from records. Data were analysed using SPSS-18.

RESULTS

A total of 500 patients underwent LC during this study period out of them, 443 (88.6%) were women and 57 (11.4%) were men. The mean age of the patients was 42.47±11.43 years and the youngest patient was of 22 years. The indications of surgery were symptomatic cholelithiasis in 386 (77.2%), chronic cholecystitis 79 (15.8%), acute cholecystitis 29 (5.8%), mucocoele gall bladder 4 (0.8%), and in 2 gall bladder polyp (0.4%). As per American Society of Anaesthesia classification 166 (33.2%) patients were from ASA class I, 245 (49%) from ASA II and 89 (17.8%) patients were from ASA class III.

All patients were administered general anaesthesia. Mean operation time was 40.09±11.16 minutes. Out of 500 patients 18 (3.6%) cases were converted in to open surgery. The cause of conversion in almost all the cases was obscure anatomy and difficult dissection in Calot's triangle. Thirty (6%) patients were discharged on the day of surgery, 422 (84.4%) on the first postoperative day, 46

(9.2%) on second, and 2 patients (0.4%) were discharged on the seventh postoperative day. Fourteen (2.8%) patients develop superficial surgical site infection. There were 2 (0.4%) cases of bile leak from the cystic duct stump. Both were secondary to CBD stones that were missed during the initial screening tests and were treated satisfactorily postoperatively with ERCP and stone extraction without any serious sequel. There was no case of common bile duct injury, bowel injury or significant intra-operative haemorrhage necessitating conversion to open procedure. So far no patient has reported with postoperative deep abscess, port site hernia or postoperative bile duct stricture. Seven patients were diagnosed preoperatively as cases of choledocolithiasis on the bases of deranged liver functions/imaging studies and were treated with ERCP and stone clearance. These patients underwent standard LC in the following weeks. In spite of the fact that 89 (17.8%) cases were ASA III, only 3 (1%) patients were kept in ICU for two days because of postoperative hypertension but there was no other anaesthetic complication, mortality or morbidity. There was no mortality in our case series.

DISCUSSION

Gallstone disease is a global health problem. The incidence is 10–20% of the whole adult population on the planet, making laparoscopic cholecystectomy one of the most frequently performed operations in the world.[7] Most patients are asymptomatic and gallstones are generally detected with ultrasonography during the evaluation of unrelated medical conditions. Since the first LC performed by Prof. Dr. Med Erich Mühe of Böblingen, Germany on September 12, 1985, the procedure has become widespread, significantly changing the surgical management of gallbladder disease.[8] Over the past two decades, LC has become the gold standard for the surgical treatment of gallbladder disease. A shorter hospital stay (and thus, a more rapid return to normal activity and work), less postoperative pain, a faster recovery, better cosmesis, and lower cost are some of the advantages of LC over open surgery.[9,10]

In developed countries less than 20% of the total cholecystectomies are performed by open method but in Pakistan, open procedure is still common because of scarcity of skill and apparatus. Unfortunately, despite the numerous advantages of the method, it is estimated that the incidence of iatrogenic bile duct injury has increased from 0.1–0.2% to 0.4–0.6%.[11]

We started laparoscopic surgery in a newly established setup with an aim of providing a very high standard of care that should be comparable to international standards. Majority of the patients in our study were women which is consistent with national and international studies.[12] Our study showed a conversion rate of 3.2% which compares favourably with the rates reported in the literature. According to published studies in recent years, the conversion rates vary widely (range: 2.6–7.7%).[13,14] The conversion from LC to open cholecystectomy results in a significant change in outcome for the patient because of the higher rate of postoperative complications and the longer hospital stay.[15] The conversion rate as well as complications associated with LC depend on the experience of the surgeon and the degree of difficulty faced during surgery, which can be affected by factors such as a history of previous abdominal surgery, recurrent attacks of cholecystitis, acute cholecystitis (AC), advanced age of the patient, or male gender.[16] The other reasons reported in the literature are haemorrhage in Calot's triangle, slipped clips, partial/complete transaction of the CBD, injury to the stomach, instrument failure and bilio-digestive fistula. We found the main reason for conversion to be failure of anatomical identification of Calot's triangle structures because of severe inflammation caused either by AC or by dense adhesions caused by recurrent attacks of cholecystitis. In our study port site wound infection occurred in 7 (1.4%) patients. This is consistent with international studies that show that incidence of surgical site infection (SSI) was significantly lower in laparoscopic surgery compared to open surgery and patients treated with laparoscopy were 72% less likely to experience an SSI.[17] Iatrogenic bile duct injury (IBDI) is one of the most feared complications associated with cholecystectomy. There was no case of IBDI in our patients. Although there is no consensus, most studies however show an increase in the incidence of these injuries. With the advent of laparoscopy, the rate of serious bile duct injuries after cholecystectomy had a discreet increase of up to 0.8%, whilst the one related to the open route remained between 0.2–0.3%.[11] The prognosis is directly related to the patient's underlying conditions as well as the time elapsed between the lesion and its identification and treatment which is basically the reconstruction of the biliary path. The Roux-en-Y hepaticojejunostomy is considered to be the treatment of choice today.[18]

Laparoscopic cholecystectomy is now emerging as the procedure of choice in the management of patients admitted with AC. Single-centre and population-based studies documented the benefits of LC in the management of various gallbladder diseases, including AC.[19,20] The 5% of our cases who presented with acute cholecystitis and who had no additional comorbids were also treated with standard LC technique with exceptionally good results.

Bleeding complications account for up to one third of all major complications seen in LC, and are the second most common cause of death (after anaesthesia-related complications) in patients undergoing the procedure.[21] The reported incidence of uncontrollable bleeding in LC can be up to 2% (reported range: 0.03–

10%).[22] Fortunately we did not encounter any serious haemorrhagic complications. The incidence of Port Site Hernia (PSH) in a range of laparoscopic procedures has been described as between 0.14% and 22%.[23] In addition to pain, PSH can lead to severe complications, including bowel obstruction, strangulation, and perforation.[24] However, in our study there has been no PSH reported.

CONCLUSION

LC has proven to be a safe procedure with multiple benefits to the patients, including reduced postoperative pain, smaller scars, shorter hospital stay, shorter convalescence period, and decreased risk of selected complications compared with open cholecystectomy. Proper training, careful case selection, good visual equipment, and very meticulous technique are the key factors that ensure good results.

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