

Original Research Article

Effective diagnosis for the management of gall stone: a clinical study

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ABSTRACT

Background: Gallstones also known as cholelithiasis, is one of the most occurring and costly gastrointestinal disorder. Management of acute biliary cholelithiasis mainly involves pain control with non-steroidal anti-inflammatory drugs or narcotic pain relievers. However, surgical procedures like laparoscopic and mini-laparotomy cholecystectomy is also use for the management of it.

Methods: Present clinical study gives an account of the diagnostic criteria for the effective management of acute biliary cholelithiasis, the diagnosis of gallstones was done by ultrasonography (USG).

Results: Present study indicated females more (73.33 %) prone to occurrence of gallstone compared to males (26.67 %). Abdominal pain was the common feature in all the patients, with majority complaining (40 %) pain in right hypochondrium and epigastrium. Dyspepsia along with Nausea and vomiting was associated in 70 % and 66.66 % patients respectively. Tenderness and tenderness of hypochondrium were reported in 70 % and 30 % patients respectively. Ultrasonography served to be the major technique in diagnosing gallstones in the present study with success rate of 98.33 %.

Conclusions: The present study concludes male-female ratio for occurrence of gallstones 1:2.75. Pain in the abdomen with nausea/vomiting and dyspepsia is the major clinical feature along with the occurrence of tenderness with elevated leucocytes count as one of the prime diagnostic criteria's. Present study concluded ultrasonography (USG) as the correct technique in diagnosing gallstones.

Keywords: Gallstone, Laparoscopic, Mini-laparotomy cholecystectomy, Ultrasonography

INTRODUCTION

Gallstone disease is a chronic recurrent hepatobiliary disease, the basis for which is the impaired metabolism of cholesterol, bilirubin and bile acids, which is characterized by the formation of gallstones in the hepatic bile duct, common bile duct, or gallbladder.¹ In the United States, more than 80% of gallstones contain cholesterol as their major component.² Intermediate prevalence rates occur in Asian populations (5-20%) and black Americans (13.9% of women and 13.9% of men). The lowest frequencies are in black Africans (<5%), the best studied being the Masi tribe and the Bantu, in whom

the entity is virtually non-existent. Prevalence of cholelithiasis in India is more in females (n = 38) than men (n = 15).³⁻⁵ There are many pieces of research on etiology, clinical presentation, management specifically evaluating the modalities of treatment but chemical analysis and bile culture through age-old investigations were not given much importance in spite that they could give an insight into pathogenesis and presentation. Incidence in India partially attributed to widespread use of ultrasonography (USG) in the last two decades but changing socio-economic structure and changes in various other epidemiological factors including diet may also be responsible.⁶⁻⁸

Management of acute biliary cholelithiasis mainly involves pain control with nonsteroidal anti-inflammatory drugs or narcotic pain relievers.^{9,10} However surgical procedures like laparoscopic and mini-laparotomy cholecystectomy is also used for the management of it. Thus, this clinical study gives an account of the diagnostic criteria for the effective management of it.

METHODS

This investigation was a prospective report observed in the department of surgery, government medical college, Nagpur, Maharashtra, India between the periods of January 2000 to December 2002. In this study, 60 patients of either sex were selected that suffer from gall bladder disease. All the selected subjects were evaluated with the meticulous history and physical examination and were investigated by available tests like blood counts including TC DC, ESR, HB, blood sugar, renal function test, liver function test, blood grouping, coagulation profile, chest X-ray, abdominal radiography, ECG in selected patients. Depending on the symptom that was observed in the study gall stone was managed by different operative therapy.

RESULTS

Age and gender distribution studies

A total of 60 patients were enrolled on their own consent, and the following results were recorded in relevance to age, and sex (Table 1). The data indicated gallstones most common in the fourth and fifth decade of age, accounting for 26.66 % of all cases. In a total of 60 patients, 44 were females and the rest 16 males, these statistics show a predominance of cholelithiasis in the female population with a male-female ratio of 1:2.75 (Table 1).

Table 1: Patient details as per the age and sex.

Age in years	Number of patients		Total patient	% of patient
	Male	Female		
0-10	1	0	1	1.6
11-20	1	0	1	1.6
21-30	3	10	13	21.6
31-40	2	13	15	25
41-50	2	14	16	26.66
51-60	6	3	9	15
61-70	1	4	5	8.33
Total	16	44	60	100
Male: Female ratio				1:2.75

Observation for symptoms

In this study 60 patients of which 44 were, females and 16 were males of age ranging from 0 to 70 years were diagnosed with gall bladder disease as shown in Table 1. There were several common symptoms present in the patients selected for the study. Abdominal pain was

common in all, among which 24 (40%) patients were diagnosed with pain in right hypochondrium, the same number of patients i.e. 24 (40%) also were reported for pain in right hypochondrium and epigastrium. Pain in Epigastrium was reported in 8 (13.33 %) patients whereas 4 (6.66 %) patients were diagnosed with upper abdominal pain. Other symptoms reported were the occurrence of dyspepsia in 42 (70 %), nausea and vomiting in 40 (66.66 %), fever in 15 (25 %) and jaundice in 7 (11.66 %) patients (Table 2).

Table 2: Details of common symptoms in the patients suffering from gall stone.

Symptoms	No. of cases n=60 (%)
Pain	Right hypochondrium 24 (40)
	Right hypochondrium and epigastrium 24 (40)
	Epigastrium 8 (13.33)
	Upper abdomen 4 (6.66)
Dyspepsia	42 (70)
Nausea and vomiting	40 (66.66)
Fever	15 (25)
Jaundice	7 (11.66)

Diagnostic criteria

Diagnostic criteria were considered, it was noticed that tenderness was diagnosed in 42 patients (70 %) in which 18 patients (30 %) had right hypochondrium, 13 (21.66 %) had right hypochondrium and epigastrium, 1 patient suffered epigastrium whereas 10 subjects (16.66 %) showed murphy's sign +ve.

All the patients in the study were diagnosed with enhanced leucocytes count and only 1 patient had altered liver function marked by enhanced bilirubin. In the study ultrasonography (USG) was found to be the most efficient method for confirmation of gallstones with success rate 98.33 % confirming gallstones in 59 patients (Table 3). On the further evaluation of patients, it was found that 9 subjects i.e. (15 %) were confirmed for Acute cholecystitis whereas 24 (40 %) were reported as cases of chronic cholecystitis (Table 4).

Table 3: Diagnostic criteria for the investigation of gall stone.

Diagnostic criteria	No. of cases N=60 (%)
Tenderness	Right hypochondrium 18 (30)
	Right hypochondrium and epigastrium 13 (21.66)
	Epigastrium 1 (1.6)
	Murphy's sign +Ve 10 (16.66)
Blood count	Enhanced leucocytes 60 (100)
Liver Function test	Enhanced bilirubin 1 (1.6)
Ultrasonography	Detectable gall Stone 59 (98.33)

DISCUSSION

In the present study, 73.33 % (44 out of 60) patients were females, while the rest 26.67 % (16 out of 60) were males. Prior to this, studies were done by Bhattacharya et al and Tamhankar et al reported parallel findings suggesting more of females compared to males associated with gallstone.¹¹⁻¹³

Study observed that all the 60 patients had the onset of abdominal pain among which about 40 % complained of pain in right hypochondrium and 40 % said to have pain in right hypochondrium and epigastrium, whereas 13.33 % suffered from the pain of epigastrium and 6.66 % from upper abdominal pain. Comparable results were reported by Ganey et al and Sharma et al in their studies.^{13,14} Dyspepsia was also found to a major symptom associated with the gallstone, 70 % patients were reported to it. Nausea and vomiting occurred spontaneously in 66.66 % patients mostly during the attack of pain which was like reports published by Ganey et al.¹⁴

Present study found 25 % and 11.66 % patients reported for fever and hepatic problem respectively. Study findings suggested the occurrence of tenderness as one of the major diagnostic features in gall stones which was seen in 70 % of subjects, tenderness of hypochondrium (30 %) was one of the major among them.¹⁵ Elevated leucocytes count was the makeable feature of all the patients selected in the study. Ultrasonography served to be the major technique in diagnosing gallstones in the present study with success rate of 98.33 %.

CONCLUSION

From the present study, we conclude that females are more prone to occurrence of gallstones as compared to males, the male-female ratio for occurrence of gallstones is 1:2.75. Pain in the abdomen with nausea/vomiting and dyspepsia is the major clinical presentation of the gall stone.

The occurrence of tenderness with elevated leucocytes count is one of the prime diagnostic criteria's. Present study concluded USG as the correct technique in diagnosing gallstones.

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