



ORIGINAL RESEARCH PAPER

General Surgery

STUDY ON CLINICOPATHOLOGY AND MANAGEMENT OF EXTRA HEPATIC BILIARY CALCULI

KEY WORDS: GB Calculi, CBD Calculi, Mixed Stones, Multiple Stones, E.coli.

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ABSTRACT

Introduction: Gallstone disease is the commonest disease involving biliary tract and is associated with significant morbidity and mortality so in this study we evaluated the age, sex incidence, most common etiological factors for extra – hepatic biliary calculi, illustrated the varying clinical presentations, studied the various modes of management adopted in our institution.

Material and methods: This study was conducted in NRI medical college, Department of General surgery and Gastroenterology between August 2014 to August 2016. Patients admitted in various surgical units of our hospital were studied. A total of 60 patients were studied. A detailed history including dietary factors, life style habits, were elicited in all patients and thorough clinical examination was done in them. Various modalities of Investigations and treatment were carried out and analysis of the collected data was done.

Results: 60 i.e.0.4% of patients who were admitted under general surgery and surgical gastroenterology were studied. These 60 patients ranged between 16 and 62 years of age. The mean age was 45 years. The maximum number of cases occurred in the fourth and fifth decades. The female to male ratio was 3.6: 1. Abdominal pain, which was localized to right Hypochondrium was the major presenting symptom (90%). Out of 60 cases 51 (85%) of the cases had only GB calculi and 9 (15%) had CBD calculi. Clinical presentation of GB calculi in 51 cases was Acute cholecystitis in 3 (5.9%) cases, Chronic cholecystitis in 48 (94.1%). In patients with GB calculi (51), Various Surgical procedures performed were Emergency laparoscopic cholecystectomy in 3 cases, Elective cholecystectomy in 48 patients of which 39 were laparoscopic and 9 were Open (out of which 5 were lap converted to open). In 9 patients with CBD calculi, surgical procedures performed were (due to no availability of ERCP), Cholecystectomy with T tube drainage in 3 cases, Cholecystectomy with Choledochoduodenostomy in 3 cases, Cholecystectomy with Roux en Y choledochojejunostomy in 3 cases.

Conclusion: Laparoscopic cholecystectomy and open cholecystectomy have their advantages and disadvantages. Surgeon should have sound knowledge of the both ways so as to benefit the mankind in his best possible way.

INTRODUCTION

Gallstone disease is one of the most common problems affecting the digestive tract. Autopsy reports have shown a prevalence of gallstones from 11% to 36%⁽¹⁾. The prevalence of gallstones is related to many factors including age, gender, and ethnic background. Certain conditions predispose to the development of gallstones. Obesity, pregnancy, dietary factors, Crohn's disease, terminal ileal resection, gastric surgery, hereditary spherocytosis, sickle cell disease, and thalassemia are all associated with an increased risk of developing gallstones. Women are three times more likely to develop gallstones than men, and first-degree relatives of patients with gallstones have a twofold greater prevalence⁽¹⁾. Symptomatic gallstone disease may progress to complications related to the gallstone⁽²⁾. Complicated gallstone disease develops in 3% to 5% of symptomatic patients per year. Over a 20-year period, about two thirds of asymptomatic patients with gallstones remain symptom free⁽³⁾. Acute cholecystitis is secondary to gallstones in 90% to 95% of cases. Obstruction of the cystic duct by a gallstone is the initiating event that leads to gallbladder distention, inflammation, and edema of the gallbladder wall. In severe cases, about 5% to 10%, the inflammatory process progresses and leads to ischemia and necrosis of the gallbladder wall. More frequently, the gallstone is dislodged and the inflammation resolves.⁽⁴⁾ About two thirds of patients with gallstone disease present with chronic cholecystitis characterized by recurrent attacks of pain, often inaccurately labelled biliary colic.

AIMS AND OBJECTIVES OF THE STUDY

1. To evaluate the age incidence, the sex incidence, the common etiological and risk factors of gall stones in this region.
2. To illustrate various types of clinical presentation in calculous cholecystitis.
3. To discuss the usefulness of different diagnostic procedures in a case of calculous cholecystitis.
4. To study the various modes of management and their results.
5. To assess the incidence of postoperative complications.
6. To study the histopathological changes in calculous gall bladder diseases

MATERIALS AND METHODS

Sixty patients of clearly documented cases of Gallstone diseases of the Gall bladder and biliary tract admitted in the surgical units and the surgical Gastroenterology unit of NRI medical college & Hospital between August 2015 to July 2017 constitute the material of this study. A detailed History including that about previous treatment was elicited in all patients and thorough clinical examination was done. Relevant preoperative investigations of blood, Urine, Plain X-ray abdomen and USG were done in all cases. The operative findings and postoperative complications were recorded and carefully analysed. Bile was sent for culture and The Gall bladder specimens of all the cholecystectomy cases were sent for Histopathological examination.

INCLUSION CRITERIA

- Patients with clinical features and sonologic evidence of gallstone disease aged above 12 years
- Both males and females

EXCLUSION CRITERIA

- Patients with acalculous cholecystitis.
- Patients who refuse to give consent for inclusion in my study group.
- Patients not fit or willing for surgery.

STATISTICAL ANALYSIS

Microsoft office 2007 was used for the statistical analysis. Descriptive statistics like mean and percentages were used for data interpretation.

RESULTS

- 60 i.e.0.4% of patients who were admitted under general surgery and surgical gastroenterology were studied.
- These 60 patients ranged between 16 and 62 years of age.
- The mean age was 45 years.

The maximum number of cases occurred in the fourth and fifth decades (TABLE 1).

AGE DISTRIBUTION(TABLE1)

AGE	NUMBER	PERCENTAGE (%)
12-20	2	3.3
21-30	9	15
31-40	11	18.3
41-50	22	36.6
51-60	13	21.6
>60	3	5

The female to male ratio was 3.6: 1

- Abdominal pain, which was localized to right Hypochondrium was the major presenting symptom (90%).
- Out of 60 cases 51 (85%) of the cases had only GB calculi and 9 (15%) had CBD calculi.
- Clinical presentation of GB calculi in 51 cases was Acute cholecystitis in 3 (5.9%)cases, Chronic cholecystitis in 48 (94.1%)
- Clinical presentation of CBD calculi in 9 cases was Obstructive jaundice in 5 (55.5%), Cholangitis in 2 (22.2%) and Pancreatitis in 2 (22.2%) patients.
- Accuracy of preoperative ultrasound was 100% in this study.
- In patients with GB calculi (51), Various Surgical procedures performed were Emergency laparoscopic cholecystectomy in 3 cases, Elective cholecystectomy in 48 patients of which 39 were laparoscopic and 9 were Open (out of which 5 were lap converted to open).
- In 9 patients with CBD calculi, surgical procedures performed were (due to no availability of ERCP), Cholecystectomy with T tube drainage in 3 cases, Cholecystectomy with Choledochoduodenostomy in 3 cases, Cholecystectomy with Roux en Y choledochojejunostomy in 3 cases.
- Multiple stones were more common than single stone.
- Out of the 60 cases, 20 (33.3%) had single stone and 40 (67.7%) had multiple stones.
- In those with GB calculi 13 (25.4%) had single stone and 38 (74.5%) had Multiple stones
- In those with CBD calculi 3 (33.3%) had single stone and 6 (66.6%) had multiple stones.
- E Coli positivity in 12 cases out of 19 positive cases (63.1%) Klebsiella in 4 cases (21%) and Others 3 cases (15.8%).
- Gall bladder specimen was sent for Histopathological examination in all 60 cases.
- It showed Acute cholecystitis in 3 (5%) cases, Chronic cholecystitis in 57 (95%) cases and there was no evidence of malignancy.
- Mean hospital stay for Open cholecystectomy was 6 days, 3 days for Laparoscopic cholecystectomy and 10 days for Open CBD exploration.
- Complications include Postoperative biliary leak in 2 cases after open CBD exploration which was of low output type and managed conservatively.
- Wound infection occurred in 6 cases (10%).

DISCUSSION

60 patients with extra hepatic biliary calculi were included in this study, out of which 51 patients (85%) had gallstone and 9 patients (15%) had CBD calculi. The incidence of extrahepatic biliary calculi increases with age, and higher incidence were found in 4th and 5th decade. Maximum incidence in 4th and 5th decades were also observed in Gupta et al (1967)⁷ / Vijaypal et al (1980) / Tyagi et al (1992) series. Varying female preponderance from 2:1 to 4.5:1 has been observed in several studies (Vijaya pal et al., 1980; Gupta, 1967. In our series, there is female preponderance 3.6:1⁶.

Among all patients reported abdominal pain at sometime during the course of illness the location is right hypochondrium⁷ being 90% in our series, which is comparable to 84% in Vijay Pal et al (1980).⁸

Majority of symptomatic gallstone disease patients present as chronic cholecystitis 48 (94.1%). Other presentation being acute cholecystitis in 3(5.9%). Majority of CBD calculi patients presented with Obstructive jaundice 5(55.5%). 2(22.2%) patients presented as gall stone pancreatitis, 2(22.2) patients presented with

cholangitis. The accuracy of Pre – op USG was 100% in our series as compared to Mesherry et al (1989)⁷ 90%, Schwartz et al (1990)⁸ 100%. Majority of cases showed multiple calculi in 40 (67.7%) as compared to Farzaneh et al (2007) (62.5%). Of 60 patients operated in our study cholecystectomy was done in 51 patients.

Emergency cholecystectomy – 3 (features of peritonitis) and Elective cholecystectomy – 48. In 39 Elective cases, laparoscopic cholecystectomy was done. Poor cardio respiratory reserve, previous surgeries and presence of CBD calculus were not taken up for laparoscopic procedure. Out of 9 patients with CBD calculi, T tube drainage – 3 cases, cholecystectomy with Choledochoduodenostomy in 3 cases, cholecystectomy with Roux en Y choledochojejunostomy in another 3 cases¹⁰.

Right flank drain was kept in all cases of CBD exploration. No drains were kept for Open / Laparoscopic cholecystectomy. Post operative course Oral feeds were started on next day of surgery in both laparoscopic cholecystectomy and open cholecystectomy. In case of CBD exploration, oral started once ileus gets relieved.

Bile culture was done in all cases. Positive in 19 cases (31.6%), as compared to Steward et al (56%). Commonest organism isolated being E coli followed by Klebsiella¹¹. In patients with T tube, T tube cholangiogram was done in 2nd week. Normal in all 3 patients, T tube removed during 2nd week. Post operative morbidity was significantly higher in case of Open cholecystectomy when compared to laparoscopic cholecystectomy¹². 4 patients had post operative biliary leak after CBD exploration, presented with bilious fluid in drainage tube, which was of low volume and settled with conservative management. Post operative wound infection was noticed in 6 cases (10%) 4 cases with CBD exploration and 2 cases with open cholecystectomy. Pus let out sent for culture and sensitivity. Managed with appropriate antibiotics. Secondary suturing was done later. No mortality in our series as compared to Mc sherry (1989)¹³ – 0.6 – 4%, Ganey et al (1996) 0.5%, Pappas et al (1990) 0% and Girard et al (2000) 0.3 – 1.6%.¹⁰

Mean hospital stay for open cholecystectomy cases was 6 days, laparoscopic cholecystectomy 3 days CBD exploration 14 days. In our series 83.3% of stones were of mixed type as compared to Ganey et al (70%) and Vijay Pal et al (91.3%)⁷.

CONCLUSION

Patients with gallstones are not a homogenous group. They are now being detected with greater frequencies with advent of USG and CT scan. Medical dissolution of stone theoretical, is not very popular with our hospital patients because of non – availability, laparoscopic cholecystectomy is now replacing open cholecystectomy, with availability of instrument, more of laparoscopic cholecystectomy is being carried out replacing open cholecystectomy. However open cholecystectomy has its own indications. It is therefore necessary that a surgeon should have adequate knowledge and experience in this field. Open CBD exploration is being followed in our institution because of lack of expertise in laparoscopic CBD exploration and non availability of ERCP even though they produce better results

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