

Incidence of choledocholithiasis in gallstone disease in eastern zone of India: A single centre study

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ABSTRACT

Background: Common bile duct stones are found in 10-15% of patients having gall stone disease and the incidence increases with the age, both in India and in western countries and the majority of common bile duct stones are secondary to gall bladder stones, their incidence is more in Northern India.

Objective: To study the incidence of common bile duct stone in patients having gall stone disease in tertiary care hospital.

Methods: This was a cross sectional study of 125 patients admitted in different wards of the department of surgery on the basis of symptoms and signs of gall stone disease and latter on trans-abdominal ultrasound and MRCP confirmed that 18.4% of total patients having also choledocholithiasis.

Result: Incidence of choledocholithiasis was 18.4% in patients having gall stone disease. It was 3 times more common in females. Maximum incidence 35% in between 40-49 years, obese (52%) and middle socio-economic group (74%).

Conclusion: Incidence of choledocholithiasis is in increasing trend and is more common in females in between 40-49 years age group. Obesity is the commonest risk factor.

Keywords: Choledocholithiasis, common bile duct stone, gall bladder stone, incidence

Introduction

The incidence of gallstone disease has been increased significantly worldwide [1] including India. The vast majority of common bile duct stones are formed within the gall bladder and migrate down the cystic duct into the common bile duct as secondary stones in western countries [2] as well as in India. These stones are usually cholesterol stones. [2] Common bile duct stones are found in 10-15% of patients having gallstone disease. [3] Factors associated with cholesterol stones include nutrition, obesity, increasing age, female sex, parity etc. [3] Secondary choledocholithiasis may be asymptomatic or symptoms similar to those seen with gallstone disease [4]. The aim of study was to find out the incidence of common bile duct stones in patients admitted with the symptoms and signs of gallstone disease in the department of surgery at Rajendra Institute of Medical Sciences, Ranchi.

Material and methods

This was a cross sectional study, which was conducted during the period of October 2012 to

January 2014, in different surgical wards at Rajendra Institute of Medical Sciences, Ranchi. One hundred twenty five (125) patients were selected for the study and were admitted with the features of gallstone disease. Written consent taken from all patients selected for study. The diagnosis was made on the basis of detailed history, physical examinations, trans-abdominal ultrasonography, MRCP, liver function tests and other required investigations. Operative findings along with any complications were also recorded. Patients were followed-up on out-patient basis for the period of one year for any complications.

Results

Total 125 patients were taken for this study. Out of which 102(81.6%) have only cholelithiasis, 23(18.4%) have both cholelithiasis and choledocholithiasis. Out of those 23 patients who have both cholelithiasis and choledocholithiasis, 17(74%) were female, 6(26%) were male, with male to female ratio 1:2.83. The maximum incidence of cholelithiasis with choledocholithiasis was found in between 40-49

years of age, 8(34.78%)(Table 2), obese, 12(52.17%), middle income group, 17(73.9%). All 17 female patients having both cholelithiasis and choledocholithiasis were multiparous. Alcohol addiction was found in 2(8.6%) patients having both the diseases.

The most common presenting complains in patients having both cholelithiasis and choledocholithiasis were epigastric/right hypochondrial pain in 23(100%), nausea/vomiting in 23(100%) patients. Scleral icterus was found in 17(74%), high coloured urine in 17(74%), pruritus in 3(13%), steatorrhea in 12(52%) patients. As for clinical signs all 23(100%) patients have tenderness in epigastrium/right hypochondrium and jaundice (Table3). Trans-abdominal ultrasonography and MRCP has been done in all 125 patients, out of which 23(18.4%) were found to have both cholelithiasis and choledocholithiasis.

Table 1: Incidence of Choledocholithiasis

Disease	N	%
Only Cholelithiasis	102	81.6%
Cholelithiasis +Choledocholithiasis	23	18.4%

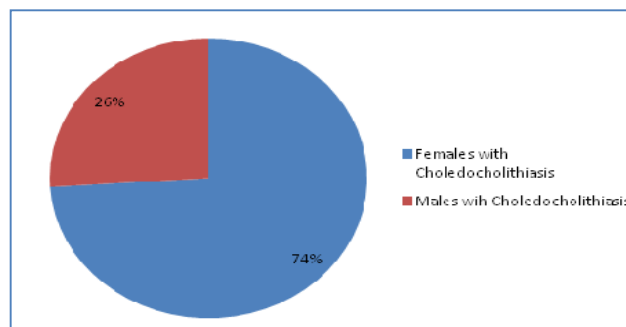


Fig.1 Gender distribution

Table 2: Age distribution

Age group (in years)	Total no. of patients (125)	Percentage (%)	No. of patients with choledocholithiasis(23)	Percentage (%)
10-19	7	5.6%	0	0%
20-29	23	18.4%	3	13%
30-39	24	19.2%	3	13%
40-49	36	28.8%	8	34.78%
50-59	18	14.4%	4	17.4%
60 and above	17	13.6%	5	21.7%

Table 3: Frequency and distribution of symptoms and signs of choledocholithiasis

Symptoms	Frequency	Percentage(%)
Epigastric/right hypochondriac pain	23	100
Nausea/vomiting	23	100
Sclera icterus	17	74
Fever	0	0
High coloured urine	17	74
Pruritus	3	13
Steatorrhea	12	52
Signs		
Tenderness in epigastrium/right hypochondrium	15	65
Jaundice	17	74



Fig. 1 MRCP showing stones in gallbladder and CBD



Fig. 2 Post-operative T-tube cholangiogram

Discussion

Worldwide, the incidence of gallstone disease has been increased. [1] According to Schwartz's Principles of Surgery, gallstone disease is three times more common in women than men. [2] thus choledocholithiasis is also common in women. In our study also choledocholithiasis is 2.8 times more common in women than men. The vast majority of ductal stones are secondary to gallstones which migrate down the cystic duct to the common bile duct. [2] Common bile duct stones are found in 10-15% of patients having cholelithiasis. [3] In present study it's incidence is 18.4%. Obesity, parity, nutritional factors etc are other risk factors associated with choledocholithiasis. [3] In our study also majority of patients are obese, fertile, from middle socio-economic class. Only two patients with choledocholithiasis are addicted to alcohol. Secondary choledocholithiasis may be asymptomatic or associated with symptoms similar to those seen with gallstone disease. [4] In our study epigastric/right hypochondrial pain, nausea/vomiting found in 100%, sclera icterus in 74%, high coloured urine in 74%, steatorrhea in

52%, pruritus in 13% patients having choledocholithiasis with cholelithiasis. Common bile duct stones continue to pose a significant problem both to the patient and the surgeon. [5] According to Maingot's Abdominal operations and study by Rosenthal RJ et al, the incidence of common bile duct stones increases with age and duration of disease. [6,3] Present study also shows that there is no any case of choledocholithiasis below the age of 20 years with maximum incidence in between 40-49 years of age.

Although primary choledocholithiasis is more common in Asian populations, [9] in present study all the patients with choledocholithiasis also having cholelithiasis. Worldwide, there is increase in incidence of gallstone disease, the incidence of its association with bile duct stone also increased. [12] Present study shows that all the cases of choledocholithiasis are secondary to gall stone disease. Incidence of choledocholithiasis is in increasing trend. It is three times more common in females than males. The age group most commonly affected is in between 40-49 years. Multiparous females are commonly affected. Obesity is one of the strongest risk factor.

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