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LAPAROSCOPIC CHOLECYSTECTOMY — LOCAL EXPERIENCE

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ABSTRACT

Objectives: To evaluate the results of the first 100 cases of laparoscopic cholecystectomy in symptomatic gall stone disease in our unit.

Material and Methods: It was a descriptive study, carried out in Surgical "A" Ward, Department of Surgery, Khyber Teaching Hospital, Peshawar, Pakistan. This study was conducted from December 2006 to October 2008 including 100 patients who underwent laparoscopic cholecystectomy (LC). All patients with symptomatic gall stones were offered LC, excluding patients with CBD stones.

Results: There were 100 patients with symptomatic gallstones, eighty-four (84%) females and Sixteen (16%) males. Eighty percent of the patients had chronic cholecystitis with gall stones. This included 5 patients with mucocele and 2 patients with carcinoma as an incidental finding. Twenty patients had acute cholecystitis. The mean operative time was 45.50 minutes. Mean hospital stay was 2.30 days (range 1.5 – 4 days). Our total conversion rate to open surgery was 4%. Complications included port-site bleeding in 3 patients, port site infection in 3 patients, umbilical hernia in 2 patients and one patient presented with metastatic nodule at the epigastric port one year after cholecystectomy.

Conclusion: Laparoscopic cholecystectomy is a reliable, safe and cost effective treatment modality for symptomatic gallstones. With growing experience in laparoscopic technique, it is possible to reduce the conversion rate to the minimum without any increase in mortality or morbidity.

Keywords: Laparoscopic, cholecystectomy, complications, conversion rate.

INTRODUCTION

Gallstone disease is a major health problem worldwide particularly in the adult population[1]. The traditional open cholecystectomy (OC) performed for the first time in 1882 by Carl August Langerbach has been replaced by laparoscopic cholecystectomy (LC) which has revolutionized the treatment of gall bladder disease. This is now the gold standard for the treatment of gallstones and the commonest operation performed laparoscopically worldwide[2-3].

Minimal access surgery began in the early 1980s with the introduction of laparoscopic fallopian tube ligation. The first laparoscopic cholecystectomy was performed 7 years later, and was rapidly embraced as the preferred method for cholecystectomy despite a lack of evidence to support the safety of the new technique[4-5].

Clinical trials comparing the laparoscopic procedure with other approaches eventually revealed the newer procedure to be less morbid than traditional open cholecystectomy, or even mini-laparotomy[6-8].

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Laparoscopic cholecystectomy is a minimally invasive procedure whereby the gallbladder is removed using the laparoscopic technique. It causes less surgical trauma thereby resulting in reduced hospital stay and early resumption of normal activity[9-10]. The current research review shows clear benefit of laparoscopic cholecystectomy over open cholecystectomy in terms of intra operative, postoperative and long term morbidity[9-12].

The contraindications to LC in the early years following its introduction in 1987 by Mouret in France used to contain a long list of local and systemic conditions[13]. This list has progressively become shorter. Acute cholecystitis, previous scars, morbid obesity, common bile duct (CBD) stones and compensated cardiac and pulmonary diseases are no longer considered as contraindications to LC[14-17].

Now LC has become the first-line surgical treatment of calculus gallbladder disease but conversion to OC is still substantial. Unfortunately, as more cases with no selection criteria are being operated laparoscopically, the number of difficult cases has increased. It has been three years since we started performing laparoscopic cholecystectomy in our unit. This study is an evaluation of the outcome of the first hundred cases.

MATERIAL AND METHODS

The study was carried out in Surgical Unit 'A', Khyber Teaching Hospital, Peshawar Pakistan from December 2006 to October 2008. Adult patients of either sex, who underwent laparoscopic cholecystectomy were included in the study. The patients who had jaundice, mass or dilated CBD, CBD stones and patients having positive hepatitis B or C virus infection, were excluded. (Hepatitis B and C positive cases are not offered LC as per hospital policy for laparoscopic procedures). All patients were admitted the day before surgery and detailed history, clinical examination and necessary investigations including full blood count, Urine routine examination, blood urea, blood glucose, liver function tests and Hepatitis B and C screening were done. Ultrasound abdomen was done in each patient to confirm gallstones and to assess the CBD diameter. Chest X-ray and ECG were done if the patient was above forty years. Nasogastric tube was only used when stomach was found distended during operation, and the patient was asked to pass urine immediately before operation. One dose of second generation cephalosporin (cefuroxime) was given to each patient as prophylactic antibiotic and another dose after 8 hours. In patients with acute cholecystitis or in case of empyema or gangrene of the gallbladder, antibiotics were continued for 5 days postoperatively. Pneumoperitoneum was created by closed method, using Verress needle in 88 patients. In the remaining 12 patients, who had a history of lower abdominal surgery, the open method was used. In the majority of patients, we used three ports technique but some times when in difficulty, we used a fourth port as well. If the gallbladder was found to be tense, it was aspirated by puncturing the fundus. In the majority of patients (85%) we did not use any drain; in 15% a drain was used because of difficult dissection and leakage of bile or pus in the peritoneal cavity. The gallbladder was extracted through the epigastric port, which was extended if necessary. The data was collected on a proforma and analysed using SPSS-9.

RESULTS

Hundred patients with symptomatic gallstones (84 females and 16 males) underwent LC. The mean age was 43 years (range 18-75 years) with highest incidence in the age group 35-45 years. Eighty percent patients had chronic cholecystitis with gall stones, (including mucocele 5% and carcinoma 2% as an incidental finding), and 20% had acute cholecystitis. The mean operative time was 45.50 minutes ± 2 S.D, and mean hospital stay was 2.30 days (range 1.5-4 days). Four patients with acute cholecystitis were converted to open cholecystectomy because of technical difficulty. The difficulty in dissection was due to a frozen Calot´s triangle in 3 patients and cholecystoduodenal fistula in one. Nearly one third of the patients had gallstone spillage, because of perforation of the gall bladder during surgery and majority of them were retrieved at the same time. No patient had any complication directly related to spillage of stones. The most common complaint on the first post operative day was pain in the right shoulder and pain at the port sites. Three (3%) patients had port-site bleeding and three (3%) had minor port site infection. None of the patients had CBD injury. There was no mortality Two (2%) patients developed umbilical hernia and one (1%) patient presented with metastatic nodule at the epigastric port, one year after cholecystectomy. In comparison to the published data, there was obvious lower conversion rate, which was not associated with increased morbidity or mortality.

DISCUSSION

Since its introduction in 1987, laparoscopic cholecystectomy has become the first line surgical treatment of calculus gallbladder disease and there is continuous decrease in open cholecystectomy; however, conversion to OC remains a possibility[18]. Unfortunately preoperative factors indicating risk of conversion rate are unclear[19].

In our study, majority (84%) of the patients were female and 16% male, which is consistent with other loco regional studies[5,9,10]. Out of 100 patients 4 patients (4%) required conversion to OC, three patients for unclear biliary anatomy, and one patient was converted because of cholecystoduodenal fistula. This is in keeping with the 2-5% acceptable conversion rates that are reported in some larger series[20,21].

Various studies show the different factors predicting conversion to OC[22,23] Male sex, ultrasound finding of contracted/thick walled gallbladder, wide CBD, age >65 years and early learning phase were all reported to be predictors of conversion to OC. Medical problems like diabetes mellitus are also associated with higher conversion rate[24]. Acute and gangrenous cholecystitis, jaundice, CBD stones, masses are factors associated with higher conversion[25,26,27]. In a recent study, male patients had higher conversion rates and significantly longer operating times than females[28] as observed in our study. Kaushik et al claimed that the commonest cause of conversion was frozen Calot's triangle, followed by injury to the common bile duct, and the higher conversion rate (7.06%) was due to adopting "no hesitation" policy in converting.[29] In other loco-regional experience, Kamal et al showed a conversion rate of 6.28% whereas Al-Hadi et al showed a conversion rate of 2.7%[30].

From the above discussion, and contrary to the opinions held by some previous workers, it is clear that a low conversion rate can be associated with a low complication rate. The factors that influence the

conversion rate are probably related to the patient, the surgeon as well as the set up and instrumentation.

We encountered no major access related complication like port site bleeding or complications associated with insertion of Verress needle or trocar usually the first one, or procedure related complications like injury to the CBD or bowel etc. Hashizume and Sugimachi [31] have reported trocar injuries to bowel and major blood vessels to be as high as 1% and most of them have occurred during the insertion of the first trocar. Schafer et al.[32] in their study report a similar result. Blind trocar insertion and access by Verress needle remain the important causes of complications as reported by many authors[31,32].

On the other hand, open technique of trocar insertion has promising results and seems to have reduced the access-related major vessel injury and mortality rate[33]. Adequate manual lifting of the abdominal wall during insertion is very helpful and gives good safety. We recorded only 3 minor port site infections which responded to daily dressing, with out the use of antibiotics.

In this study we used cefuroxime 1.5g, before surgery and after 8 hours. Patients with acute cholecystitis or empyema, were given a full course of antibiotics for 5 days. Recent evidence has shown that antibiotic prophylaxis is not necessary to prevent wound infection after LC[34-36]. These trials demonstrated that 528 patients who received prophylaxis had no difference in wound infections (1.5%) compared to 371 patients who had prophylaxis omitted (2.1%). In this audit, only 3 minor wound infections were encountered despite a range of different practices[37,38]. There may be room to standardize the practice regarding antibiotic prophylaxis.

One patient developed metastatic squamous cell carcinoma at the port site one year after surgery. We excised the nodule and screened the patient for any residual disease at the liver bed, but no residual disease was found.

It is true that there is a higher operating theatre cost associated with LC than the conventional open approach. However, we must realize that the overall costs are lower because there are savings in post-operative management from reduced hospitalization, analgesic requirements and time lost from work[39-40].

CONCLUSION

Although there is a significant learning curve, laparoscopic cholecystectomy is a safe and effective procedure that can be performed with minimal risk. Laparoscopic cholecystectomy should be performed by surgeons who are trained in biliary surgery and knowledgeable in biliary anatomy, as a preferred option.

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