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Clinical study and management of cholelithiasis

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Abstract

OBJECTIVES: Gallstones are the major cause of morbidity and mortality throughout the world. With atleast 10 % of the adults have gallstones with a recent rise in the incidence due to change in the dietary factors. This study intends to know its various modes of presentation, treatment, outcome.

METHODS: This is a prospective studyconducted atDepartment of General Surgeryin a Tertiary care Teaching HospitalfromMay 2020 – April 2021. About 50 consecutive cases were admitted, examined, investigated and operated. An unrestricted materials and methods are gathered . Detailed history of all the 50 cases were taken according to the proforma . Information regarding the age, religion, socio economic status, nature of the symptoms, duration of the symptoms, past history of similar complaints, diet history, history of OCP.

RESULTS: The highest age incidence of cholelithiasis was in the 5th decade, more common in females. Pain abdomen was the most common symptom. Ultrasonography showed gallbladder stones in all patients and 52% of patients undergone open cholecystectomy, 48% of patients undergone laparoscopic cholecystectomy. The conversion rate of lap to open cholecystectomy was 4%. The operating room time and the length of post operative stay were 65min and 7 days in open cholecystectomy and 85min and 3 days in lap cholecystectomy.

INTERPRETATION AND CONCLUSION: The result showed cholelethiasis was more common in females, 5th decade, presented most commonly with pain abdomen. Ultrasonography was the most common investigation. Laparoscopic cholecystectomy reduces the number of hospital days, pain & disability.

KEYWORDS: Cholelethiasis, ultrasonography , cholecystectomy.

INTRODUCTION

The prevalence of gallbladder stone varies widely in different parts of the world. In India it is estimated to be around 4%. An epidemiological study restricted to rail road workers showed

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that north Indians have 7 times higher occurance of gall stone as compared with south Indians[1,2].

There has been a marked increase in the incidence of the gall stone in the west during the past century[3]. In the united states the autopsy series have shown gall stones in atleast 20% of women and 8% of men over the age of 40 years[4].

It is estimated that atleast 20 million persons in the united states have gall stones and that approximately 1 million new cases of cholelithiasis develop each year. Prevalence in Europe is 18.5% from the autopsy studies with the lowest prevalence from Ireland[5%] and the highest from Sweden[38%]. In Australia the prevalence rate varies from 15% to 25%. Highest prevalence in pima Indian tribe of Arizona.with total and female prevalence of 49% and 73% respectively[3,5]. Gallstones are rare in Africa with prevalence of less than 1% and in Japan it has been increased from 2% to 7%[3].

Diagnosis of gall stone is by proper history and physical examination and combining it with appropriate investigation which varies from surgeon to surgeon and hospital to hospital and country to country.

Changing incidence in India is mainly attributed to westernization and availability of investigation that is ultrasound to urban as well as rural area and also because of increase affordability due to change in the socio-economic structure and the cost of investigations.

Because of increase incidence of gall stones and its variable presentations in India as well as in the west, there is a great need for a study which can provide the information regarding the prevalence of the disease, various clinical presentation and management, outcomes of the cholelithiasis.

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AIMS AND OBJECTIVES

1. To study the various modes of presentation.
2. To study the various treatment available and its outcome.

MATERIALS AND METHODS

This is a prospective studyconducted atDepartment of General Surgeryin a Tertiary care Teaching HospitalfromMay 2020 – April 2021.About 50 consecutive cases were admitted, examined, investigated and operated. An unrestricted materials and methods are gathered . Detailed history of all the 50 cases were taken according to the proforma . Information regarding the age, religion, socio economic status, nature of the symptoms, duration of the symptoms, past history of similar complaints, diet history, history of OCP. Alcohol ingestion, diabetes were obtained. All patients 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 speciality 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, concerned 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. In this study sum of the patients undergone open cholecystectomy and some of the patients undergone lap cholecystectomy because of the reasons like previous operation, obese patient and affordability. A sub hepatic tube drain was used in patients who undergone open cholecystectomy and connected to urosac bag.

The abdominal wound was closed in layers. The gallstones was 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. Suitable treatment given according to the need. Antibiotics were given and subsequently changed according to the bile culture and sensitivity report. Patients who undergone lap cholecystectomy were discharged on the third day and open cholecystectomy 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.

RESULTS

This study includes a total of 50 cases that were studied prospectively over a period of 2 years.

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Table 1: Presenting symptoms Symptoms

	No of cases	**%**	**Alok sharma series**	**%**	**Ganey's series**	**%**
pain	49	98	58	100	987	95
Nausea/Vomiting	28	56	48	82.8	576	55.6
Jaundice	7	14	3	5.17	101	10
dyspepsia	12	24	5	8.62	222	21
Fever	4	8	NA	0	92	9

Table 2: Presenting signs

SIGNS	**NO.OF CASES**	**%**
Tenderness	48	96
Guarding	15	30
Mass	4	8

Table 3: Ultrasound findings

Finding on ultrasonography	**No.of cases**	%
Stones in gall bladder	50	100
Solitary stones	12	24
Multiple stones	38	76
Bile duct stones	7	14
Thickening of gall bladder	40	80
Dilated bile duct	6	12
Mass	4	8

Ultrasound scanning of the abdomen was done in all patients. 43 patients had stone in gallbladder, 7 patients had stone in both gallbladder and common bile duct.

Table 4: Type operation

Type of operation	**No.of cases**	**%**
Laproscopic cholecystectomy	**24**	**48**
Open cholecystectomy	**26**	**52**

In the present study 26 patients undergone laparoscopic chplecystectomy and 24 patients undergone open cholecystectomy.

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Table 5: OPERATION

Operation	**Operating room time**	**Barkern et al**	**Trondsen et al**
Open cholecystectomy	65 min	73 min	50 min
Laparoscopic cholecystectomy	85 min	86 min	100 min

The operating room time for open cholecystectomy was 65min and lap cholecystectomy was 85min.

Table 6: Complications

Post operative complication	Open cholecystectomy	Laparoscopic cholecysectomy	Total
Wound infection	2	1	3
Haemorrhage	0	0	0
Retain stone	0	0	0
Bile leak	1	0	1
Prolong ileus	0	0	0
Intra operative complication	**Open cholecystectomy**	**Laparoscopic cholecysectomy**	**Total**
Bile duct injury	1	1	2
Total complications	4	2	6

Table7: Post-operative hospital stay Operation

	Length of stay	**Barkern et al**	**Trondsen et al**
Opencholecystectomy	7	4	4
Laparoscopic cholecystectomy	3	3	3

Post operative length of stay was 7 days for open cholecystectomy and 3 days for lap cholecystectomy.

DISSUSSION.

Pain was the predominant symptoms in the present study with 98%. The commonest site of pain was in the Rt. Hypochondrium, & the next commonest site was Epigastrium. 5 patients complained of pain radiating to the back. 48 patients had chronic Recurring pain, 2 patients had acute onset of pain, pain was colicky in nature. 13 patients had Dull aching pain, 33 patients had Colicky pain. Similar presentations were noted in the series of Alok Sharma, Ganey series, Goswitz et al series [6,7,8]. 56%(28 patients) of cases in the present series had nausea/ vomiting. Vomiting was spontaneous, occurred mostly during the attack of pain. In

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the present study 7 patient had jaundice. The cause of the jaundice was stone the common bile duct. The common bile duct were explored in these patients & stone were removed. 24 %(12 patients) of patient had dyspepsia. The Endoscopic examination in these patients did not reveal any pathology. On ultrasound examination, these patients had Gall stones. The dyspepsia was relieved after these patients undergone Cholecystectomy. Fever was present in 4 cases in the present study. Fever was secondary to cholangitis due to Billary obstruction. The fever occurred as a part of Charcots triad. Fever was of moderate degree. All the patients were treated conservatively.Past history showed nothing significant in any of the cases taken for the study. 34 patients had mixed diet out of 50 patients. And 10 patients were alcoholic. & 7 patients were obese.

The 43 patients were moderately built & nourished, 7 patients were obese. These observations are against the time-honoured aphorism that fat people are more prone for this disease. 6 patients were diabetic & 7 patients were Hypertensive. Sickle Cell Anemia was present in 6 patients with pallor who were corrected with blood transfusion.

Tenderness in the Rt. Hypochondriam was present in 48 patients guarding was present in 15 patients. A positive Murphy's sign present in 7 patients. A mass was felt in 5 patients. The mass could be due to distention of gallbladder are adherent omentum over laying the inflamed gallbladder.

All the patients undergone routine hematological & biochemical investigations. The hemoglobin of patients ranged from 5 to 15 gm %. Serum bilurubin was raised in 7 patients, there bilurubin levels ranged form 1.8 to 5 mg %.

Ultrasound scanning was done in all patients, all the cases revealed stone in the gall bladder. 43 patients had stones in the gall bladder only, 7 patient had stones in both gall bladder & common bile duct. 24 %(12 patients) had solitary stones in gall bladder, 76%(38 patients) had multiple stones in gall bladder. Thickening of gall bladder was present in 80%(40 patients) of the cases. Dilatation of the common bile duct more than 1.5 cm was present in 6 patients. Mucocele ofthe gall bladder was present in 4 cases. Many of the features in my study were similar to studies of major Alok Sharma et al[6].

A hemoglobin level of 10 gms was accepted for the surgery. Blood transfusion was given to selected patients to improve the hemoglobin level. 2 cases diagnosed as acute Cholecystitis were managed conservatively with IV fluids, nasogastric aspiration, antibiotics, & analgesics. These patients were treated conservatively & were then offered surgery after 6 weeks. All diabetic patients were maintained on plain insulin injection in the preoperative period. Associated medical illness was treated accordingly before taking the patient to surgery.

In the present study 26 patients undergone open cholecystectomy & 24 patients undergone Lap cholecystectomy. The conversion rate from lap to open cholecystectomy was 4%. Which was similar to studies of Mark et al(4.3%)[9]. The conversion rate was 7% in Katherine et al [10], 2.2 % in Linder et al[11].

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The most common incision used in open cholecystectomy was Rt. Sub costal Incision, which was used in 24 patients, 2 patients were operated through Rt. Paramedian. In 21 cases, duct first method was done & in 5 patients, fundus first method was done. The reason for fundus first method was dense adhesion. The duct first method was the method of choice. Intra operatively in 5 cases gallbladder were distended. Among them in two case omentum was present over the gallbladder. In the present study only one patientundergone intraoperative cholangiography. The common bile duct was explored in 7 patients and stones were retrived. In 2 patients CBD was closed with T—tube drainage.In laparoscopic cholecystectomy Calot's triangle was identified and reverse Calots dissection was done first, followed by dissection of ventral aspect by mobilising the infundibulum.

The operative room time for open cholecystectomy was ranged from 55min to 100min,with approximate average time being 65 min, & lap cholecystectomy was Ranged from 70min to 100min, with approximate average time being 85 min.

All the patients were given IV fluids, Nasogastric aspiration was done, and antibiotics and analgesics were given. Drainage tube was removed between 3 to 10 days based upon the drainage. T-Tube cholangiogram was performed in 2 patients and T-Tube was removed after confirmation of the patency of the duct.

In the present study wound infection was the most common complication, which was 6%. The wound infection rate in the study of Margret et al was 6.3%. [12] 1 patient had bile leakage through the drain tube, the patient was managed conservatively and the patient improved. In this case drain was removed on the 7th day.

In the present study 48 patients were reported as having chronic Cholecystitis & 2 patients were reported as having acute Cholecystitis.

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.

CONCLUSION

Ultrasonography was the investigation of the choice. It showed multiple gallstones and thickening of the gallbladder in the majority of cases.The conversion rate from laparoscopic cholecystectomy to open cholecystectomy was 4%. Subcostal incision was the most common incision used for open cholecystectomy and next being the right paramedian.Wound infection was the most common complication.Chronic cholecystitis was the most common histopathological finding, there was no case of gallbladder carcinoma and there was no mortalities in the present study.Laparoscopic cholecytectomy reduced the number of stay in the hospital, pain and disability as compared to open cholecystectomy.

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