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Clinical profile of patients with cholelithiasis at a tertiary care hospital

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Abstract

Gallstones represent a failure to maintain certain biliary solutes, primarily cholesterol and calcium salts in a solubilized state. An important biliary precipitate in gallstone pathogenesis is biliary sludge, which refers to a mixture of cholesterol crystals, calcium bilirubinate granules, and a mucin gel matrix. The general bio-data of patient regarding his name, age, sex, religion, occupation, socio-economic status and address was collected. A detailed history was taken with special reference to duration of right upper quadrant pain or epigastric pain, its periodicity, its aggravation by fatty meals and relief by oral or parenteral analgesics. 16 patients presented with nausea along with pain abdomen and 78 patients presented with vomiting, whereas 94 patients presented with both. Jaundice was seen in 33 patients.

Keywords: Cholelithiasis, gallstones, epigastric pain

Introduction

The primary function of the gallbladder is to concentrate bile by absorption of water and sodium, there by strengthening the digestive power of bile. The gallbladder and bile ducts are well adapted for the function of storing and discharging bile into the duodenum during digestion.

The flow of bile in and out of gallbladder is determined primarily by contraction of the gallbladder and relaxation of the sphincter of Oddi. The healthy gallbladder is rarely static. Continuous cycle of partial emptying and refilling is governed by the intestinal migratory myoelectric complex between meals. This intermittent contraction and expulsion of bile into duodenum helps in preventing stasis of bile within the gallbladder and thereby prevents the stone formation^[1].

Gallbladder contraction is modulated by both vagus and circulating peptides. During cephalic phase of digestion, vagal stimulation is responsible for gallbladder contraction. During interdigestive period, it is the vagal neurons and circulating polypeptides that mediate the contraction. Vasoactive intestinal polypeptide (VIP) released by vagal neurons inhibits gallbladder contraction and mediates post prandial gallbladder filling. Clinically gallbladder motility is inhibited by truncal vagotomy and by chronic fasting^[2].

Gallstones represent a failure to maintain certain biliary solutes, primarily cholesterol and calcium salts in a solubilized state. An important biliary precipitate in gallstone pathogenesis is biliary sludge, which refers to a mixture of cholesterol crystals, calcium bilirubinate granules, and a mucin gel matrix. The finding of macromolecular complexes of mucin and bilirubin, similar to biliary sludge in the central core of most cholesterol gallstones, suggests that sludge may serve as the nidus for gallstone growth^[3].

Gallstones are the most common biliary pathology. The incidence of biliary calculous disease varies widely throughout the world. By the age of 75, about 35% of women and 20% of men would have developed gallstones. The incidence of gallstone disease in Asia is considerable and constitutes a problem of enormous magnitude. The incidence of cholesterol gallstones is increasing in Asia for the reasons that may be related to environmental and dietary considerations^[4].

In India, there is a dual pattern of prevalence. Some studies have shown that North Indians are more prone to cholelithiasis than South Indians. The nature of the disease is also different in North India and South India.

In North India, Cholesterol stones form the majority of gallstones. In contrast to this, pigment stones are more frequent in South India.

Methodology

Source of data

All patients undergoing laparoscopic cholecystectomy, and includes 200 patients. This was a prospective study conducted over 2 years.

Methods of Collection of Data

All patients presenting with cholelithiasis without choledocholithiasis; and with no contraindication for general anesthesia were included in the study. Medical records of all patients who underwent LC were reviewed. Data recorded included demographic information, past medical history, indication for operation, duration of operation, reason for conversion and post-operative complications.

Inclusion criteria

- All patients with symptomatic cholelithiasis.
- Cholelithiasis with previous abdominal surgeries.
- Age between 18-70 years.

Exclusion criteria

- Pediatric age group
- Carcinoma of gall bladder
- Perforated gall bladder
- Patients unfit for general anesthesia
- Choledocholithiasis not cleared by ERCP
- Major bleeding disorder

The general bio-data of patient regarding his name, age, sex, religion, occupation, socio-economic status and address was collected. A detailed history was taken with special reference to duration of right upper quadrant pain or epigastric pain, its periodicity, its aggravation by fatty meals and relief by oral or parenteral analgesics. Any significant past history was also enquired. A relevant general physical examination, abdominal and systemic examination was done.

Pre-operative work up included a complete blood count, blood sugar, blood urea, serum creatinine, liver function tests, hepatitis profile, coagulation profile, X-ray chest, ECG, Urine routine and ultrasound of abdomen. Ultrasound was routinely performed on all patients to confirm the clinical diagnosis of cholelithiasis with number and size of calculus and CBD calculi or dilatation of CBD.

Results

The mean age in this study was 41.89 years. The age group of the patients ranged from 18 years to 70 years. The maximum incidence is seen in the age group of 31-40 years followed by 18-30 years of age.

Table 1: Age Group

Age Group	No. of Patients	Percentage (%)
18-30	49	24.5%
31-40	53	26.5%
41-50	44	22.2%
51-60	35	17.5%
61-70	19	9.5%

In 200 cases, 60 were males and 140 were females. The ratio of males to females 1:2 the above sex distribution shows that the

gall bladder diseases have a higher frequency in female than in males.

Table 2: Gender

Gender	No. of Patients	Percentage (%)
Male	60	30%
Female	140	70%

Table 3: Clinical Presentation

Presentation	No. of cases	Percentage (%)
Epigastric pain	63	31.50%
Right Hypochondriac pain	106	53.00%

Out of 200 patients, 106 patients (53.00%) had a chief complaint of pain in the right hypochondrium, 63 patients (31.50%) presented with epigastric pain and the remaining 30 patients (15%) were asymptomatic (incidental cholelithiasis).

Table 4: Associated Symptoms

Symptom	No. of cases	Percentage (%)
Nausea	16	8.0%
Vomiting	78	39.0%
Nausea + Vomiting	94	47.0%
Jaundice	33	16.5%

16 patients presented with nausea along with pain abdomen and 78 patients presented with vomiting, whereas 94 patients presented with both. Jaundice was seen in 33 patients.

Table 5: Co-morbidities

Co-morbidity	No. of patients	Percentage (%)
Diabetes Mellitus (DM)	38	19%
Hypertension (HTN)	32	16%

Out of 200 patients 19% of patients suffered from Diabetes Mellitus whereas 16% of patients were Hypertensive.

Discussion

In this study cases fall between 18-70 Yrs. There is an increased incidence in the 3rd& 4thdecade with the maximum incidence in the 3rddecade. In our study the mean age is 41.89years. Daradkeh [5] reported mean age of 47.2 years, whereas Richards ML *et al.* [6] 40 years.

All the 200 patients were planned for elective laparoscopic cholecystectomy. 16 out of the two hundred patient's i.e., 8.0% were converted to open cholecystectomy. Maximum converted patients were in the age group of 51-60 years i.e., 6 patients (37.5%). Thomas B Hugh *et al.* [83] and Rohde V *et al.* [7] have reported a similar peak incidence in the 3rd and 4th decade.

In the present study 140 out of 200 cases were female while the rest 60 were male. Battacharya⁸ series showed 71.4% were female, 28.6% were male.

The reason for the high incidence among females could be that pregnancy and child birth have a definitive influence on biliary tract disease, acting by cholestasis as well as weight gain and consequent hypercholesterolemia.

In a series of 6147 patients of laparoscopic cholecystectomy by Singh Kuldeep *et al.* [9] (1993-2004) 2124 were males (34.5%) and 4023 were females (65.4%) with an average age of 48.6 years (range 22-84 years). In another series of 6380 patients of laparoscopic cholecystectomy by Singh Kuldeep *et al.* (1992-2005) 2250 were males (35.2%) and 4130 were females (64.7%) with an average age of 49 years (range 22-84 years). Thus our

study coincides with both the studies of Singh Kuldeep *et al.*

In our study, 6.7% males required conversion as compared to 8.6% females. Hean TK *et al.* [10], Matter I *et al.* [11] and Al Salamah [12] found male gender as a most significant determinant for conversion to OC.

The reason for higher conversion rates in female patients remains unexplained, female gender has been associated with significant risk factor in our series. This substantiates increased rate of conversion of LC in females compared to male gender.

Out of 200 operated patients, 106 patients (53%) presented with a chief complaint of pain in the right hypochondrium, 63 patients (31.5%) presented with pain in the epigastrium and remaining 31 patients (15.5%) were asymptomatic and were detected incidentally. Similar presentations were noted in the series of Alok Sharma, Ganey series, Goswitz *et al.* series [13]. 56% (28 patients) of cases in the present series had nausea and vomiting. Patients vomiting were spontaneous, occurred mostly during the attack of pain. Vomiting in this study was similar to Ganey *et al.* series.

In the present study 33 patients had jaundice. The cause of the jaundice was stone the common bile duct. The common bile ducts were cleared using ERCP and stenting.

24% (48 patients) of patient had dyspepsia. The Endoscopic examination in these patients did not reveal any pathology. On ultrasound examination, these patients had gall stones. The dyspepsia was relieved after these patients undergone Cholecystectomy. The incidence of dyspepsia in present series was similar to Ganey series, Alok Sharma series. Fever was present in 4 cases in the present study. Fever was secondary to cholangitis due to biliary obstruction. The fever occurred as a part of Charcots triad. Fever was of moderate degree. All these patients were treated conservatively.

Conclusion

- In our study gall bladder diseases were more common in females as compared to males with a ratio of 2:1 (70% of the patients were females).
- The commonest age of presentation of gall bladder diseases is 31-40 years (26.5% of the patients presented in this age group).

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