

Research Article

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Clinicopathological study of gall bladder disorders

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ABSTRACT

Background: The people of new world are highly susceptible to gall bladder disorder, which include cholelithiasis and its complication and malignancies. Gall bladder and rest of biliary system diseases are known from ancient time. The ladder of development of treatment has shifted from conservative attitude to the most modern intervention by endoscopy and laparoscopy. This study aims to look at the demographics, operative morbidity and pathology of the removed gallbladder in the local population.

Methods: This is a prospective study in which 350 patients presenting with definitive diagnosis of gallbladder disorders or presenting with clinical features suggestive of cholecystitis and later on diagnosed as acute cholecystitis or other gallbladder disorders, were included in the study. Their demographic data, symptomatology and associated illness were documented. In acute condition we followed conservative line of treatment and who are not responding to conservative measure or who were admitted for routine surgery we followed operative measure either laparoscopic or open cholecystectomy, the gallbladder specimen was sent for histopathological examination and bile was sent for bacteriological examination.

Results: The incidence of the gallbladder disorders was 4.23% of the total admission and maximum number of patients recorded in the month of October. The ratio of male: female was 1:4.3 and most of the female were multipara. Maximum number of patients recorded in the age group of 31- 40 year. Maximum number of patients belongs to middle socioeconomic group and consumed mixed diet. Majority of patients present with pain in abdomen. 69.43% patients treated conservatively rest were treated by open or laparoscopic cholecystectomy. 24.30% patients had positive culture for bacteriological examination and most commonly isolated organism was E.Coli. All the patients had chronic cholecystitis on histopathological examination.

Conclusions: The result showed most common disorder of gallbladder was acute calculous cholecystitis and gallbladder disorders were more common in multiparous females of 4th decade. Most of the patients presented with pain in right hypochondrium. All the patients with acute condition were responded to conservative management. In operative intervention laparoscopic cholecystectomy is much better than open cholecystectomy because of reduced hospital stay with lesser post-operative morbidity.

Keywords: Gallbladder, Cholelithiasis, Cholecystectomy

INTRODUCTION

Gallbladder is the one of the most important organ of the body and the people of this newer century is highly

conscious about its diseases and its complication and malignancies.

Gallstone disease is one of the most common problems affecting the digestive tract. Autopsy report shown prevalence of gallstone ranges from 11-36%.¹

The gallstone disease is frequent in northern India and gallstone were frequent in those belonging to high socioeconomic status and multiparous females.² The incidence of gallstone is higher in females, with a female to male ratio is 1:3 and the first degree relative of gallstones have a twofold greater prevalence.³

In western countries about 80% of the gallstone are cholesterol stone and about 15-20% are black pigment stone.⁴ Cholesterol and mixed gallstones are formed from biliary sludge, while pigment stones are composed of calcium salts of unconjugated bilirubin, with varying amounts of cholesterol and protein.

About two third of the patients with gallstone disease present with chronic cholecystitis characterized by recurrent attack of abdominal pain.

Ultrasonography is the initial diagnostic study of choice of any patient suspected of disease of biliary tree and most of the times it's the only study that is required for the diagnosis of the condition.⁵ The management of the patients of gallbladder disorders is always a joint undertaking between physician, radiologist, clinical pathologist and of course surgeons. Medical management has improved because of better choice of antibiotic. With the advancement in current surgical technique mortality and morbidity rate has improved a lot. Modern laparoscopic technique has become gold standard for cholecystectomy.

The present study aims to look at the demographics, role of various diagnostic procedures, modes of medical and surgical management, operative morbidity and the pathology of the removed gallbladder in patients admitted in surgical wards of Sanjay Gandhi memorial hospital Rewa.

METHODS

This is a prospective study conducted over 1 years from 1 august 2014 to 31 July 2015, in which 350 patients admitted to the surgical wards of SGMH REWA, with clinical features suggestive of cholecystitis and later on diagnosed as gallbladder disorder, or had definitive diagnosis of cholelithiasis or other gallbladder disorder, were included in this study.

Detailed history of all the 350 cases were taken according to the proforma with the age, religion, socio economic status, parity, nature of the symptoms, duration of the symptoms, past history of similar complaints, diet history, and history of diabetes, asthma and any other chronic illness and examined in detail.

All patients were investigated with complete blood count, Liver function test, renal function test, blood sugar, chest X-ray, ultrasound of the abdomen and CT scan if needed.

Risk and complications of the condition were explained to the patients. In a patients of acute condition we followed conservative line (Nil per oral, IV fluid, analgesics, and antibiotics) of treatment and in case the patients who were not responding to the conservative measures or patients who were admitted for routine surgery we followed operative measure i.e. open or lap cholecystectomy.

The routine preoperative work up and preoperative antibiotics were given. The type of operation done, and approach used, intra operative findings were recorded.

After cholecystectomy, the removed gallbladder was sent for histopathological examination and the bile for bacteriological analysis. All the patients received routine post-operative care. Patient was monitored in the post-operative period to note the development of any complication and suitable treatment given according to the need. The patients were routinely discharged on 5th post-operative day in case of open and 2nd post-operative day in laparoscopic cholecystectomy, unless they needed to stay for long due to development of any complications. The time duration of the patient stay in the hospital and associated complication of the operative procedure were recorded.

Patients were advised regarding diet, rest and to visit the surgical OPD for regular follow up.

RESULTS

Table 1: Incidence according to the type of disorder (n = 350).

| Gallbladder disorder | No. | % |
|--|-----|-------|
| Acute calculous cholecystitis | 177 | 50.57 |
| Cholelithiasis | 101 | 28.86 |
| Acute acalculous cholecystitis | 19 | 5.42 |
| CAGB with metastasis | 16 | 4.57 |
| Cholelithiasis with choledocholithiasis | 12 | 3.42 |
| Chronic calculous cholecystitis | 9 | 2.57 |
| Acute on chronic cholecystitis | 5 | 1.42 |
| CAGB without metastasis | 4 | 1.14 |
| Gallbladder polyp | 2 | 0.57 |
| Chronic cholecystitis with mucocele of GB | 2 | 0.57 |
| Empyema of gallbladder | 1 | 0.28 |
| Acute calculous cholecystitis with sealed perforation of gallbladder | 1 | 0.28 |
| Total | 350 | 100 |

In our study most common disorder was acute calculous cholecystitis i.e. 50.57%. We found 20 (5.71%) cases of carcinoma gallbladder out of which 16 (80%) present with metastasis. Abhishek mishra et al⁶ in his study found 27 cases (11.25%) of gallbladder cancer, out of 240 cases of gallbladder diseases.

Table 2: Age and sex incidence (n=350).

| Age | Male | | Female | | Total | % |
|-------|------|-------|--------|-------|-------|-------|
| | No. | % | No. | % | | |
| 10-20 | 2 | 3.07 | 10 | 3.50 | 12 | 3.42 |
| 21-30 | 10 | 15.38 | 73 | 25.61 | 83 | 23.71 |
| 31-40 | 16 | 24.61 | 71 | 24.91 | 87 | 24.85 |
| 41-50 | 11 | 16.92 | 75 | 26.31 | 86 | 24.57 |
| 51-60 | 9 | 13.84 | 36 | 12.63 | 45 | 12.86 |
| 61-70 | 12 | 18.46 | 29 | 10.17 | 41 | 11.71 |
| 71-80 | 3 | 4.61 | 8 | 2.80 | 11 | 3.14 |
| >80 | 2 | 3.07 | 3 | 1.05 | 5 | 1.42 |
| Total | 65 | 100% | 285 | 100% | 350 | 100% |

In present study highest incidence (24.85%) of gallbladder disorders found in the age group of 31-40 years, followed by 24.57% in the age group of 41-50 years. Rakesh BH et al⁷ found 41-50 years is most commonly affected group. Gallbladder disorders were uncommon in the first 2 decades of life with only two cases in our study being below 20 years of age. In the present study, there was a female preponderance with a male to female ratio of 1:4.3. In Ghosh SK et al series, the ratio is 1:5.9.⁸

Table 3: Relation with diet (n=350).

| S. no. | Diet | No. of patients | % |
|--------|----------------|-----------------|-------|
| 1 | Vegetarian | 288 | 82.25 |
| 2 | Non-vegetarian | 62 | 17.75 |
| Total | | 350 | 100 |

In our study, the type of diet consumed was vegetarian (mixed type) in 82.23% of the patients and non-vegetarian diet in the remaining patients. In general the incidence of cholelithiasis is more common in non-vegetarian people, the cause could be due to the consumption of high protein and fat. Kotwal MR et al⁹ in Sikkim and North Bengal, showed that 97% cases of cholelithiasis were found in non-vegetarians.

Table 4: Relation with parity (n=285).

| S.no. | Parity | No. of patients | % |
|-------|-----------------|-----------------|-------|
| 1 | Nullipara | 24 | 8.42 |
| 2 | One | 20 | 7.03 |
| 3 | Two | 93 | 32.63 |
| 4 | Three and above | 148 | 51.92 |
| | Total | 285 | 100 |

Table 5 type of treatment (n=350).

| Treatment | No. of cases | % | |
|-----------------|--|-------|-------|
| Conservative | 243 | 69.43 | |
| Operative (107) | Open cholecystectomy | 31 | 8.86 |
| | Lap. Cholecystectomy | 76 | 21.71 |
| | Lap. Converted to open cholecystectomy | 4 | 1.14 |
| Total | 350 | 100 | |

In our study maximum patients (51.92%) had three or more children, only 8.42% were nullipara. R Thamil et al¹⁰ found out of 47 female patients 25 (53.19%) had three or more children.

In our study most of the patients (81.14%) had average built and the incidence of obesity was 16.29%. Ghosh SK et al 8 in their study had an obesity incidence of 10.66%, and 14% by Rakesh BH et al.⁷

Table 6: Post-operative complication (n=107).

| Mode of presentation | No. of cases | % |
|----------------------|--------------|------|
| Fever | 5 | 4.67 |
| Haemorrhage | 4 | 3.73 |
| Wound infection | 2 | 1.87 |
| Vomiting | 1 | 0.93 |

Table 7 Post-operative hospital stay (n=107).

| Type of operation | No. of patients | Post operative hospital stay | | | | | |
|------------------------------|-----------------|------------------------------|-------|-------------|-------|--------------|-------|
| | | Up to 2 days | | 3 to 5 days | | 6 to 10 days | |
| | | No. | % | No. | % | No. | % |
| Open cholecystectomy | 31 | - | - | 12 | 38.7 | 19 | 61.29 |
| Laparoscopic cholecystectomy | 76 | 21 | 27.63 | 55 | 72.37 | - | - |
| | | | | | | | 2.68 |

Table 8: Histopathology of gallbladder (n = 107).

| Histopathology | No. of patients | % |
|-----------------------|-----------------|-----|
| Chronic cholecystitis | 107 | 100 |

In our study pain in abdomen was the most common symptom present in 72% of the cases, followed by flatulent dyspepsia (63.71%) and nausea/vomiting (54%). Rakesh B.H et al.⁷ conclude similar results i.e. pain in upper abdomen in 84% followed by flatulence dyspepsia in 56% patients.

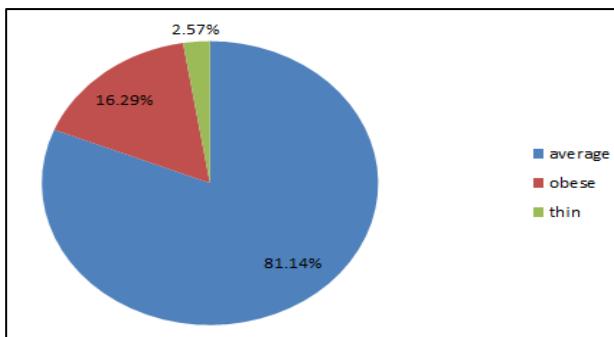


Figure 1: Relation with built (N = 350).

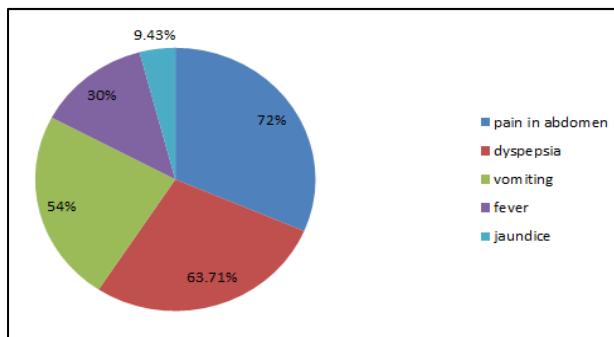


Figure 2: Distribution according to symptoms (N = 350).

In our study, right hypochondrium tenderness was the most common sign, with an incidence of 67.71%. Rakesh B. H. et al⁷ series had 34% of cases with upper abdomen tenderness as the most common sign. There were 12% cases of palpable gallbladder in our study, while Rakesh B. H. et al⁷ series had no patient with palpable gallbladder.

Treatment

In our study maximum 243 (69.43%) patients treated conservatively, followed by 31.71% patients by operative measures i.e. open or laparoscopic cholecystectomy. In present study all patients presented with acute condition were responding to conservative measure. Robert A Casillas et al,¹¹ in a study of 173 patients of acute cholecystitis 71 % underwent early laparoscopic cholecystectomy. 29% treated conservatively, out of which 44.12% were not responding to conservative measure and underwent for cholecystectomy.

In the present study fever was the most common complication, which was 4.67% in open cholecystectomy and nil in laparoscopic cholecystectomy. Rakesh B. H. et al⁷ showed most common complication was wound infection which was present in 10% cases.

The mean duration of stay in hospital in our study, for patients who underwent open cholecystectomy was 5.94 days and 2.68 days for those who underwent laparoscopic cholecystectomy. Similarly Rakesh B. H. et al⁷ in their

study had a result of post-operative stay of 6.9 days for open cholecystectomy and 4.9 days for laparoscopic cholecystectomy.

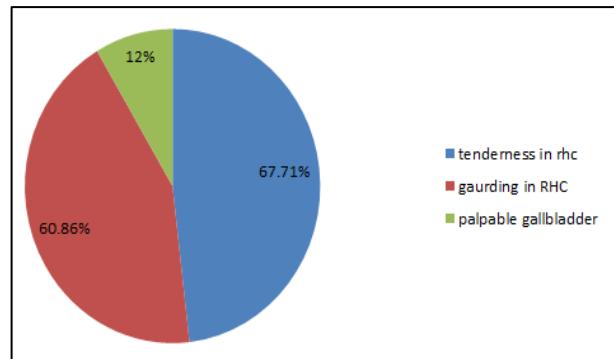


Figure 3: Incidence according to sign (N = 350).

Bacteriological examination

In our study bacteriological examination of bile was found to be positive for bacteria in 24.3% cases and E.Coli was the commonest (42.3%) organism. W T Chang et al¹² showed that bile culture was positive for 36% of cases and E. Coli was commonest (36%) organism.

In our study 100% specimen of gallbladder showed chronic cholecystitis on histopathological examination. R Thamil Selvi et al 2011¹⁰ found 85.8% chronic cholecystitis, 2.5% acute cholecystitis, 2.5% polyp and 1.2% showed carcinoma.

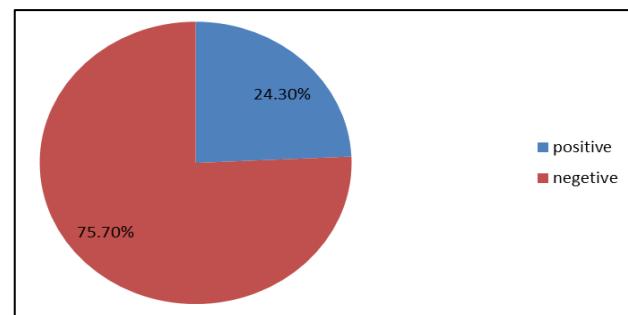


Figure 4: Bacteriology of bile (n=107).

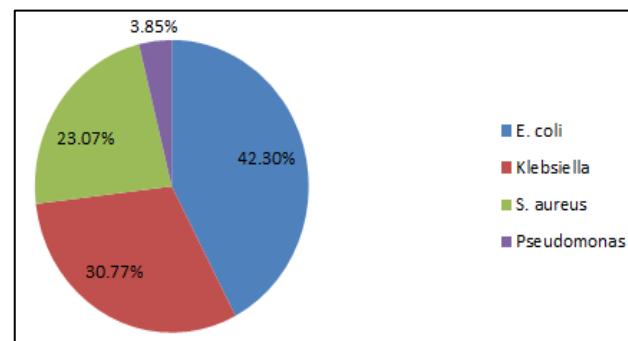


Figure 5: Nature of organism.

DISCUSSION

Gallbladder disorders are one of the major problems of the present era and these are the challenging but curable disorders in the present study, we have prospectively analyzed the clinical and pathological feature of the gallbladder diseases over a period of one year. On analysis of our data with various studies, we could elicit a few findings as we see below.

CONCLUSION

Acute calculous cholecystitis is the most common gallbladder disease. The disease is more common in Western population, especially America, and is less common in Asian countries. In India, the disease is more common in North India than in South India.

In our study the incidence of gallbladder diseases was more common in the 3rd and 4th decades of life. Female preponderance was noted with a male to female ratio of 1:4.3. Multiparous women are more commonly affected. Based on their socioeconomic status, it was noted that majority of the patients belonged to middle class, most of them were average weight and majority of them were vegetarians. The most common symptom was pain in abdomen and right upper quadrant tenderness was the most common sign noted. Fever was the most common complication noted mostly with open cholecystectomy and the duration of post-operative stay was shorter in case of laparoscopic cholecystectomy group. E.Coli was the most common organism isolated from the bile. All specimens showed chronic cholecystitis on histopathological examination.

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Conflict of interest: None declared

Ethical approval: The study was approved by the institutional ethics committee

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