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Original Article

Laparoscopic cholecystectomy: Our experience in a rural setup

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ABSTRACT

Background: Laparoscopic cholecystectomy has become the gold standard in symptomatic gallstone disease. Today more than 80% of cholecystectomies worldwide are carried out laparoscopically. The present study describes our experience with laparoscopic cholecystectomy in a rural setup. **Aim:** To study the results of laparoscopic cholecystectomy in a rural setup. **Settings and Design:** Prospective study done at R. L. Jallapa Hospital Tamaka Kolar from January 2003 to November 2012. **Materials and Methods:** A total of 120 patients undergoing laparoscopic cholecystectomy by the same surgeon were included. **Results:** Out of the 120 patients, 108 (90%) were females and 12 (10%) were males. Their age ranged from 16 to 75 years. Majority were in fourth decade of life. Majority of the patients [70 (58.3%)] had gallstones. The procedure was converted to open cholecystectomy in six patients. Twenty-four patients had minor complications. Majority of the patients stayed in the hospital postoperatively for less than 5 days. **Conclusion:** Laparoscopic cholecystectomy in our setup proved to be a safe procedure and an effective treatment for gallstone disease.

Keywords: Gallstone diseases, laparoscopic cholecystectomy, rural setup

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Introduction

Gallstone disease is a major health problem worldwide, particularly in the adult population.[1] A study done in Karachi shows that it is the third commonest cause of admission accounting for 16%[2] and 14%.[3]. Cholecystectomy is the procedure of choice for symptomatic gallstones. First, open cholecystectomy was performed in 1882 by Carl August Langerbach.[4] Laparoscopic cholecystectomy is the gold standard treatment for gallstones and the commonest operation performed worldwide.[5,6] Various studies have shown the advantage of laparoscopic cholecystectomy over open cholecystectomy.[7-9] The present study shows our experience with laparoscopic cholecystectomy in a rural setup like ours where adequate expertise is in the phase of development.

Materials and Methods

This was a prospective study consisting of 120 patients treated with laparoscopic cholecystectomy in R. L. Jallapa Hospital Tamaka Kolar from January 2003 to November 2012.

Inclusion criteria: Patients of either sex and more than 15 years of age, who underwent laparoscopic cholecystectomy irrespective of the indication were included in the study.

Exclusion criteria: The patients who had jaundice, common bile duct (CBD) stone of diameter >10 mm, perforated gallbladder, or testing positive for hepatitis B or C virus in the screening test were excluded.

All patients were admitted and the necessary preoperative workup including blood counts, renal function tests, sugar, liver function tests, and hepatitis B and C screening was done. Ultrasound abdomen was done in each patient to confirm the gallstones and to assess the CBD diameter. Chest X-ray and ECG were done. Patients opting for laparoscopic cholecystectomy were explained the possibility of conversion to open cholecystectomy. A thorough pre-anesthetic evaluation was done and fitness for general

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anesthesia was assessed. All cases were elective cases. A dose of antibiotics (usually a cephalosporin with metronidazole) was given preoperatively. A nasogastric tube and Foley catheter were inserted routinely. Injectable antibiotics and analgesics were given for 2–3 days postoperatively. Then they were given orally for another 3 days. Patient was started orally between 24 and 48 h post surgery in most cases. Sutures were removed usually by the 7th–8th postoperative day, and the patient was reviewed on the 7th and 21st days after discharge. Follow-up was done for a period of 3–6 months whenever possible.

Standard four-port technique was used. The pneumoperitoneum was created by closed method by using Veress needle.

Results

Out of the 120 patients, 108 (90%) were females and 12 (10%) were males [Table 1]. The female to male ratio was 9:1. The age ranged from 16 to 75 years, with the mean age being 41 years approximately. Majority were in fourth decade of life [Table 2]. Majority of the patients [70 (58.3%)] had gallstones and 3 (2.5%) had mucocele. The indication for cholecystectomy is given in Table 3. The operative time is shown in Table 4. The procedure was converted to open cholecystectomy in six patients due to the presence of dense fibrous adhesions in all of them [Table 5]. Twenty-four patients had minor complications [Table 6]. Twelve had wound infection which was managed conservatively. Six had gallstone spillage. Another six had chest infection which was managed medically. Majority of the patients stayed in the hospital postoperatively for less than 5 days [Table 7].

Discussion

In 1987, the first laparoscopic cholecystectomy was done by Dr. Philip Mouret of Lyon, France.[18,19] Today laparoscopic cholecystectomy is the gold standard for the removal of gall bladder. The present study describes our experience with laparoscopic cholecystectomy in a rural setup. The facilities such as sonography, blood bank, and ICU had undergone revolution during the development of the setup. There are no facilities for Endoscopic retrograde cholangiopancreatography (ERCP)/Magnetic resonance cholangiopancreatography (MRCP); hence, patients

Table 1: Sex distribution

Sex	N = 120
Male	12 (10%)
Female	108 (90%)

Table 2: Age distribution

Age in years	N = 120
≤20	6
21–30	6
31–40	24
41–50	48
51–60	24
61–70	6
>70	6

Table 3: Indication for cholecystectomy

Diagnosis	N = 120	Percentage
Acute cholecystitis	35	29.17
Chronic cholecystitis	12	10
Cholelithiasis	70	58.3
Mucocele	3	2.5

Table 4: Operative time

Time in minutes	Patients (N = 120)	Percentage
≤60	36	30
60–120	66	55
>120	18	15

Table 5: Conversion rate

Series	Conversion rate
Raza *et al.*[1]	11.11
Saeed *et al.*[7]	3.20
Bhopal *et al.*[10]	7.50
Saleem *et al.*[11]	10.00
Tarcoveanu *et al.*[12]	16.00
shiazaki *et al.*[13]	6.40
Jaffary *et al.*[14]	3.00
Shamim *et al.*[15]	7.50
Cheema *et al.*[16]	2.00
Elder *et al.*[17]	12.50
Our study	5

Table 6: Complications

Complications	N = 120	Percentage
Absent	96	80
Present	24	20
Major complications		
Bile duct injuries	–	
Major bleeding	–	
Minor complications		
Chest infections	6	5
Gallstone spillage	6	5
Wound infection	12	10

Table 7: Hospital stay	
No. of days	Post-op hospital stay
≤5	100
5–10	14
>10	6

who need these investigations are referred to a higher center. As with other operative procedures, laparoscopic cholecystectomy is also associated with complications. Laparoscopic cholecystectomy is associated with iatrogenic bile duct injuries and other serious complications like injury to aorta by Veress needle or trocar.[20,21]

In our study, majority of the patients were females, i.e. 90%. This is consistent with other reports.[4,5,6,12,14] Mean and minimum age is slightly less than that reported in other studies.[12,14] The conversion rate is higher in developing countries[1,7,8,15,16] as compared to developed countries.[12,21] It ranges from 2 to 15% in various studies.[20] In our study, the conversion rate was 5% and it was due to dense fibrous adhesions. The other reasons reported in the literature are hemorrhage in Calot's triangle, slipped liga clips, gangrenous patches in the fundus, partial transaction of the CBD, injury to the stomach, instrument's failure,[14] and bilio-digestive fistula.[1,15,16] We did not encounter any of these problems in our study. Chest infection occurred in six patients, which was managed medically. Gallstone spillage occurred in six patients, which was managed through grasper. Wound infection occurred in 12 patients, which required no special measures and was managed by dressings. In the early part of our study, the operative time was more, but the same was decreased in the later part of the study as we become more and more experienced.

Conclusion

Today laparoscopic cholecystectomy is widely accepted as the gold standard for removal of the gall bladder. It is a safe and effective procedure in our setup and is up to the accepted standard as compared to other studies.

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