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ORIGINAL ARTICLE

LAPAROSCOPIC CHOLECYSTECTOMY: OUTCOME OF FIRST 202 CASES IN A DISTRICT HOSPITAL IN GILGIT

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Background: The incidence of gall stone disease is on the rise in Gilgit Baltistan. The objectives of the study were to assess the outcome of laparoscopic cholecystectomy in terms of conversion rate and postoperative morbidity, in The Aga Khan Medical Centre Gilgit. **Methods:** It was descriptive case series. All patients that underwent laparoscopic cholecystectomy between June 2009 to May 2014 were included. The data was collected prospectively. Demographic features, operative time, and hospital stay were studied. Postoperative complications were documented and evaluated according to outcome measures (bile duct injuries, morbidity, mortality, conversion rates, wound infections). **Results:** A total of 202 consecutive patients were enrolled with a mean age of 49±15 years. There were 164 (81%) female and 38(19 %) male patients. Twenty nine (15%) patients had hypertension, 51 (25%) patients had diabetes mellitus as comorbid conditions. The mean operative time was 54±21 minutes. The operative time was longer in 52 (26%) patients. Three patients (1.5%) required conversion to open cholecystectomy due to obscured anatomy in the area of Calot's triangle, and empyema gallbladder. The mean hospital stay was 2±0.7 days. No common bile duct injury, solid organ or bowel injury occurred in this study. The mean follow up duration was 30±15 months. Postoperative complications include, port site infection in 8 (2%) patient, chest infection in 5 (2.4%) patients, and one (0.5%) patient had myocardial infarction. There was no mortality reported in this group of patients. **Conclusions:** Laparoscopic cholecystectomy is a safe procedure with advantages of decreased wound infection, less pain, decreased hospital stay, and early recovery.

Keywords: Laparoscopic cholecystectomy, conversion, outcome, district hospital

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INTRODUCTION

Gallstone disease has become major morbidity, in Gilgit-Baltistan, for the last twenty years. The main causes are shift in life style patterns from active physical life to sedentary life; increase in body weight, and a dietary change has made tremendous affects. There has been shift in the last 25 years in the management of gallstone disease from an open surgical approach to laparoscopic cholecystectomy.¹ Since the introduction of laparoscopic cholecystectomy, much effort has been put in measuring outcome, primarily due to apparent increase in bile duct injuries.^{2,3}

Because of small scars and reduced postoperative pain, introduction of laparoscopic cholecystectomy procedure resulted in shorter hospital stay⁴, a shorter period of convalescence and earlier return to work^{5,6}. Morbidity and mortality rates have been traditionally used to measure the outcome in surgery, with much concern about the quality of these data.^{7,8} However, there remains considerable debate which measures should be used to reflect surgical quality, as the various measures have strengths and weaknesses.^{9,10}

We describe the experience of first 202 cases in a district hospital in Gilgit-Baltistan.

MATERIAL AND METHODS

This descriptive case series was conducted in The Aga Khan Medical Centre, Gilgit, from June 2009 to May 2014. Data was collected on a *pro forma* designed to include demographic information, history, examination findings, investigations, operation techniques and procedures, complication and their management as well as follow up. American Society of Anaesthesiology Physical Status (ASA) classification, hospital stay, primary diagnosis (symptomatic gallstone disease, acute and chronic cholecystitis and elective procedures), and duration of procedure were analysed. All patients undergoing laparoscopic cholecystectomy were included. Patients with clinical, biochemical and ultrasonological evidence of acute pancreatitis, common bile duct (CBD) stones and cirrhosis were excluded from the study. Preoperative antibiotics were given to all patients. Laparoscopic cholecystectomy was performed using a standard four port technique. Pneumoperitonium was established with a maximum pressure of 12-14 mm hg and camera was placed. When a complication was identified by a surgeon or physician, it was documented electronically. This file is operational all over the hospital and clinics that

makes recording simple. Data was entered using MS-Excel and analysed using SPSS-17.0.

RESULTS

A total of 202 patients were enrolled over a period of five years. Mean age of 49±15 years, (Range 13–75 years). Age groups are shown in table-1. There were 164 (81%) female and 38 (19 %) male patients. The indications for surgery are shown in table-2

Twenty nine (15%) patients had hypertension, 51 (25%) patients had diabetes mellitus as comorbid conditions. According to ASA classification, 133 (66%) patients were included in ASA class-I, 66 (33%) patients in ASA-II and two (1%) patients were in ASA class-III. The mean operative time was 54±21 minutes. (Range 30–150) The operative time was longer in 52 (26%) patients due to adhesions of omentum with gall bladder. Three patients (1.5%) required conversion to open cholecystectomy due to obscured anatomy in the area of Calot’s triangle, and empyema gallbladder. The mean hospital stay was 2±0.7 days. (Range 1–5 days). Maximum patients, i.e., 131 (64.85%) had a hospital stay of two days. Gallbladder was extracted in endobag in 198 (98%) through epigastric port and four (2%) patients through umbilical port.

No common bile duct injury, solid organ or bowel injury occurred in this study. The mean follow up duration was 30±15 months. (Range 6–65). Postoperative complications included: port site infection in 8 (2%) patient, chest infection in 5 (2.4%) patients, and one (0.5%) patient had myocardial infarction. There was no mortality reported in this group of patients.

Table-1: Patients by Age Group

Age Group	No. of patients	Percentage
<35 years	38	19
36–44 Years	51	25
45–54 years	48	24
More than 55 years	65	32
Total	202	100

Table-2: Distribution of Patients by Indication

Indication	Number of patients	Percentage
Recurrent biliary colic	71	35 %
Chronic cholecystitis	96	48 %
Acute cholecystitis	17	8 %
Mucocele	16	8 %
Empyema	2	1 %
Total	202	00

DISCUSSION

The management of gallstones has changed dramatically since the introduction of laparoscopic cholecystectomy. Laparoscopic surgery has gained worldwide popularity and acceptance because of such advantages as minimal trauma and physiological

dysfunction, shorter hospital stay, less postoperative pain, better cosmetics, and early return to work.^{12–13}

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 skills and required apparatus, particularly in rural areas. We started laparoscopic surgery in a newly established centre in Gilgit, i.e., The Aga Khan Medical Centre. Majority of patients in our study were women which is consistent with national and international studies.¹⁴ These patients were assessed by ASA classification system.¹¹

In our study, conversion rate of 1.5% is even low as compared with the reported literature. According to published studies in recent years, the conversion rates widely ranges between 2.6–7.7%.^{15–16} But measures should be taken to decrease the open conversion in certain cases. Experience of surgeon is directly proportional to conversion.¹⁷ More conversions occur during learning phase or when experienced laparoscopic surgeon is not present in the back up. Difficult dissection due to dense adhesions is the commonest cause for conversion to open procedure.

The conversion from laparoscopic cholecystectomy to open cholecystectomy results is a significant change in outcome for the patient, because of higher rate of postoperative complications and longer hospital stay. Port site infections occurred in 8 (2%) patients and were treated with drainage of collection, antibiotic according to culture sensitivity and daily dressings. Significant reduction in postoperative infection is one of the main benefits of minimally invasive surgery at the rate of surgical site infection is 2% versus 8 % in open surgery.¹⁸ In another study it is reported as 1.4% in laparoscopic surgeries versus 14.8 % in open cases.¹⁹ Five (2.4%) of our patients developed chest infections and were treated with chest physiotherapy and antibiotics.

The common indication of laparoscopic cholecystectomy in our study population is repeated attacks of biliary colic (83%) and this is consistent with the observation in other studies.²⁰ The mean operating time in our study was 61 minutes, which was much lower than reported in literature. The mean hospital stay in our study was 2 days, which has been reported as 2.9 days including the prolonged stay in complicated cases in a study from a centre as reported by Vagenas K *et al.*²¹ In spite of above mentioned complications, the overall outcome was satisfactory with better patient acceptance of the procedure in the first ever performed laparoscopic cholecystectomy in Gilgit region.

CONCLUSION

Laparoscopic cholecystectomy is a safe procedure with advantages of decreased wound infection, less pain, decreased hospital stay, and early recovery in a district level hospital.

AUTHOR'S CONTRIBUTION

GH: Main operating Surgeon, Script writer and compilation of results. DH: Review of script and data analysis. SW: Data entry. RS, AAK: Evaluation and optimization of all patients with comorbid conditions. MI: Data entry and review of article. MAS: Main person for data cleaning and analysis.

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