

A PROSPECTIVE STUDY OF CLINICAL PRESENTATION AND MANAGEMENT OF CHOLELITHIASIS IN A TERTIARY CARE HOSPITAL, ODISHA

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ABSTRACT

Introduction: Now a days cholelithiasis is the major cause of increased abdominal morbidity and mortality throughout the world. There is impairment of metabolism of cholesterol, bilirubin and bile acids, leads to formation of gallstones in the hepatic duct, common bile duct, or gallbladder. **Objectives:** This study was conducted to analyze the clinical presentation, incidence and variations of presentation among the various age & sex groups and the different modes of management of Cholelithiasis. **Results:** This study Included 65 patients of cholelithiasis, out of which 41 were females and 24 were males. The mean age group of patients was 45 years and incidence rate more common in female patients with mean age of 45.3 years. It is observed that mixed stones 36(55%) were commonly seen compared to pigment stones 21(32%) and cholesterol stones 08 (12%). Major association was seen with patients who are on mixed diet (N=39). Upper abdominal pain was the primary presentation seen in all patients, associated with dyspepsia, nausea, vomiting and fever in few patients. As laparoscopic cholecystectomy is considered as gold standard technique, 83% of patients under went same surgery with minimal post operative complications compared to open cholecystectomy. **Conclusion:** Laparoscopic cholecystectomy reduces the number of hospital days and was associated

with lesser postoperative morbidity. Further studies are required in larger population to find out the prevalence rate as well as mode of management in patients with cholelithiasis.

KEYWORDS Cholelithiasis, Laparoscopic Cholecystectomy , Mixed Stones

INTRODUCTION

Human beings were affected for many centuries with cholelithiasis. Gallstone disease was first described in 1507 by a Florentine pathologist, Antonio Benivenius.¹ The clinical descriptions of biliary tract disease are also described by the ancient Indian Physician Charaka during the 2nd century and the father of Indian Surgery Shushruta during the 6th century in their writings.² The prevalence rate of gall stones is different in various parts of the world. It is observed that there has been a marked increase in the incidence of gall stone in the population in the past century.³ It is estimated that 4% of the Indian population suffers from cholelithiasis yearly. The increase in the incidence of cholelithiasis in India is due to westernization, availability and affordability of investigation like ultrasound in both peripheral and urban areas.⁴

Gallstones have multifactorial pathogenesis and vary according to the type of gall stones. Based on their chemical composition, gallstones can be classified as a)Cholesterol, b)Pigmented, and c)Mixed stones. The pathophysiology behind the formation of gallstone is the supersaturation of constituents of bile. When constituents of bile exceeds their maximum solubility rate, it leads to supersaturation and gallstone formation.⁶ Approximately 75% of patients present with episodic abdominal pain and who seek medical attention because of the same. The gallstones may block the cystic duct and lead to the biliary colic syndrome.⁷

For Cholelithiasis, ultrasonography is the main diagnostic study of choice. Mostly it's the only study required to diagnose this condition. The management of cholelithiasis includes primarily surgical modality and nonsurgical therapies in a few patients who are not fit for surgery. The surgical management is elective cholecystectomy, either a standard laparoscopic approach or open cholecystectomy. The nonsurgical management consists of dissolution of gallstones with bile salts, extracorporeal shock wave lithotripsy (ESWL) and invasive contact dissolution with organic solvents. Because of the increase incidence of gallstones and its variable presentations in India and the west, there is a great need for a study that can provide information regarding the prevalence of the disease, various clinical presentations, management and outcomes of cholelithiasis. The objectives of the present study are to evaluate the age, sex incidence, and the common etiological factors of gallstones, to illustrate various types of clinical presentations in calculous cholecystitis and to study various modes of management and their results in

patients attending MKCG MCH Berhampur from July 2022 to June 2023.

Methodology

This is a prospective study in which 65 patients included with clinical features of calculous cholecystitis to MKCG MCH, Berhampur. All patients coming to the hospital with signs and symptoms suggestive of Gallstone sand were diagnosed with Calculous Cholecystitis. Patients with acalculous Cholecystitis were included in the study.

Patients below 18 years presenting with Calculous or Acalculous Cholecystitis and patients who did not consent to join the study were excluded from the study. A well-designed performance was used to collect data on the patients. Demographic data of the patient include age, religion, socioeconomic status and details of disease condition like nature of the symptoms, duration of the symptoms , past history of similar complaints, diet history, alcohol intake, diabetes and other co-morbid conditions were taken.

The patients who are confirmed by ultrasonography (USG) examination were evaluated for CBC, renal function test, liver function test, sociological findings of only gall stones, gall stones with pancreatitis, gall stones with cholecystitis, gall stones with CBD stones, size of the calculi, whether solitary or multiple, anatomical variations. In addition radiological investigations, including an X-ray Chest PA view. Following evaluation, the patients were subjected to laparoscopic cholecystectomy or open cholecystectomy. Postoperatively patients were studied for the duration of pain, time of the start of oral intake, and duration of hospital stay between open and laparoscopic cholecystectomy, Post-operative follow up was done regularly, and necessary interventions were done for the complications that occurred in some patients.

Histopathological study of the specimens were done, and the results were documented. Regular follow up of the patients were done even after discharge. Descriptive statistics were used for the analysis of results.

Results

This present study included 65 patients based on the inclusion criteria . The mean age of patients with gallstones was 45years, and more than half of the cases (53%) were found to belong to the 4th and 5th decades of life (Figure 1). It is seen that out of 65 patients , 24 were males and the rest 41 females , which indicates that cholelithiasis is predominant in the female population (Figure 2)

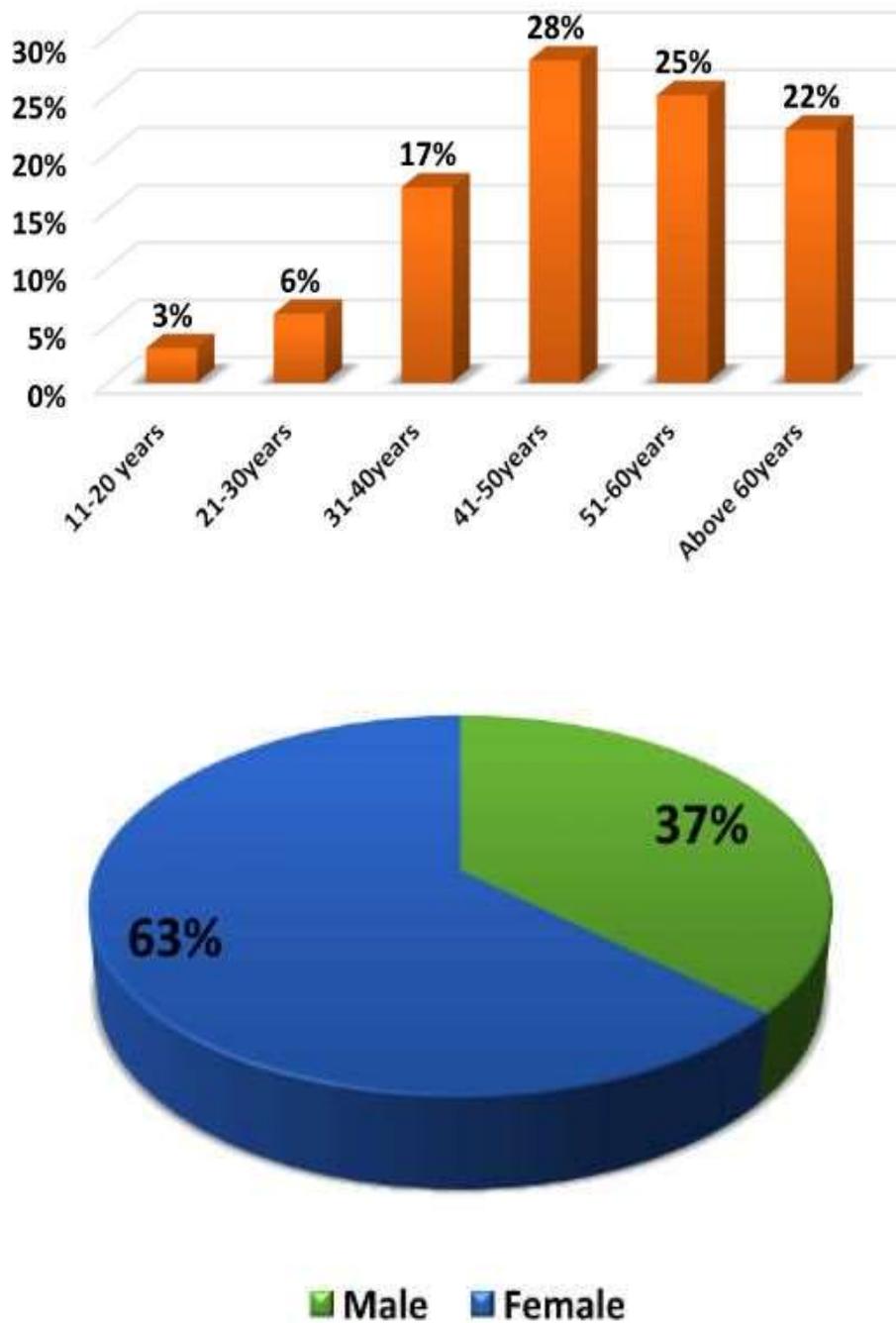


Figure 2 Gender Distribution of patients

Comparing the mean age concerning gender, the mean age was 45.3 years in females and 43.5 years in males. The difference was statistically insignificant, though it appeared to be more in the older female population.

Out of 65 patients, 36(55%) patients had mixed stones, 21(32%) pigment stones,

and 08(12%) had cholesterol stones, where the type of stones was grouped based on external appearance (Figure3).

The current study observed that cholelithiasis was more common in patients with mixed diets (39 patients) than vegetarian diet (26 patients).

When we analyzed for clinical presentations of the patients, it showed that 42 patients (65%) came with chronic upper abdominal pain, and 23 patients (35%) came with acute upper abdominal pain. Few patients presented with other symptoms liked dyspepsia, flatulence, nausea, vomiting, jaundice and fever. This study used abdominal USG as the primary diagnostic method to confirm calculus cholelithiasis. From the abdominal USG, it is observed that, out of 65

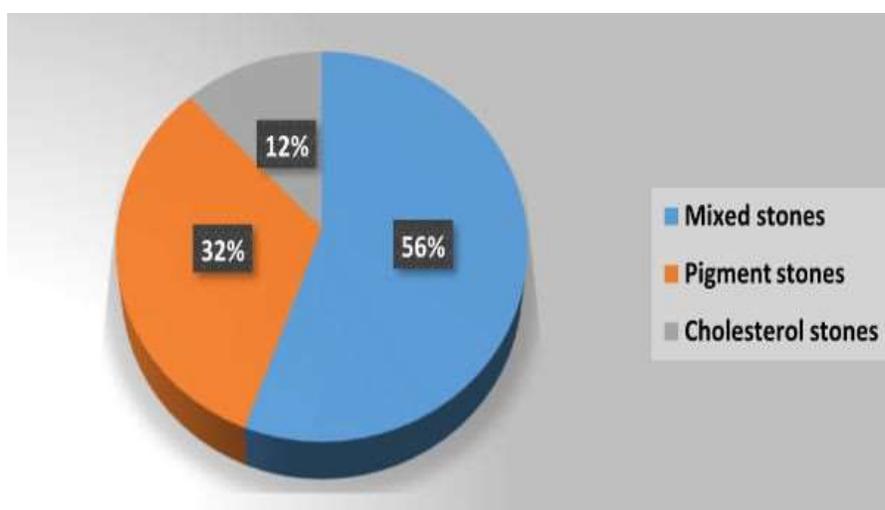


Figure 3 Percentage of types of stones based on external appearance.

Table 1 Drugs used in postoperative management

Antibiotics	Inj. Ceftriaxone 1 gm I.V, BD
	Inj. Amikacin 500mg I.V, BD
	Inj. Piperacillin/tazobactam 4.5gm TID
	Inj. Metronidazole 500mg I.V BD
NSAIDs	Inj. Diclofenac 1 ampule in 100ml NS, I.V, BD
	Inj. Paracetamol 1 ampule in 100ml NS, I.V, BD
Opioid Anal-	Inj. Tramadol 1 ampule in 100 ml NS, I.V, BD
PPIs	Inj. Pantop 40mg I.V, BD
I.V Fluids	RL, DNS, NS, 5% Dextrose

patients, 27(41%) patients had solitary calculus, and 38 (59%) patients had multiple calculi.

In patients with CBD calculi (12patients), initially ERCP (Endoscopic Retrograde Cholangio pancreatography) with stone extraction was done, followed by cholecystectomy. About 53 patients had a laparoscopic cholecystectomy, and 12 underwent open cholecystectomy (Figure 4). After surgery, postoperative supportive care was provided with IV fluids (RL, DNS, NS,5% Dextrose) to maintain hydration and antibiotics such as

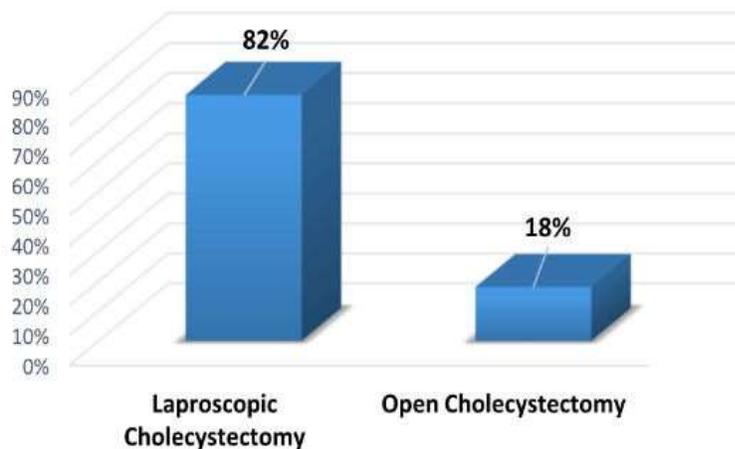


Figure 4 Mode of Surgery

Inj.Ceftriaxone 1gm and Inj.Amikacin 500mg intravenously, twice daily, was given for 5 days to prevent sepsis and wound infection. The selected antimicrobial agent would cover the most common pathogens like gram negative rods, anaerobes and Enterobacteriaceae strains.

Post operative pain was managed with Inj. Diclofenac or Inj. Paracetamol or

Inj. Tramadol intramuscularly (IM) or Intravenously (IV) in 100ml NS, twice daily and Inj. Pantop 40 mg was given IV to prevent drug induced nausea and gastritis. Patients with acute cholecystitis empirically treatment were given Inj. Piperacillin/ tazobactam 4.5gm TID and Inj. Metronidazole 500mg TID for 5-7 days, followed by laparoscopic cholecystectomy, was done after 45 to 60 days later. Table 1 shows the drugs used in

postoperative management. Five of 65 patients had surgical site infections managed by regular dressings and antibiotics. Four patients had Gall bladder fossa collection, which require USG guided aspiration.

Discussion

In this study, the mean age of patients with gallstones was 45years, and a total of 65 patients, 24 were males, and the rest 41 were females. This observation was nearly similar to a study by M. Krishna Naik et al, where the maximum age incidence was 41-50. And the female : male ratio in their study was 3:1, that is. A total of 100 patients were included in the study, 71(71%) were females, and 29(29%) were males.⁸ This shows an increased incidence of cholelithiasis in females due to risk factors like the use of Oral Contraceptive pills and Hormone Replacement Therapy (HRT).

In our study, out of 65 patients, 36(55%) patients had mixed stones, 21(32%) had pigment stones, and 08(12%) had cholesterol stones. Similar results were seen in a study by Dr Mohanetal. where, out of 50 patients, 90% of patients had mixed types of gallstones, cholesterol gallstones(3) and Pigment gallstones (2),forming a small subset.⁹

In the recent study, 42 patients (65%) with cholelithiasis came with chronic upper abdominal pain, and 23(35%) came with acute upper abdominal pain, comparable to the study by Bagdai Aetal., where the pain (Right Hypochondrium and Epigastrium) was the predominant symptom in their study with 98%.¹⁰ Similar presentations were also observed in older studies done by Alok Sharma.¹¹ In our study, we found that cholelithiasis was more common in patients with mixed diets (39patients) than in vegetarian patients (26 patients).

Recent studies have shown that orphan receptors regulate fatty acid and hepatic cholesterol metabolism, which would suggest the mechanism behind the risk factors like energy intake, cholesterol, fatty acids, fiber, carbohydrates, vitamins and minerals, and alcohol intake.¹³

Management of cholelithiasis in our study included laparoscopic cholecystectomy (53patients) and open cholecystectomy (12patients). In contrast, in a study by Mohan C Petal., 39 patients were managed with open cholecystectomy, and 11 were managed with laparoscopic cholecystectomy.⁹ Laparoscopic cholecystectomy has become the gold standard in treating cholelithiasis and is replacing open cholecystectomy. Laparoscopic cholecystectomy has few advantages over open cholecystectomies, such as the formerly return of normal bowel functions, minimal post operative pain , minimal scar formation, reduced duration of hospitalization, improved quality of life with full activity, and decreased financial burden on family and society.¹⁴

Conclusion

The present study shows that the mean age group of patients was 45 years, and the incidence rate was more common in female patients with a mean age of 45.3 years. It is also observed that mixed types of multiple stones were more commonly seen. A significant association was seen with patients who are on a mixed diet. Upper abdominal pain was the primary presentation seen in all patients, associated with dyspepsia, nausea, vomiting and fever in a few patients. As laparoscopic cholecystectomy is considered the gold standard technique, 83% of patients underwent the same surgery with minimal postoperative complications compared to open cholecystectomy. Further studies are required in larger populations to determine the prevalence rate and mode of management in patients with cholelithiasis.

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Conflict of interest

There are no conflicts of interest .

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