



A CROSS SECTIONAL STUDY OF GALL STONE DISEASE WITH SPECIAL RESPECT TO CLINICAL PRESENTATION AND MANAGEMENT IN A TERTIARY CARE HOSPITAL

General Surgery

**Dr Abdul Majeed
N Mulla.**

Assistant Professor, Department of CVTS, RCSM & GMC Kolhapur

**Dr Ishwar R
Hosmani***

Professor, Department of surgery, Karnataka Institute of Medical Sciences, Hubli, Karnataka. *Corresponding Author

ABSTRACT

The proportional rise of the gall stones is associated with increase in metabolic abnormalities like insulin resistance and type 2 diabetes and overall metabolic syndrome. A cross sectional study was conducted at department of surgery of Karnataka Institute of medical sciences, Hubli for period of November 2010 to September 2012. About 41 consecutive cases were admitted, examined, investigated and operated were included in the study. The commonest symptom was pain abdomen and the commonest sign was tenderness in the right hypochondrium. Gall stones incidence is more in non-vegetarian than vegetarians. Ultrasonography was the investigation of the choice. It showed multiple gallstones and thickening of the gallbladder in the majority of cases. Among post-op complications, bile leak was common.

KEYWORDS

Gall stones; Cholecystectomy; Complications

INTRODUCTION:

Precipitation of one or more components of bile leads to formation of gall stones¹. Majority of them are cholesterol rich followed by pigment stones and mixed. Obesity, female gender, and higher age are most common risk factors for formation of the stones²⁻⁵. Majority of the patients are asymptomatic but if symptomatic then the patients are often distressed with the symptoms. The proportional rise of the gall stones is associated with increase in metabolic abnormalities like insulin resistance and type 2 diabetes and overall metabolic syndrome⁶⁻¹³. The symptomatic patients need urgent medical and surgical care. With this background, we conducted a study to understand the clinical presentation, management and complications associated with surgery in our tertiary care hospital.

Materials and methods:

A cross sectional study was conducted at department of surgery of Karnataka Institute of medical sciences, Hubli for period of November 2010 to September 2012. About 41 consecutive cases were admitted, examined, investigated and operated were included in the study. Detailed history of all the 41 cases were taken according to the performa approved by the experts of the department. Information regarding the age, religion, socio economic status, nature of the symptoms, duration of the symptoms, past history of similar complaints, diet history, Alcohol ingestion, diabetes and other comorbid conditions were obtained. All patients have 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. Preoperative antibiotics were given. After opening the abdomen the pathological features and anatomical variations were noted, bile obtained from the gallbladder with a syringe and sent for culture sensitivity. Based on clinical investigation and operative criteria, exploration of the CBD was done.

The abdominal wound was closed in layers. The gallstones were 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 post operative period to note the development in any complication. Antibiotics were given and subsequently changed according to the bile culture and sensitivity report. Patients who undergone open cholecystectomy, Abdominal drain was removed on 3-5th post-op day; sutures were removed on 7-10th post-op day and 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.

Statistical analysis:

All the data was entered compiled and analyzed using Epi info version

7.2. The quantitative variables were expressed in terms of categories and percentages. The qualitative variables were expressed in terms of percentages.

Results:

We included 41 cases in the present study.

Table 1: Demographic characteristics of the study sample

Demographic characteristics	Frequency	Percentage
Age group		
20 to 29	5	12.19
30 to 39	7	17.07
40 to 49	8	19.51
50 to 59	12	29.26
>60	9	21.95
Gender		
Male	14	34.14
Female	27	65.86
Type of diet		
Vegetarian	11	27.00
Mixed	30	73.00

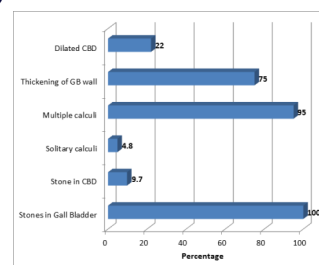
Majority of the study subjects were in the 5th to 6th decade with female preponderance. About 73% consumed mixed diet

Table 2: Distribution of the subjects based on the symptoms and signs (n=41)

Symptoms	Frequency	%	Signs	Frequency	%
Pain abdomen	39	95.12	Tenderness	35	85.36
Nausea/vomiting	22	53.65	Guarding	5	12.19
Yellowish discoloration of eyes	4	9.75	Mass	2	4.87
Fever	12	29.26	Jaundice	4	9.75

The most common symptom was pain in the abdomen (95.12%) and the most common sign reported was tenderness (85.36%).

Chart 3: Distribution of the study subjects based on the USG finding (n=41)



All the patients had gall bladder stones (100%). The next most common finding was multiple calculi (95%) and thickening of gall bladder (75%).

Table 4: Distribution of the patients based on surgery

Surgery	Frequency	Percentage
Lap cholecystectomy	1	2.40
Open cholecystectomy	32	78.00
Sub-total cholecystectomy	2	4.80
Open cholecystectomy + CBD	6	14.60
Re-laparotomy	2	4.80

About 78% underwent open cholecystectomy, 2.40% underwent laparoscopic cholecystectomy and 4.80% underwent subtotal cholecystectomy. About 4.80% underwent re exploration in the present study.

Table 5: Distribution of the patients based on the complications (n=41)

Complications	Frequency	Percentage
Intra operative		
Bile duct injury	2	4.80
Post operative		
Bile leak	5	12.00
Wound infection	1	2.40
Peritonitis	2	4.80
Fever	14	34.00

About 4.80% suffered bile duct injury intra operatively. About 12% had bile leak, 2.40% had wound infection, 4.80% had peritonitis and 34.80% had post operative fever in the present study.

DISCUSSION:

Impaired metabolism of cholesterol, Bilirubin and bile acids leads to formation of gall stones. Gall bladder disease is one of the most common causes of morbidity and mortality with respect to abdominal area¹⁴. It affects the quality of life of the patients and also has an economical impact if symptomatic. With this background we conducted a cross sectional study on the clinical presentation and management options among the patients admitted under the department of surgery in our tertiary care setup.

Present study demonstrates the peak incidence of the gall stone diseases among 5th and 6th decade of life. Similar inferences were drawn by Thamil et al¹⁴ (6th decade), Pradhan SB et al¹⁵, Abdalla M et al¹⁶, R.Selvaraju et al¹⁷, Gupta V et al¹⁸ and Singh A et al¹⁹. Our study reported female preponderance which is due to the effect of estrogen and progesterone among the females. Similar reports were given by Pradhan SB et al¹⁵, Abdalla M et al¹⁶, R.Selvaraju et al¹⁷, Singh A et al¹⁹ and Mark D et al²⁰. A dictum saying fertile female of forties is at greater risk of having gall stones holds good in the present study. We found the incidence of gall bladder stones among the people who consumed mixed diet. Similar inferences were drawn by Gupta V et al¹⁸, Pradhan et al¹⁵, R.Selvaraju et al¹⁷ and Singh A et al¹⁹ in their studies. This can be attributed due to higher cholesterol content of non vegetarian diets and accumulation of which leads to formation of the most common cholesterol stones.

Abdominal pain along with tenderness elicited at right hypochondriac region (Murphy's sign) is characteristic of gall stone disease. The present study also had similar findings. To substantiate the facts, we found similar presentations in studies by Pradhan et al¹⁵ (65%); Thamil et al¹⁴ (61.53%) and Berger MY et al²¹.

Ultrasonography is the first line investigation to confirm the existence of stones in suspected cases. All the 41 cases in our study had stones in the gall bladder. About 95% were multiple calculi and 4.80% were single ones. About 22% of the cases had thickening of gall bladder. Due to pressure changes in the gall bladder and trying to evacuate the formed stones gall bladder wall is bound to be thickened. Many of the features in our study were similar to studies by Berger MY et al²¹, Gupta V et al¹⁸ and Singh A et al¹⁹.

Cholecystectomy is the treatment of choice for the cases which are symptomatic. Depending on the extent of the disease either laparoscopic or open type is preferred. About 32 cases of 41 cases we studied underwent open cholecystectomy. Since majority of them were open type, some of the complications like bile leak, peritonitis, wound

infection and pyrexia were common in the present study. Similar complications were reported in the studies conducted by Radunovic M et al²² and Clavien PA et al²³. Laparoscopic cholecystectomy is preferred since it has less complications. Studies by Kaushik R et al²⁴, Aashu A et al²⁵, Kapoor M et al²⁶ and Karim T et al²⁷ demonstrated the lesser complications of laparoscopic cholecystectomy.

Due to time limitations, we had included only 41 cases in the present study. Larger sample size with follow up data would yield a better idea about the clinical presentations varying with time. Nonetheless, this study highlights the importance of clinical examination, appropriate investigations and management of gall bladder stone disease.

CONCLUSIONS:

The incidence of gallstones was the highest in the 5th and 6th decades of the life with maximum incidence in the 6th decade. Gallstones disease is more common in female. The commonest symptom was pain abdomen and the commonest sign was tenderness in the right hypochondrium. Gall stones incidence is more in non-vegetarian than vegetarians. Ultrasonography was the investigation of the choice. It showed multiple gallstones and thickening of the gallbladder in the majority of cases. Among post-op complications, bile leak was common.

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