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Original Article

Prevalence and management of cholelithiasis: A clinical study

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Abstract
Background: Cholelithiasis is a chronic recurrent disease of the hepatobiliary system. The present study determined cases of gall bladder stones.
Materials & Methods: This study was conducted on 75 consecutive cases of cholelithiasis. All patients received antibiotics and routine post- operative care. Patient was properly examined in the postoperative period to note the development in any complication. Patients who undergone lap cholecystectomy were discharged on the third day and open cholecystectomy were discharged on the 7th day, Unless any complications. Patients were advised regarding diet, rest and to visit the surgical OPD for regular follow up.
Results: Maximum cases was seen in age group 41-50 years (25) followed by 51-60 years (20). Out of 75 patients, males were 35 and females were 40. Common symptoms was pain in 70, nausea/ vomiting in 35, jaundice in 10 and dyspepsia in 20 patients. USG findings was solitary stone in 20, multiple stones in 60, bile duct stones in 12, thickening of gall bladder in 62, dilated bile duct in 13 and mass in 4 patients. 60 patients undergone laparoscopic cholecystectomy and 15 patients undergone open cholecystectomy. 6 patients had wound infection. 1 patient had post operative bile leak which was managed conservatively and patient recovered. 3 patients had bile duct injury which were repaired on the T-tube.
Conclusion: Authors found that the incidence of gallstones was the highest in the 5th and 6th decades of the life with maximum incidence in the 5th decade. Gallstones disease is more common in female. The commonest symptom was pain abdomen and the commonest sign was tenderness in the right hypochondrium. Ultrasonography was the investigation of the choice. It showed multiple gallstones and thickening of the gallbladder in the majority of cases.

Keywords: cholelithiasis, cholecystectomy, gallstones, laparoscopy

Introduction

The prevalence of gallbladder stone varies widely in different parts of the world. In India it is estimated to be around 4%. An epidemiological study restricted to rail road workers showed that north Indians have 7 times higher occurrence of gall stone as compared with south Indians. There has been a marked increase in the incidence of the gall stone in the west during the past century. In the United States the autopsy series have shown gall stones in at least 20% of women and 8% of men over the age of 40 years [1]

It is estimated that at least 20 million persons in the United States have gall stones and that approximately 1 million new cases of cholelithiasis develop each year. Prevalence in Europe is 18.5% from the autopsy studies with the lowest prevalence from Ireland and the highest from Sweden [2] In Australia the prevalence rate varies from 15% to 25%. Highest prevalence in pima Indian tribe of Arizona with total and female prevalence of 49% and 73% respectively. Gall stones are rare in Africa with prevalence of less than 1% and in Japan it has been increased from 2% to 7%. Diagnosis of gall stone is by proper history and physical examination [3]

Changing incidence in India is mainly attributed to westernization and availability of investigation that is ultrasound to urban as well as rural area and also because of increase affordability due to change in the socio-economic structure and the cost of investigations [4]

Because of increase incidence of gall stones and its variable presentations in India as well as in the west, there is a great need for a study which can provide the information regarding the prevalence of the disease, various clinical presentation and management, outcomes of the cholelithiasis combining it with appropriate investigation which varies from surgeon to

surgeon [5] The present study determined cases of gall bladder stones.

Materials & Methods

This study was conducted in general surgery department in which 75 consecutive cases were admitted, examined, investigated and operated during the period of June 2011 to April 2013. Detailed history of all the 75 cases were taken according to the proforma approved by the guide. Information regarding the age, religion, socio economic status, nature of the symptoms, duration of the symptoms, past history of similar complaints, diet history, history of OCP, Alcohol ingestion, diabetes was obtained. All patients' undergone detailed examination, all patients had haemogram, ECG, LFT, blood sugar, blood urea, serum creatinine, urine analysis, blood group, chest x-ray, ultrasound scan of the abdomen. Relevant investigations and specialty consultations were taken for patients with associated medical illness and their control was achieved.

Risk and complications of the condition as well as surgery has been explained to the patients, consent was taken. The gallstones was sent for chemical analysis and the gallbladder for histopathological examination. All patients received antibiotics and routine post- operative care. Patient was properly examined in the postoperative period to note the development in any complication. Patients who undergone lap cholecystectomy were discharged on the third day and open cholecystectomy were discharged on the 7th day, Unless any complications. Patients were advised regarding diet, rest and to visit the surgical OPD for regular follow up. In the follow up period attention were given to subject to improvement of the patients with regard to symptoms as well as examination of the operative scar. Results were analyzed statistically. P value less than 0.05 was considered significant.

Results

Table 1: Age wise distribution

Age (in yrs)	No of cases	%
11-20	1	1.3
21-30	9	12
31-40	10	13.3
41-50	25	33.3
51-60	20	26
>60	10	13.3

Table I shows that maximum cases was seen in age group 41-50 years (25) followed by 51-60 years (20).

Table 2: Gender wise distribution

Sex	No of cases	%
Male	35	46.6
Female	40	53.3

Table II shows that out of 75 patients, males were 35 and females were 40.

Table 3: Presenting symptoms

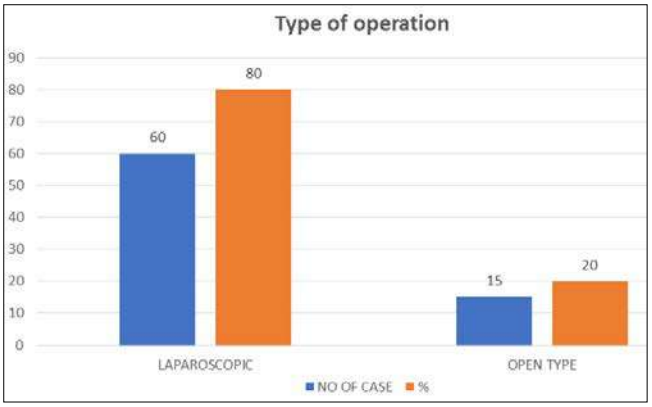
Symptoms	No of cases	%
Pain	70	93.3
Nausea/voniting	35	46.6
Jaundice	10	13.3
Dyspepsia	20	26.6
Fever	7	9.33

Table III shows that common symptoms was pain in 70, nausea/ vomiting in 35, jaundice in 10 and dyspepsia in 20 patients.

Table 4: Ultrasound findings

Finding	No of cases	%
Solitary stone	20	26.6
Multiple stones	60	80
Bile duct stones	12	16
Thickening of gall bladder	62	82.6
Dilated bile duct	13	17.3
Mass	4	5.33

Table IV shows that USG findings was solitary stone in 20, multiple stones in 60, bile duct stones in 12, thickening of gall bladder in 62, dilated bile duct in 13 and mass in 4 patients.



Graph 1: Type of operation

Graph I shows that 60 patients undergone laparoscopic cholecystectomy and 15 patients undergone open cholecystectomy.

Table 5: Post operative complications

Complications	Laparoscopic	Open type	Total
Wound infection	2	4	6
Haemorrhage	0	0	0
Retained stone	0	0	0
Bile leak	1	0	1
Prolonged ileus	0	0	0
Total	3	4	7

Table V shows that 6 patients had wound infection. 1 patient had post operative bile leak which was managed conservatively and patient recovered. 3 patients had bile duct injury which were repaired on the T-tube.

Discussion

Gallstones are a major cause of morbidity and mortality throughout the world. In the United States alone, the diagnosis and treatment of gallstone disease accounted for more than $5 billion in direct costs, including a half million cholecystectomies. At least 10 % of adults have gallstones. The prevalence varies with age, sex, and ethnic group [6] There is an increasing prevalence with age, after the age of 60 about 10 to 15 percent of men and 20 to 40 percent of women have gallstones. In a recent ultrasound survey in Denmark, a large population was reexamined at five-year intervals. In each five-year period, new gallstones formed in about 3 percent of the population over the age of 40. There is a incidence of 25% of children with gallstones have hemolytic disease other possible

predisposing factors are cystic fibrosis, liver disease, bowel resection and heart disease [7].

The overall prevalence of gallstone disease in industrialized countries appears to be between 10% to 20%. Ultrasound surveys show a female: male ratio of about 2:1 in the younger age groups and the risk of gallstones is also associated with a history of childbearing, estrogen-replacement therapy, and oral-contraceptive use, but not diabetes mellitus. The prevalence of gallstones is especially high in the Scandinavian countries and Chile. North Indians have 7 times higher occurrence of gall stone as compared with south Indians and among Native Americans Mexican Americans and American Indians, especially the Pima tribe, have an increased predisposition to gallstone formation [8]. Obesity is higher in markedly obese persons and in those who lose weight rapidly. There is little agreement about the effect of dietary components on the risk of gallstones. Fasting is normally associated with an increased biliary cholesterol saturation and this phenomenon persists or even become more accentuated in obesity. A large clinical study showed that being even moderately overweight increases the risk for developing gallstones. Obesity also reduces gallbladder emptying [9].

Excess estrogen from pregnancy, hormone replacement therapy, or birth control pills appears to increase cholesterol levels in bile and decrease gallbladder movement, both of which can lead to gallstones. Drugs that lower cholesterol levels in the blood actually increase the amount of cholesterol secreted in bile. This in turn can increase the risk of cholesterol gallstones. Clofibrate increases biliary cholesterol and results in formation of the gall stone. Patients who are taking clofibrates are at an increase risk for cholecystectomy. As the body metabolizes fat during rapid weight loss, it causes the liver to secrete extra cholesterol into the bile, which can cause gallstones [10]. The present study determined cases of gall bladder stones.

In this study, maximum cases was seen in age group 41-50 years (25) followed by 51-60 years (20). Out of 75 patients, males were 35 and females were 40. Rai *et al.* [11] studied the incidence of common bile duct stone in patients having gall stone disease in tertiary care hospital 125 patients. On the basis of symptoms and signs of gall stone disease and later on trans-abdominal ultrasound and MRCP confirmed that 18.4% of total patients having also choledocholithiasis. 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%). 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.

We found that common symptoms was pain in 70, nausea/ vomiting in 35, jaundice in 10 and dyspepsia in 20 patients. USG findings was solitary stone in 20, multiple stones in 60, bile duct stones in 12, thickening of gall bladder in 62, dilated bile duct in 13 and mass in 4 patients. Gill *et al.* [12] evaluated the incidence of choledocholitiasis in patients submitted to the laparoscopic cholecystectomy, carriers of acute and chronic calculous cholecystitis. The study was carried out in a group of 946 patients subdivided in group A of 1991 - 1995 and group B of 732 patients of 1999 - 2007 submitted to the cholecystectomy by the laparoscope method. The diagnostic criterion of choledocholithiasis was established by cholangiofluroscopy of routine in all surgeries. The total incidence of choledocholithiasis in the group A - 9,8%, and in the group B - 5,8% doesn't show difference significant statistics between itself and with the world-wide literature (p=0,08). In the patients operated for acute cholecystitis difference statistics was not also observed between group A and B in the incidence of lithiasis of the biliary duct (p=0,8). The analysis of the data in operated patients for chronic cholecystitis discloses a smaller tax of choledocholitiasis in group B of 3,7% with significant statistics in the group A of 8,4% p=0,03.

We found that 60 patients undergone laparoscopic cholecystectomy and 15 patients undergone open cholecystectomy. 6 patients had wound infection. 1 patient had post operative bile leak which was managed conservatively and patient recovered. 3 patients had bile duct injury which were repaired on the T-tube.

The shortcoming of the study is small sample size.

Conclusion

Authors found that the incidence of gallstones was the highest in the 5th and 6th decades of the life with maximum incidence in the 5th decade. Gallstones disease is more common in female. The commonest symptom was pain abdomen and the commonest sign was tenderness in the right hypochondrium. Ultrasonography was the investigation of the choice. It showed multiple gallstones and thickening of the gallbladder in the majority of cases.

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