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Laparoscopic Cholecystectomy - A Cross Sectional Study

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Abstract

Aims and Objectives: 1. To study the clinical profile of patients undergoing laparoscopic cholecystectomy. 2. To study the post operative complications of laparoscopic cholecystectomy. **Methodology:** Ultrasound confirmed 48 cases of either sex admitted in department of surgery with cholelithiasis, gall bladder polyp, acute or chronic cholecystitis were included in this survey. These patients underwent laparoscopic cholecystectomy after preoperative preparation during August 2011-December 2013. **Results:** Highest age incidence was seen in 4th decade with female preponderance. Most common presenting symptom was pain in abdomen followed by nausea, vomiting, dyspepsia and fever. Only 1 procedure was converted to open cholecystectomy with conversion rate of 2.08%. It was due to dense adhesions from chronic infection. The overall post-operative complication rate was 6.25% with wound infection being the most common occurring in 2 cases and prolonged ileus in 1 case. Chronic cholecystitis was the major histopathological diagnosis. The median post-operative stay in our study was 3 days. **Conclusion:** Chronic cholecystitis is the most common presentation of cholelithiasis with female pre-ponderance and incidence more in the 4th decade. Laparoscopic cholecystectomy is safe and feasible treatment with less complication rate and early recovery.

Keywords: Cholelithiasis, Laparoscopic Cholecystectomy

1. Introduction

This is an era of revolution in surgery. Since the first laparoscopic cholecystectomy, laparoscopy has seen many changes and passed many milestones. Management has progressed through phases of non surgical management back to laparotomy, minilaparotomy and now laparoscopic cholecystectomy is the new gold standard for treatment of gallbladder disease[1,2]. Initially there was a lot of concern regarding efficacy of laparoscopy, operative time, patient's safety and cost effectiveness but now it is proven that laparoscopic cholecystectomy is ideal, most effective and feasible treatment for cholelithiasis and cholecystitis. In 1992, the statement published by National Institute of Health (NIH) Consensus Development Conference stated that "Laparoscopic cholecystectomy provides a safe and effective treatment for most patients with symptomatic gall stones"[3]. Gallstones are among the most common gastrointestinal illness requiring hospitalisation. About 1 in every 10 adults has gallstones.

The advantages of laparoscopic cholecystectomy include avoidance of large incisions with improved cosmesis, less post-operative pain, earlier return of bowel function, reduced hospital stay and cost. Reduced post-operative recovery time and early return to work benefits this approach[4–6]. Day care laparoscopic cholecystectomy is now listed both on the BADS trolley of procedures (1999)[7] and in the Audit Commission basket of procedures for day surgery published in 2000[8].

Recent upsurge in practice of laparoscopic surgery has ushered a new era of surgical treatment which has a profound effect on management.

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2. Materials and Methods

Our study included 48 patients who were admitted at tertiary health care centre during the period of August 2011 to December 2013. Study included all patients with acute cholecystitis, chronic cholecystitis, biliary colic, empyema gall bladder and gall bladder polyp. Patients with carcinoma gall bladder, cholangitis, end stage cirrhosis, ascitis, portal hypertension and associated common bile duct stones were excluded from the study. This study involved pre operative assessment, intra operative technique and post operative follow up till discharge.

2.1 Investigations

1. Routine blood investigations
2. Liver function tests
3. Prothrombin time-International Normalised Ratio
4. Ultrasonography of abdomen
5. Abdominal radiography
6. Computerised Tomography with Contrast
7. Magnetic Resonance Cholangiopancreaticography (MRCP)

2.2 Laparoscopic Cholecystectomy

2.2.1 Anaesthesia

General anaesthesia is used for all patients. Nasogastric tube is inserted as a routine.

2.2.2 Surgical Team

Surgical team consists of operating surgeon, 2 assistant surgeons and 1 OT assistant. The operating surgeon and camera surgeon stand on left of the patient while the assistant surgeon and the OT assistant stand on the right of the patient. Two monitors are placed at 10 o'clock and 2 o'clock position.

2.2.3 Procedure

Port placement-A 10mm trocar was inserted at the umbilicus and pneumoperitoneum created with carbon dioxide. A 5mm trocar was placed along the anterior axillary line midway between costal margin and anterior superior iliac spine and another 5 mm trocar was placed along mid-clavicular line just below the costal margin. The operating port was 10mm trocar placed in midline 2 to 4cm below xiphoid process.

There are two methods for insertion of primary umbilical trocar.

1. The Open or Hasson technique[9].
2. The "classic" or closed or the Veress needle technique.
3. The procedure was based on standard four puncture technique using clip applicator to ligate cystic duct and cystic artery and cautery to cut and coagulate. Gall bladder was dissected from liver bed and taken out from umbilical port. Ryles tube no.14 (drain) was placed in Morrison's pouch through lateral 5mm port incision. All port incisions were closed.

2.3 Post-operative Management

Patients were kept nil by mouth for 24 hours followed by oral sips. Intravenous fluids, broad spectrum antibiotics and analgesics were started. Nasogastric tube was removed on second day of surgery. Drain removal done after drain output was less than 10 ml. Patient was discharged after removal of drain.

3. Observations and Results

This study included 48 cases that were studied over a period of 2 years from August 2011 to December 2013.

3.1 Distribution of Cases by Age and Sex

In the present series the youngest patient was 24 years of age and the oldest patient was 75 years of age. Majority of the patients series were in the age group of 31-40 years. Out of 48 patients 30 were females and 18 were males. The male:female ratio was 1:1.6 (Table 1).

Table 1. Age and sex distribution of patients

AGE IN YEARS	NO. OF CASES	PERCENTAGE
20-30	5	10.42
31-40	18	37.50
41-50	10	20.83
>50	15	31.25
Total	48	100
SEX	NO. OF CASES	PERCENTAGE
Male	18	37.50
Female	30	62.50
Total	48	100

4. Presenting Symptoms and Signs

The predominant symptom seen in all 48 patients was pain followed by vomiting in 21 patients. 16 patients had complaint of dyspepsia and 12 patients had fever. Tenderness in right hypochondrium was present in all 48 patients. Guarding was present in 7 while mass was palpable in 5 patients (Table 2).

Table 2. Symptoms and Signs

SYMPTOMS	NO. OF CASES	PERCENTAGE
PAIN	48	100
NAUSEA/VOMITING	21	43.75
DYSPEPSIA	16	33.33
FEVER	12	25
SIGNS	NO.OF CASES	PERCENTAGE
TENDERNESS IN RIGHT HYPOCHONDRIUM	48	100
GUARDING	07	14.58
MASS	05	10.42

5. Post-operative Complications

Only 2 patients had umbilical port site infection which was managed with antibiotics and regular dressing. 1 patient had prolonged ileus which resolved on ambulation and electrolyte supplementation (Table 3).

Table 3. Post operative complications

POST-OPERATIVE COMPLICATION	NO. OF CASES
Wound infection	2
Haemorrhage	0
Retained stone	0
Bile leak	0
Prolonged ileus	1

6. Discussion

In this study the cases fall between 20 to 80 years of age group. There is increase in incidence in the 4th and 5th decade with maximum incidence in the 4th decade. In Hanif series majority of the patients were found to be in the 5th decade while in the Herman series the peak incidence was in the 6th decade[10–12].

In this study 30 out of 48 patients were females i.e. 62.50% while the rest 18 were male i.e. 37.50%. The male:female ratio was 1:1.6. Bhattacharya's series showed 71.4% of the patients were females while the rest 28.60% were males[13]. Similar sex preponderance in the favour of females was seen in the Hanif series.

The predominant symptom in the present study was pain seen in all 48 patients which is caused due to inflammation of the gall baldder. Pain was the common symptom in both Ganey's series and Alok Sharma series[14,15]. The commonest site of pain was right hypochondrium followed by epigastrium. Out of the 48 patients 27(56.25%) had dull aching pain, 12(25%) had colicky pain and 9(18.75%) had pricking pain. Alok Sharma, Ganey's and Gosawit et al. series showed colicky type of pain as major component. 21 patients (43.75%) in this study had vomiting which is slightly lower as compared to Ganey et al. (55.60%). Vomiting mostly occurred during the attacks of pain. None of the patients had jaundice in the present series. 16 (33.33%) patients had dyspepsia which is higher than the Ganey's series (21%) and Alok Sharma series (8.62%). Dyspepsia was relieved after patient underwent cholecystectomy. 12(25%) patients had history of fever which was mild and was treated with antibiotics, analgesics followed by laparoscopic cholecystectomy.

General examination revealed that 33(68.75%) patients had BMI<25. 6 (12.5%) patients had BMI in the range of 25-27. 5 and 9(18.75%) patients had BMI>27.5. Six patients were hypertensive and 4 were diabetic. 2 patients had bronchial asthama and 1 was hypothyroid. Scar due to previous surgery was present in 12 (25%) patients out of which 11 were infraumbilical and one was midline vertical.

44(91.67%) patients had tenderness in right hypochondrium which was more as compared to Hadfield's series (65.50%)[16]. Guarding was present in 7(14.58%) slightly lower than the Hadfield's series (18.70%). Murphy's sign was present in 12 (25%) patients. Mass was present in 4(8.33%) patients similar to Hadfield's series (7%).

In our series 46 were found to have chronic cholecystitis confirmed by histopathology. 2 patients had acute cholecystitis. None of them were found to have acute on chronic cholecystitis. These results were similar to Bhattacharya et al. and Raza et al series[17]. Our results confirm that chronic cholecystitis is the commonest clinical presentation of cholelithiasis requiring laparoscopic cholecystectomy.

The decreased length of hospital stay associated with laparoscopic cholecystectomy has been considered to be

one of its main benefits. In our series we found that a median post-operative stay of 3 days. This data is comparable to those of other published series. Early recovery and reduced post-operative stay resulted in reduction of cost but higher operating room expenses and costly equipments increases overall cost. All patients were followed up for a period of 1 month which revealed no significant abnormality.

8. References

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