

A study on clinical profile of patients who underwent laparoscopic cholecystectomy at a tertiary care hospital

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Abstract

Gall stones are found in middle aged females who with higher BMI. In younger patients with gall stones, hemolytic diseases should be considered. Inpatients admitted in General Surgery Department, who underwent laparoscopic Cholecystectomy were the study subjects. All the patients were scored pre-operatively according to history, clinical examination, biochemical parameters, and sonological findings. Out of 60 patients, 44 patients had history of gall bladder disease with symptoms of which 24 patients had easy surgery and 20 had difficult surgery. Out of 60 patients, 18 patients had tenderness in right hypochondrium of which 6 patients had difficult surgery.

Keywords: Laparoscopic Cholecystectomy, Primary bile-duct stones, Gall bladder disease

Introduction

The earliest theories regarding the pathogenesis of gallstones focused on the gallbladder as the primary source of pathology. The notion was widely accepted until 1924, when finally was introduced the concept that failure of the cholesterol to remain in solution was the critical factor initiating cholesterol gallstone formation ^[1].

Gallstones are composed mainly of cholesterol, bilirubin, and calcium salts, with smaller amounts of protein and other materials ^[2].

In Western countries, cholesterol is the principle constituent of more than three quarters of gallstones, and many of these stones have more than 80% cholesterol. Cholesterol stones often contain alternating layers of cholesterol crystals and mucin glycoproteins. Pure cholesterol crystals are quite soft, and protein contributes importantly to the strength of cholesterol stones ^[3].

Non-cholesterol stones are categorized as black or brown pigment stones, consisting of calcium salts of bilirubin. Black pigment stones are believed to consist of polymers of bilirubin, with large amounts of mucin glycoproteins. Brown pigment stones are made up of calcium salts of unconjugated bilirubin, with variable amounts of protein and cholesterol.

Black pigment stones are more common in patients with cirrhosis or chronic hemolytic conditions such as the thalassemia and possibly sickle cell anemia, in which bilirubin excretion is increased.

Primary bile-duct stones, defined as stones that originate in the bile ducts, are usually brown pigment stones associated with infection, are found in elderly patients, in patients with congenital bile duct anomalies or obstruction. The high incidence of stones in patients with hemolytic disorders is due to loads of bilirubin presented to the liver for excretion [4].

Clinical presentation Gallstones may remain symptomatic, being detected incidentally as imaging is performed for other symptoms. If symptoms occur, patients typically complain of right upper quadrant or epigastric pain, which may radiate to the back. This may be described as colicky, but more often is dull and constant. Other symptoms include dyspepsia, flatulence, food intolerance, particularly to fats, and some alteration in bowel frequency. Biliary colic is typically present in 10-25 per cent of patients. This is described as a severe right upper quadrant pain which ebbs and flows associated with nausea and vomiting. Pain may radiate to the chest. The pain is usually severe and may last for minutes or even several hours. Frequently, the pain starts during the night and wakes the patient [5]. Minor episodes of the same discomfort may occur intermittently during the day. Dyspeptic symptoms may coexist and be worse after such an attack. As the pain resolves, the patient improves and is able to eat and drink again, often only to suffer further episodes. It is of interest that a patient may have several episodes of this nature over a period of a few weeks and then no more trouble for some months [6].

Jaundice may result if the stone migrates from the gall bladder and obstructs the common bile duct. Rarely, a gallstone can lead to bowel obstruction (gallstone ileus).

Methodology

Study population: Inpatients admitted in General Surgery Department, who underwent laparoscopic Cholecystectomy.

Study Design: Prospective study

Sample size = 60 Sample Size

A sample size of 60 will have 90% power to detect sensitivity is unlikely to exceed 96% (Based on published article by Gupta N, et al). In this calculation we used the following assumptions: We expect sensitivity estimated within 5 percentage points of the true value (965) with 95% confidence interval.

Inclusion criteria: All the patients >18years of age with symptomatic gallstone disease

Exclusion criteria: Exclusion criteria included

1. Patients unfit for General Anesthesia.
2. Patients who did not give consent to be included in the study.
3. Pregnant women.
4. Patients who were under 18 years of age.
5. patient admitted with current attacks of cholecystitis >72hrs

All the patients were scored pre-operatively according to history, clinical examination, biochemical parameters, and sonological findings.

Results

Table 1: Showing gender wise distribution of Cholelithiasis

Gender	Frequency	Percent
Male	20	33%
Female	40	67%
Total	60	100%

In this study out of 60 cases 20 were male patients and 40 were females, which constitutes 33% and 67% respectively.

Table 2: Showing the age wise distribution of Cholelithiasis.

Age	Frequency	Percent
<50 years	46	77
>50 years	14	23
Total	60	100.0

In our study there were 46 patients under 50 years and 14 patients were over 50 years.

Table 3: Age wise distribution

Age groups	Frequency
<19	1
20-29	10
30-39	14
40-49	20
50-59	9
60-69	5
>70	1
Total	60

The minimum age of the patient was 18 years and maximum 71 years. Maximum patients were in age group 40-49 years (20 no.).

Table 4: Outcome

Outcome	>50 years	<50 years	Column Total	P value
Easy	4	31	35	0.0232
Difficult	10	15	25	
total	14	36	60	

Age more than 50 years is statistically significant for difficult LC with p value 0.0232 Showing the mean age of the patients with Cholelithiasis.

Out of 60 cases 41.7% (25) patients had difficult surgery and 58.3% (35) had easy surgery.

Table 5: Gender and Outcome

	Outcome		Total	P value*
	Easy	Difficulty		
Male	6	14	20	0.0041
	33%	67%	100.0%	
Female	29	11	40	
	72%	28%	100.0%	
Total	35	25	60	
	58.3%	41.7%	100.0%	

Out of 20 males 6 had easy surgery and 14 had difficulty. In 40 females 29 had easy surgery and 11 had difficulty. Male sex was statistically significant for difficulty with p value 0.0041.

Table 6: Showing symptoms of Gall bladder stone disease in patients

	H/O Gb Symptoms		Total	P value*
	Yes	No		
Easy	24	11	35	0.324
	68.6%	31.4%	100.0%	
Difficulty	20	5	25	
	80.0%	20.0%	100.0%	
Total	44	16	60	
	73.3%	26.7%	100.0%	

Out of 60 patients, 44 patients had history of gall bladder disease symptoms. Of which 24 patients had easy surgery and 20 had difficult surgery.

History of gall bladder disease symptoms was not statistically significant in our study with p value 0.324.

Table 7: Showing patients who were admitted with acute cholecystitis

	Admission For Acute Cholecystitis		Total	P value*
	Yes	No		
Easy	3	32	35	0.0015
	20%	71%	100.0%	
Difficulty	12	13	25	
	80%	29%	100.0%	
Total	15	45	60	
	20%	80%	100.0%	

In this study out of 60 patients, 15 patients had acute cholecystitis, of 3 patients had easy surgery and 12 had difficult surgery. Admission with acute cholecystitis is statistical significant in our study with p value 0.001

Table 8: Showing past history of abdominal surgery

	Previous abdominal surgery		Total	P value*
	Yes	No		
Easy	10	25	35	0.693
	28.6%	71.4%	100.0%	
Difficulty	6	19	25	
	24.0%	76.0%	100.0%	
Total	16	44	60	
	26.7%	73.3%	100.0%	

Out of 60 patients, 16 patients had previous abdominal surgeries. H/O previous abdominal surgery is not statistically significant for difficult surgery in our study with p value of 0.693.

Table 9: Showing the patients who had tenderness

	Tenderness		Total	P value*
	Yes	No		
Easy	12	23	35	0.6892
	34%	66%	100.0%	
Difficulty	6	19	25	
	24%	76%	100.0%	
Total	18	42	60	
	30%	70%	100.0%	

*Chi Square Test

Out of 60 patients, 18 patients had tenderness in right hypochondrium of which 6 patients had difficult surgery, it is not statistically significant with p value 0.6892.

Discussion

Physical examination results frequently are normal. Discomfort might be elicited on deep palpation of the right upper quadrant of the abdomen. The gallbladder is felt as tense globular swelling projecting downwards and lateral to the right rectus abdominis muscle.

Hyperesthesia between the 9th and 11th ribs posteriorly on the right side is present in acute cholecystitis, is called as Boas's sign.

In the acute phase, the patient may have right upper quadrant tenderness that is exacerbated during inspiration by the examiner's right subcostal palpation (Murphy's sign). A positive Murphy's sign suggests acute inflammation and may be associated with fever and tachycardia, leukocytosis and moderately elevated liver function tests. A mass may be palpable as the omentum walls off an inflamed gall bladder [7].

If there is impacted stone in the neck of GB and if resolution doesn't occur, an empyema of the GB may result. The wall may become necrotic and perforate, with development of localized peritonitis.

Complete or partial obstruction of the common bile duct manifests as jaundice. In all races, jaundice is detected most reliably by examination of the sclera for yellowish discoloration [8].

We must bear in mind that the gallbladder must be removed not because it contains stone, but because it forms them.

Patients having cholelithiasis with acute cholecystitis demands cholecystectomy unless this is impossible because of the patient's medical condition

Acute cholecystitis can subside without surgery, but can also progress to gangrene and perforation. Bile-duct obstruction or cholangitis from stones in the common bile duct also demands urgent action. Recurrent episodes of upper abdominal pain related to gallstones are the most common indication for the treatment of gallstones [9].

Acute cholecystitis duration more than 72hrs is treated conservatively with nasogastric aspiration and intravenous fluid, analgesics and antibiotics. Cholecystectomy is then performed after 6 weeks.

Until the 1980s, prophylactic cholecystectomy was also urged for asymptomatic patients with gallstones, because of the perceived risk of gallstone complications in later years. The practice of prophylactic cholecystectomy has since been challenged by several studies [10].

Gracie and Ransohoff followed a cohort of 123 university faculty members with asymptomatic gallstones, and found the 15-year cumulative probability of biliary symptoms or complications was only 18 percent, with no deaths. It is not recommended for most asymptomatic patients.

Conclusion

- In this study out of 60 patients, 15 patients had acute cholecystitis, of 3 patients had easy surgery and 12 had difficult surgery.
- Out of 60 patients, 44 patients had history of gall bladder disease symptoms. Of which 24 patients had easy surgery and 20 had difficult surgery.

References

1. Courtney M, Townsend Jr, R Daniel Beauchamp, B Mark Evers, Kenneth L Mattox, Biliary tract. Sabiston text book of surgery.17th Edn. Philadelphia: Elsevier Publication; c2005. p. 1597-1643.
2. Sir Alfred Cuschieri. Disorder of the biliary tract. Text book of surgery, Sir Alfred Cuschieri. 4th edition. Arnold Publication; c2002. p. 375-453.
3. Benson EA, Page RE. A practical reappraisal of the anatomy of the extra hepatic bile ducts and arteries. Br. J Surg Endosc. 1995 Oct;09(10):1081-1084.
4. Rocko JM, Di Gioia JM. Calot's triangle revisited. Surgery, gynecology & obstetrics.

- 1981 Sep;153(3):410-4.
5. Werner I, Kazutomo I. Release in Man, correlation of blood levels with gallbladder contraction. *Ann of surg.* 1981;194:321-327.
 6. Persson CGA. Adrenoreceptor in gallbladder. *Acta Pharmacologia.* 1972;32:177-185.
 7. Johnston DE, Kaplan MM. Pathogenesis and treatment of gallstones. *New England Journal of Medicine.* 1993 Feb 11;328(6):412-21.
 8. Blumgart LH. Gallstones and gallbladder. *Text book of Surgery of liver and biliary tract* L H Blumgart, Y Fong. Harcourt Publishers; c2002. p. 617-791.
 9. Yio XY, Jin B, Yin FZ, Li XJ. Bile secretory immunoglobulin A in biliary infection and cholelithiasis. *Gastroenterology.* 1992 Mar 31;102(3):1000-8.
 10. Cabral DJ, Small DM. Physical chemistry of bile. In: *The salivary handbook of physiology. Section 6, the gastrointestinal system. Salivary, gastric, pancreatic, and hepatobiliary secretion.* Bethesda. American Physiological Society. 1989;3:621-62.