International Journal Dental and Medical Sciences Research
Volume 5, Issue 1, Jan-Feb 2023 pp 250-254 www.ijdmsrjournal.com ISSN: 2582-6018

A Study on Clinical Presentation and Management of Gall Stone Disease Presenting In a Tertiary Care Hospital

Dr. Abhilash Mohanty, Dr. Indrajeet Kumar Rajan
Junior Resident Department of General Surgery Narayan Medical College Sasaram Bihar.
Junior Resident Department of General Surgery Narayan Medical College Sasaram Bihar.

Submitted: 12-01-2023 Accepted: 24-01-2023

ABSTRACT

Introduction:
Cholelithiasis or gallstone disease is primarily a disease of adults. Cholelithiasis is a chronic recurrent disease of the hepatobiliary system. Gallstones are the major cause of morbidity and mortality throughout the world. With at least 10% of the adults have gallstones with a recent rise in the incidence due to change in the dietary factors.
Aim:
To study the clinical presentation and management of gall stone disease presenting at our institute.
Method:
This Cross-sectional study was conducted on 82 patients in General Surgery Ward, at Narayan Medical College and Hospital Sasaram, Bihar for a period of 1 year who were diagnosed with cholelithiasis.

Result:
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.

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. Laparoscopic cholecystectomy or open cholecystectomy should be performed immediately after the diagnosis is made, because delaying the operation allows the inflammation to become more intense.
Keywords: Cholecystectomy; Gallbladder; Gall stones.

I. INTRODUCTION

Cholelithiasis is one of the most frequently encountered disease and one of the major causes of abdominal morbidity throughout world 1 . Incidence of gall stone disease is on a rise globally due to the vast changes in the dietary habits, life style changes associated with high junk diet consumption and increased sedentary life style 2 . Precipitation of one or more components of bile leads to formation of gall stones 3 . 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 stones4-5. 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.

II. MATERIALS AND METHODS

A cross sectional study was conducted at department of surgery of Narayan Medical College and Hospital Sasaram, Bihar for period of November 2021 to October 2022. About 82 consecutive cases were admitted, examined, investigated and operated were included in the study. Detailed history of all the 82 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 hemogram, 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

International Journal Dental and Medical Sciences Research
Volume 5, Issue 1, Jan-Feb 2023 pp 250-254 www.ijdmsrjournal.com ISSN: 2582-6018

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, the Abdominal drain was removed on 2-3 post-op day; sutures were removed on 7-10 post-op day and were discharged on the 3rd or 4th 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.

III. STATISTICAL ANALYSIS:

All the data was entered compiled and analysed 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.

IV. RESULTS:

We included 82 cases in the present study.

Table1: Demographic characteristics of the study sample

Demographic characteristics	**Frequency**	**Percentage**
Agegroup		
20 to 29	10	12.19
30 to 39	14	17.07
40 to 49	16	19.51
50 to 59	24	29.26
>60	18	21.95
Gender		
Male	28	34.14
Female	54	65.86
Typeofdiet		
Vegetarian	22	27.00
Mixed	60	73.00

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

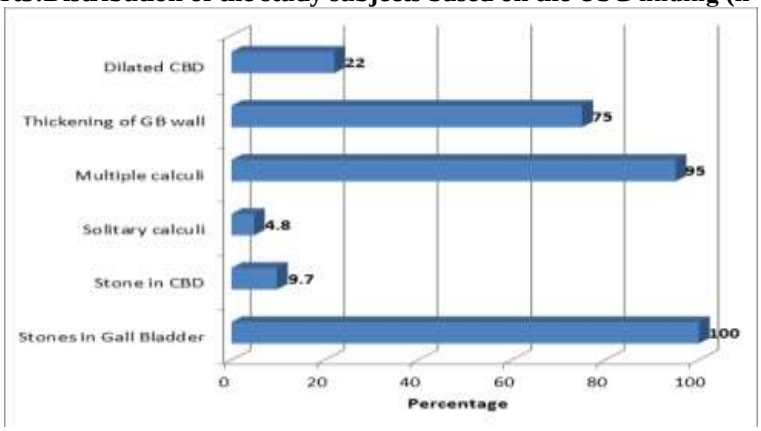
Table2:Distribution of the subjects based on the symptoms and signs(n=82)

Symptoms	**Frequency**	**%**	**Signs**	**Frequency**	**%**
Painabdomen	78	95.12	Tenderness	70	85.36
Nausea/vomiting	44	53.65	Guarding	10	12.19
Yellowishdiscolorationofeyes	8	9.75	Mass	4	4.87
Fever	24	29.26	Jaundice	8	9.75

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

International Journal Dental and Medical Sciences Research
Volume 5, Issue 1, Jan-Feb 2023 pp 250-254 www.ijdmsrjournal.com ISSN: 2582-6018

Chart3:Distribution of the study subjects based on the USG finding (n=82)



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

Table4: Distribution of the patients based on surgery

Surgery	Frequency	Percentage
Laparoscopiccholecystectomy	64	2.40
Open cholecystectomy	2	78.00
Sub-totalcholecystectomy	4	4.80
Opencholecystectomy+CBD	12	14.60
Re-laparotomy	2	4.80

About 78% underwent laparoscopic cholecystectomy, 2.40% underwent open 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=82)

Complications	Frequency	Percentage
Intraoperative		
Bileductinjury	2	4.80
Postoperative		
Bileleak	5	12.00
Woundinfection	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.

V. 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 area[3,4] . It affects the quality of life of the patients and also has an economic 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 5thand 6th decade of life. Similar inferences were drawn 14 15 16 by Thamil et al (6th decade), Pradhan SB et al , Abdalla M et al , 17 18 19 R.Selvaraju et al , Gupta V et al and Singh A et al . Our study reported female preponderance which is due to the effect of estrogen and progesterone among the females. Similar reports were given by 15 16 17 19 Pradhan SB et al , Abdalla M et al , R.Selvaraju et al , Singh A et al 20 and Mark D et al . 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 18 mixed diets. Similar inferences were drawn by Gupta V et al , Pradhan 15 17 19 et al , R.Selvaraju et al and Singh Aet al 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 15 found similar presentations in studies by Pradhan et al (65%); Thamil 14 21 et al (61.53%) and Berger MYet al .

Ultrasonography is the first line investigation to confirm the existence of stones in suspected cases. All the 82 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 21 features in our study were similar to studies by Berger MY et al , 18 19 Gupta Vet al and Singh Aet al .

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 64 cases of 82 cases, we studied underwent laparoscopic cholecystectomy.

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 82 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.

All the patients were given IV fluids, Nasogastric aspiration was done, and antibiotics and analgesics were given. Drainage tube was removed between 3 and 4 days based upon the drainage. In the present study wound infection was 2.40 %, bile duct injury 4.80%, bile leak 12 %. Five patients had bile leakage through the drain tube, the patients were managed conservatively and the patient improved. In this case drain was removed on the 7th day.

There was no problem in the follow up period in any patient. Nothing more can be stated because of limited period of follow up of patients.

VI. CONCLUSION:

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. Laparoscopic cholecystectomy reduced the number of stay in the hospital, pain and disability as compared to open cholecystectomy. Among post-op complications, bile leak was common.

REFERENCES

[1]. Johnston DE, Kaplan MM. Pathogenesis and Treatment of Gallstones. N Engl J Med. 1993;328(6):412-21.

[2]. Haribhakti SP, Mistry JH. Techniques of laparoscopic cholecystectomy: Nomenclature and selection. J Minim Access Surg. 2015;11(2):113 – 8.

[3]. AllenSN.Gallbladderdisease:pathophysiology,diagnosis,andtreatment.USPharm.2013;38(3):33-41.

[4]. Hung S-C, Liao K-F, Lai S-W, Li C-I, Chen W-C. Risk factors associated withsymptomatic cholelithiasis in Taiwan: a population-based study. BMC Gastroenterol.2011;11(1):111.

[5]. Stinton LM, Shaffer EA. Epidemiology of gallbladder disease: cholelithiasis and cancer. Gut Liver. 2012;6(2):172.

[6]. Elmehdawi RR, Elmajberi SJ, Behieh A, Elramli A. Prevalence of gall bladder stones among type 2 diabetic patients in Benghazi Libya: a case-control study. Libyan J Med. 2008;4(1):27-30.

[7]. Sodhi JS, Zargar SA, Khateeb S, et al. Prevalence of gallstone disease in patients with type 2 diabetes and the risk factors in North Indian population: A case control study. Indian J Gastroenterol. 2014;33(6):507-511.

[8]. Lv J, Yu C, Guo Y, et al. Gallstone Disease and the Risk of Type 2 Diabetes. Sci Rep. 2017;7(1):15853. doi:10.1038/s41598-017-14801-2

[9]. Nervi F, Miquel JF, Alvarez M, et al. Gallbladder disease is associated with insulin resistance in a high risk Hispanic population. J Hepatol. 2006;45(2):299-305.
[10]. Misciagna G, Guerra V, Di Leo A, Correale M, Trevisan M. Insulin and gall stones: a population case control study in southern Italy. Gut. 2000;47(1):144-147.
[11]. Grundy SM. Cholesterol gallstones: a fellow traveler with metabolic syndrome. 2004.
[12]. Ata N, Kucukazman M, Yavuz B, et al. The metabolic syndrome is associated with complicated gallstone disease. Can J Gastroenterol. 2011;25(5):274-276.
[13]. Chen L-Y, Qiao Q-H, Zhang S-C, Chen Y-H, Chao G-Q, Fang L-Z. Metabolic syndrome and gallstone disease. World J Gastroenterol. 2012;18(31):4215-4220.
[14]. Selvi TR, Sinha P, Subramaniam PM, Konapur PG, Prabha C V. A clinicopathological study of cholecystitis with special reference to analysis of cholelithiasis. Int J Basic Med Sci. 2011;2(2):68-72.
[15]. Pradhan SB, Joshi MR, Vaidya A. Prevalence of different types of gallstone in the patients with cholelithiasis at Kathmandu Medical College, Nepal. Kathmandu Univ Med J (KUMJ). 2009;7(27):268-271.
[16]. Jaraari AM, Jagannadharao P, Patil TN, et al. Quantitative analysis of gallstones in Libyan patients. Libyan J Med. 2010;5:10.4176/091020.
[17]. Selvaraju R, Raman RG, Thiruppathi G, Valliappan R. Epidemiological study of gallstone in Cuddalore District. Int J Pharm Tech Res. 2010;2(2):1061-1067.
[18]. Gupta V, Sharma AK, Kumar P, et al. Residual gall bladder: An emerging disease after safe cholecystectomy. Ann hepato-biliary-pancreatic Surg. 2019;23(4):353- 358.
[19]. Singh A, Kapoor A, Singh RK, et al. Management of residual gall bladder: A 15-year experience from a north Indian tertiary care centre. Ann hepato-biliary-pancreatic Surg. 2018;22(1):36-41. doi:10.14701/ahbps.2018.22.1.36
[20]. Stringer MD, Fraser S, Gordon KC, Sharples K, Windsor JA. Gallstones in New Zealand: composition, risk factors and ethnic differences. ANZ J Surg. 2013;83(7- 8):575-580.
[21]. Berger MY, Olde Hartman TC, van der Velden JJIM, Bohnen AM. Is biliary pain exclusively related to gallbladder stones? A controlled prospective study. Br J Gen Pract. 2004;54(505):574-579.
[22]. Radunovic M, Lazovic R, Popovic N, et al. Complications of Laparoscopic Cholecystectomy: Our Experience from a Retrospective Analysis. Open access Maced J Med Sci. 2016;4(4):641-646.
[23]. Clavien PA, Sanabria JR, Mentha G, et al. Recent results of elective open cholecystectomy in a North American and a European center. Comparison of complications and risk factors. Ann Surg. 1992;216(6):618-626.
[24]. Kaushik R, Sharma R, Batra R, Yadav TD, Attri AK, Kaushik SP. Laparoscopic cholecystectomy: an Indian experience of 1233 cases. J Laparoendosc Adv Surg Tech. 2002;12(1):21-25.
[25]. Aashu A, Bhattacharjee PK, Halder SK, Nidhi N. A prospective study of different complications following laparoscopic cholecystectomy in a tertiary care hospital in Eastern India. Int Surg J. 2016;3(4):2104-2108.
[26]. Kapoor M, Yasir M, Umar A, Suri A, Aiman A, Kumar A. Complications of laparoscopic cholecystectomy, an analysis of 300 patients. JK-practitioner. 2013;18(1-2):7-11.
[27]. Karim T, Dey S, Singh R, Katiyar VK. Retrospective analysis of cholecystectomy performed in an institution for lower socioeconomic population in India. Int J Curr Res Rev. 2016;8(1):1.