

A Clinical study on Cholelithiasis and its Management

1. **Dr Mahesh Vishnu Ghule**, Assistant professor of surgery Saraswathi institute of medical sciences

2. **Dr Afreen Imran Khan**, Associate professor physiology Narayana Medical college and hospital Sasaram Bihar

Corresponding Author- Dr Mahesh Vishnu Ghule*

Abstract

Background: *The study was conducted to analyze the clinical presentation, incidence and variations of presentation among the various age/sex groups and the various mode of management of Cholelithiasis.*

Methods: *This study was conducted in our hospital in the department of General surgery, from October 2016 to September 2018, among 50 patients who were presented at the hospital with symptoms and signs suggestive of Gallstones and diagnosed by radiological and laboratory evidences as Cholelithiasis. The management of the disease, and postoperative complications and histopathological evaluation of the specimen were done and the results were correlated with various other studies.*

Results: *The most age group affected is between 17 and 79 years. Almost all patients had righthypochondrial pain and dyspepsia. By USG abdomen 100% of the patients confirmed the diagnosis of cholelithiasis. Mean age of the patient was 48 years in our study. Mixed type of gall stones were being the most common. Next in the list being cholesterol stones and pigment stones follow them. 52% of the patients were female. All the 50 patients were treated surgically, 39 open cholecystectomy and 11 laparoscopy cholecystectomy. All 50 gall bladders sent for HPE, out of which 49 reported as chronic cholecystitis and 1 reported as adenocarcinoma.*

Conclusion: *Cholelithiasis is most commonly found as incidental finding in USG especially in 4th or 5th decade of age. Among the symptomatic patients, after confirmation with USG, surgery was planned. Laparoscopic Cholecystectomy is the management of choice.*

Keywords: *Cholelithiasis, Cholecystectomy, Gallstones, Laparoscopy.*

Introduction

Cholelithiasis are one of the most common medical problems leading to surgical intervention throughout the world, at least 10% of the adults have gallstones with a recent rise in incidence due to westernization of diet, also the incidence of gall stones increases with age and an estimated 20% of adults over 40 yrs of age and 30% of those over 70 yrs have biliary calculi.

Gallstones develop insidiously, and they may remain asymptomatic for decades. Complications of gall stones include acute and chronic cholecystitis, choledocholithiasis, cholangitis, pancreatitis, gallstone ileus, empyema of gallbladder, mucocoele, perforation and rarely obstruction of the biliary tree by its external compression of a large gallstone within the gallbladder (Mirizzi syndrome).

Susruta, the "Father of Indian Surgery" compiled the surgical knowledge of his time in his book "Susruta Samhita". In that described a jaundice called Pittaashmarjanya meaning a

jaundice caused by stone in bile ^[1-8].

There is limited information on the prevalence of biliary tract disease in developing countries and it is not known whether biliary tract disease is less frequent or more likely to be asymptomatic. Prevalence of cholelithiasis is higher in northern India as compared to south Indian population^[9-15]. Diagnosis of Cholelithiasis is made by proper clinical history and examination along with appropriate blood and radiological investigation which includes mainly Ultrasonogram and Computed tomogram. There is a recent change in trend of prevalence and presentation of gallstones in India. Hence, this study can provide the information regarding the prevalence of the disease, various clinical presentation and management, and outcomes of the cholelithiasis.

Materials and Methods

This study was conducted in our hospital in the department of General surgery, from October 2016 to September 2018. Among patients who were presented at the hospital with symptoms and signs suggestive of Gallstones, thorough clinical history was taken and examination was done. Among those patients, 50 were chosen for the study. The patients less than 12 years were excluded. Routine blood investigations including haemogram, liver function tests, lipid profile and renal function tests were done. Radiological investigations including X-ray Chest PA view, X-ray erect abdomen, USG and CT were done appropriately. Proper documentation of their clinical, biochemical and radiological evidence of presence of gallstone disease was maintained.

The patients were assessed and all of them were posted for surgery. Some patients underwent Laparoscopic cholecystectomy and rest underwent Open Cholecystectomy. Tube drains were placed for the patients who went through open cholecystectomy and managed appropriately. Post-operative follow up was done regularly and necessary interventions were done for the complications that occurred in some patients. Histopathological analysis of the specimen was done and the results were documented. Chemical analysis of the gallstones was also done. Regular follow up of the patients was done even after discharge.

Results and Discussions

In the past, a lot of study had been conducted to relate between gallstone disease with age and gender. This study was an effort to establish a relation between the types of gallstones formation in gallstone disease with various clinical presentations and different diagnostic modalities and the changes taken place in the gall bladder by examining histopathology.

Age Incidence

This study has age ranging from 17 to 79 years with mean age 48 years being 20 (± 15.21). Most of patients with gallstone disease (26%) belong to above 60 yrs age group (Table 1). Studies of Herman et al, Hanif Ganey et al, Moreaux et al and Jayanthi V series conclude that the highest incidence of gallstone disease were in the 5th decade of life. But Studies of P. Chandran and Gallstone disease in rural Bangladesh Community showed a peak incidence of gallstone disease in 4th and 5th decade of life. Never the less, most of the studies still conclude gallstone disease being high in 5th decade of life^[16].

Distribution of Type of Gallstone to Age

Mixed type of gallstones being the most common, it is still the highest in incidence in the

peak age group suffering from gallstone disease. The next in the list being cholesterol stones and pigment stone follow them. Though the cholesterol stones were seen more commonly in 3rd decade age group, mixed type of stones were still the most common gallstone irrespective any age group.

Gender Incidence

In studies of Battacharya's 71.4% were female, 28.6% were male, A.P Tamhanker and Major Alok Sharma et al showed a high incidence in female gender. So does our study, it too had gallstone disease being more common in female gender, 52%. Whereas male gender suffers less with gallstone disease (48%)

Distribution of type of stone according to gender
The present study was to correlate the type of gallstone with gender factor, mixed gallstone being more common irrespective of gender. The incidence of type of gall stones to the gender does not show any correlation with respect to the number of male and female patients suffering from gallstone disease.

Clinical Presentation

Out of 50 patients almost 66% presented with dyspepsia and 64% had right hypochondrial pain. Out of which 14% patients presented with fever. So 4% of the patient present with all three symptoms. Then 40% was with only dyspepsia and right hypochondrial pain. 10% of the patients have no symptoms at all (Table 2).

Table 2: Clinical presentation

Symptoms	Number of Patients	%
Dyspepsia	33	66.0
Pain	31	62.0
Fever	7	14.0

Type of Stones

Out of 50 patients 90% of patients had Mixed type of gallstones. Cholesterol gallstones and Pigment gall stones forming a small subset. (Table 3)

Table 3: Type of Stones

Type of Stone	Number of Patients	%
Cholesterol	3	6.0
Mixed	45	90.0
Pigment	2	4.0

Diagnostic Modality

We did USG abdomen for all the patients. The diagnosis confirmed by USG was 100% for the cholelithiasis. So we have not done CT abdomen. According to Sabiston's textbook of general surgery 19th edition^[75] 85% of USG are sensitive and 95% are specific for cholelithiasis.

Management

As the 45 patient were symptomatic we managed surgically i.e., elective cholecystectomy. Rest of the people had minimal symptoms. Hence they were also planned for surgery. Out of 50 patients, 11 underwent laparoscopic cholecystectomy and 39 underwent open cholecystectomy of which, in

8 patients, laparoscopic cholecystectomy was converted to open cholecystectomy (Table 4). At least 6 patients presented with acute calculus cholecystitis. We managed them conservatively then taken for surgery after 6 weeks.

Table 4: Mode of Surgery

Mode of Surgery	Number of Patients	%
Laparoscopic Cholecystectomy	11	22.0
Open Cholecystectomy	39	78.0

Complications

Nearly all the patients have normal post-operative period. 6% of the patients had vomiting and 4% of the patients had pain for longer duration as the post-operative complications. Post-operative diarrhea was noted in 1 patient (Table 5).

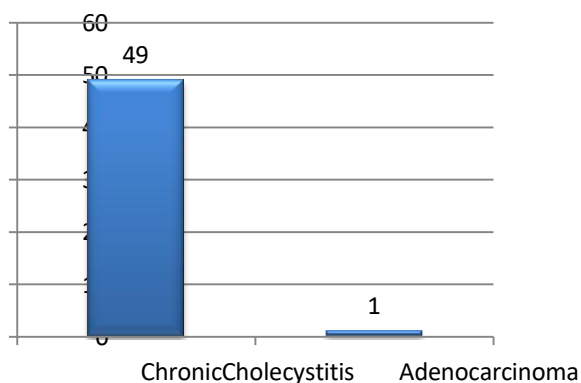
Table 5: Post-operative Complication

Complication	Number of Patients	%
Vomiting	3	6.0
Pain	2	4.0
None	45	90.0

Histopathology Report

In the present study, 49 patients were reported as having chronic cholecystitis, 1 patient had GB carcinoma (Graph 2).

Graph 2: Histopathological result of gall bladder



Conclusion

- The most age group affected is between 17 to 79 years.
- Almost all patients had right hypochondrial pain and dyspepsia. Out of 50 patients 40%

had hypochondrial pain and dyspepsia, only 4% had hypochondrial pain, dyspepsia and fever.

- Female sex had higher incidence of gallstones.
- Gender and sex had no relationship with the occurrence of gallstones.
- By USG abdomen 100% of the patients confirmed the diagnosis of cholelithiasis.
- Mean age of the patient was 48 years in our study.

Mixed type of gall stones were being the most common. Next in the list being cholesterol stones and pigment stones follow them. Cholesterol stones were seen more commonly in 3rd decade of age group.

- Out of 50 patients, 52% were female and 48% were male according to our study. Mixed gall stones being more common irrespective of gender. The incidence of type of gall stones to the gender does not show any correlation.
- All the 50 patients were treated surgically, 39 open cholecystectomy and 11 laparoscopy cholecystectomy.
- There were no major post-operative complications except in 2 patients developed pain and 3 vomited.
- All 50 gall bladders sent for histopathological examination, out of which 49 reported as chronic cholecystitis and 1 reported as adenocarcinoma.

This study provides a platform for further studies with more variables, individual constituents of diet and their prediction for gallstones and their types in a large population including study on both symptomatic and asymptomatic gallstone disease. This will help in preventing the occurrence of gallstones in population and complications associated with it.

Source: None

Reference

1. Park K, editor. Man and medicine towards health for all. Park's Text book of Preventive and Social Medicine. 17th ed. Jabalpur: Banarasi Das; 2002. P 1-10
2. Tandon RK. Diseases of gallbladder and biliary tract. In: Shah SN, editor. API Textbook of Medicine. 7th ed. Mumbai: Association of Physicians of India; 2003. p. 642-4
3. Saunders KD, Cates JA, Roslyn JJ. Pathogenesis of gallstones. Surg Clin North Am 1990;70:1197-216. Karan JA, Rose GJ. Cholelithiasis and cholecystectomy. In: Zynnel MJ, Schwartz SI, editor. Maingot's Abdominal Operations. 10th ed., Vol. 2. New York: Harold Ellis; 2001. p. 1717-38.
4. Blumgart LH. Gallstones and gallbladder. In: Blumgart LH, Fong Y, editors. Text Book of Surgery of Liver and Biliary Tract. Vol. 1. London: Harcourt Publishers; 2002. p. 617-791.
5. Talamini MA, Gadacz TR. Gallstone dissolution. Surg Clin North Am 1990;70:1217-30.
6. Bannister LH, editor. Bile duct and gallbladder. Gray's Anatomy. 38th ed. Boca

- Raton: Martin Berry; 2000. p. 1809- 12.
7. Oddsdottir M, Hunter JG. Gallbladder and extra biliary system. In: Brunickardi FC, editor. Schwartz's Principles of Surgery. 8th ed. McGraw-Hill Publication; 2005. p. 1187-221.
 8. Gordon KC. A comparative anatomical study of the distribution of the cystic artery in man and other species. J Anat 1967;101:351-359.
 9. Mincsev M. Bilocular gallbladder. Orvoskepzes 1967;42:286-98.
 10. McSherry CK. Cholecystectomy: The gold standard. Am J Surg 1989;158:174-8.
 11. Morgenstern L, Wong L, Berci G. Twelve hundred open cholecystectomies before the laparoscopic era. A standard for comparison. Arch Surg 1992;127:400-
 12. Besen EA, Page RE. A practical reappraisal of the anatomy of the extrahepatic bile ducts and arteries. Br J Surg Endosc 1995;1081-4.
 13. Rocko JM, Swan KG, Di Gioia JM. Calots triangle revisited. Surg Gynecol Obstet 1981;153:410.
 14. Specint MJ. Calots triangle. JAMA 1967;200:1186.

