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Overview of Cholelithiasis and Outcome of Laparoscopic Management in a New Medical College – a single unit Study.

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Introduction*: The purpose of this study was to evaluate the clinical presentations, demographic data and outcome of laparoscopic management of Cholelithiasis in a new medical college hospital of North Eastern state of India.* ***Methods****: The study comprised of 100 patients with cholelithiasis who had undergone Laparoscopic Cholecystectomy in a single unit of General Surgery of Zoram Medical College Hospital, Mizoram, India, during the period of November 2017 to October 2019. Patients with Choledocholithiasis, Empyema and Carcinoma of Gallbladder were excluded.* ***Results****: The most common clinical presentation in our study was abdominal pain/colic which occurs in 90 % of the cases, other associated complaints were nausea, bloating, belching, fever and jaundice. Age group of forties to fifties constituted majority of case. Few post-operative complications like port site infections, two cases of bile leakage and one common bile duct injury were encountered.* ***Conclusion:*** *Abdominal pain remains the most common presentation of cholelithiasis and Laparoscopic cholecystectomy is a procedure of choice for treatment of cholelithiasis even in a new medical college hospital centre where facilities are available in view of its safety and minimal complications*
Key words: *Abdominal pain, Cholelithiasis, Laparoscopic Cholecystectomy, Bile leakage, bile duct injury*
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I. Introduction

Biliary diseases constitute a major proportion of digestive tract disorder worldwide, with gall bladder pathologies being fore-runner and causing general ill health requiring surgical intervention for total cure[1, 2]. The overall prevalence of Gall Stone Disease (GSD) in most developed nations, including US, UK, Italy and the Scandinavian nations, is between 10% and 20%. The prevalence increases with age in both males and females. At the age of 65, about 30% of women have GSD, and by the age of 80 years, 60% of both males and females have GSD[3]. In India, Khuroo et al[4] have reported a 6.1% (men 3.1% and women 9.6%) prevalence of GSD in Kashmir while Sayeed et al[5] have reported a 4.15% (men 1.99% and women 5.59%) prevalence in Gangetic basin.

Cholecystectomy has been the standard treatment for benign gallbladder diseases and is the most commonly performed elective operation[6]. Langenbuch's classical cholecystectomy has been the gold standard for over a century[7]. Since the mid-1970's surgeons begun shortening the incisions because of the presumed quicker convalescence[8,9]. Mini-cholecystectomy or Small Incision Cholecystectomy (SIC) has been first described more than two decades ago by Dubois and Berthelot and their favorable results have been reported[10]. Soon thereafter, Laparoscopic Cholecystectomy (LC) has been introduced by Philip Mouret in 1987[6]. This technique has been accepted as the gold standard by consensus in 1993, without a high level of evidence for its superiority[11].

Laparoscopic cholecystectomy is the treatment of choice for majority of patients with gallbladder disease[12].However, this requires costly sophisticated equipment and infrastructure apart from the expertise and costly consumables[13]. A period of specialist hand on training is mandatory as short courses are generally unhelpful. Besides, it should only be practiced by those proficient in open biliary surgery. Familiarization with special instruments is crucial. The surgeon has to learn to operate from a two-dimensional television image with a lack of depth or tactile stimulus.

In present setting where there is the poor availability of the resources, scarcity of manpower and affordability being one of the most important factors in determining the quality of healthcare, it is pertinent to assess the outcome especially, in the setting like Zoram Medical College, Mizoram which serves as a referral center for the population of the Mizoram and adjoining states. With the above information, the present study was undertaken at the general hospital of new medical college run by the State government in northeast India.

II. Material & Methods

The study was carried out in the department of General Surgery Unit II which comprised of 100 patients with cholelithiasis who had undergone Laparoscopic Cholecystectomy in a single unit of General Surgery of Zoram Medical College Hospital, Mizoram, India, during the period of November 2017 to October 2019. Patients with Choledocholithiasis, Empyema and Carcinoma of Gallbladder were excluded. Before taking up the study, approval for carrying out the research work was obtained from the Hospital Ethical Committee. Informed Consent was taken for each case. All the patients were subjected to detailed history regarding name, age, sex, religion, address, parity, family/personal history and clinical examination. A pre-designed proforma was used to record the details of the patients who were included in the study.

III. Results And Observation

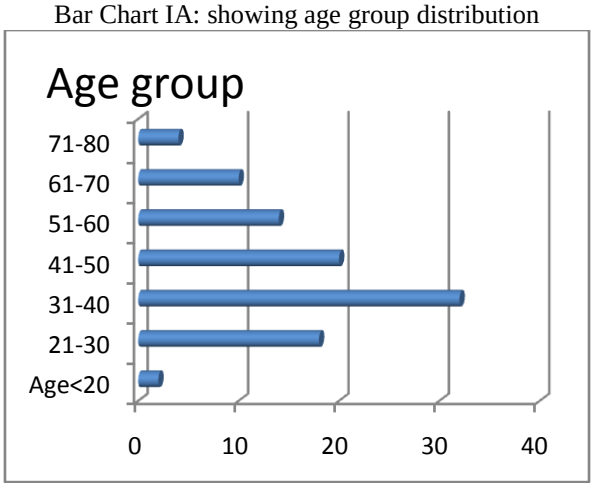
The following observations were made on this study conducted on 100 patients of cholelithiasis operated laparoscopically in the department of General Surgery in a single unit of Zoram Medical College, Falkawn, Mizoram.

Age: The age of patients ranged from 16 to 80 years. The maximum incidence (32%) was found in the age group of 31-40 years.

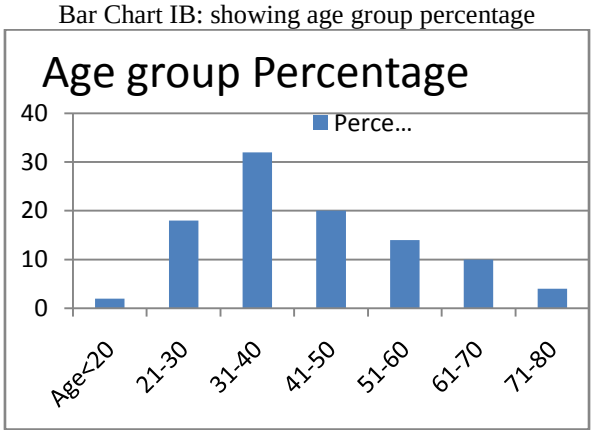
Table I showing age distribution.

Age group	No of cases	Percentage %
11-20	2	2
21-30	18	18
31-40	32	32
41-50	20	20
51-60	14	14
61-70	10	10
71-80	4	4

Bar Chart IA: showing age group distribution



Bar Chart IB: showing age group percentage

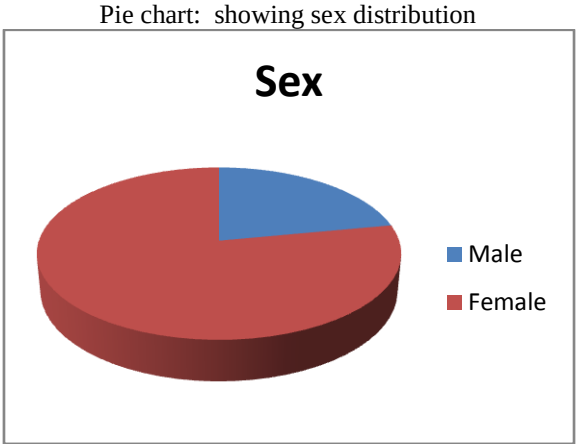


Sex: In this study, there were 78 females and 22 males.

Table II shows sex distribution:

Sex	Cases	%
Female	78	78
Male	22	22

Pie chart: showing sex distribution

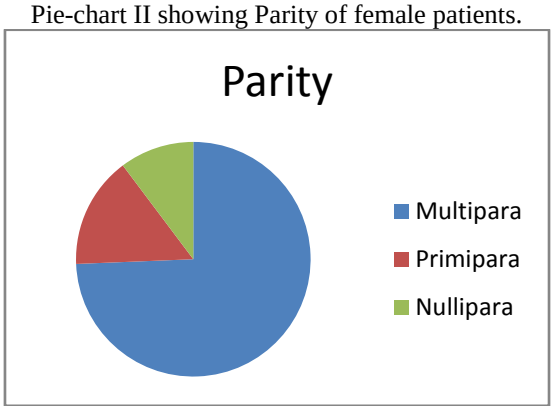


Parity: Out of 78 females, 58 are multipara, 12 are primipara, and 8 cases are nullipara.

Table III: Parity and cholelithiasis

Parity	Cases	%
Multiparity	58	74.35%
Primiparity	12	15.38%
Nulliparity	8	10.25%

Pie-chart II showing Parity of female patients.

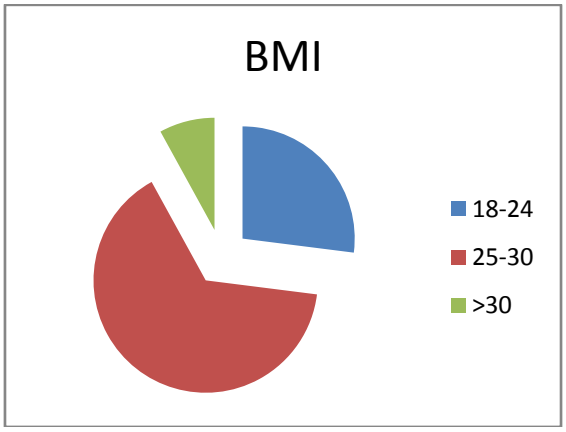


Body Mass Index (BMI): Of the total 100 cases, 27 patients were having normal BMI, 65 were overweight whereas 8 patients were obese.

Table IV: Body Mass Index of cases

BMI	Cases	%
18-25	27	27
26-30	65	65
>30	8	8

Pie-Chart III showing BMI of cases

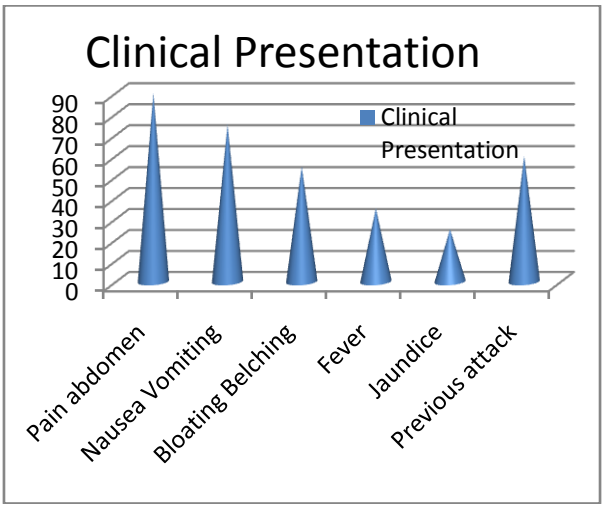


Clinical presentations: In our series, abdominal pain/colic was the clinical presentation almost all the patients. Nausea, vomiting, bloating and belching also occurred in majority of the cases. Other associated complains were fever and jaundice. More than half of the patients gave history of previous similar attack.

Table V: Clinical Presentations

Clinical presentation	Cases	%
Abdominal pain/colic	90	90
Nausea/vomiting	75	75
Bloating/belching	55	55
Fever	35	35
Jaundice	25	25
Previous attack	60	60

Bar chart II: clinical Presentations



Simultaneous procedures: Laparoscopic procedure was converted to open cholecystectomy in 5 (five) cases due to dense fibrotic adhesions where normal anatomy could not be identified. Four patients undergone simultaneous procedure of ureteric calculus by Ureteroscopic lithotripsy, in two cases each, laparoscopic appendectomy and ovarian cystectomy was performed.

Table VII: Simultaneous procedures

Sl no	Other procedures	No. cases
1	Laparoscopy Converted to Open	5
2	Ureteroscopic Lithotripsy	4
3	Laparoscopic Ovarian Cystectomy	2
4	Laparoscopic Appendicectomy	2

Post operative Complications: Post operative nausea vomiting was observed in 6 patients within 6 hours after operation. We found port site infection in the form of redness and indurations in 5 cases and 2 cases of wound discharge. Two patients were found to develop pain abdomen and distention after 1 week of operation both of them were re-operated and were found to have slippage of cystic duct clip. One patient had total transection of common bile duct due to misidentification of cystic duct intraoperatively who was converted to open and hepaticojejunostomy was performed and patient recovered well.

Table VIII: Post operative complications

Sl no	Post Operative Complications	Cases
1	Post Operative nausea vomiting (PONV)	6
2	Port site infection	5
3	Bile leakage	2
4	CBD injury	1

IV. Discussion

The incidence of cholelithiasis increases with advancing age, the possibility of their becoming symptomatic also increases with increasing age. Mohan et al[14] found the maximum number of gallstones in the age group between 31 and 40 years of age comprising of 28.7% cases in their study of morphological spectrum of gallstone diseases in 1100 cholecystectomies in North India, which is comparable to 32% in the same age group in our study.

The incidence of gallstone is much more common in female as compared to male with the ratio of 3.5:1 (78:22) in our study which is nearly similar to the finding of Munesh K et al[15] who found female to male ratio of 4:1 in their study of 50 patients with cholelithiasis. Pundir CS et al[16] analyzed gallstone from 120 patients with cholelithiasis and found that the ratio of female to male was 6:1 which was a little different from our study.

Out of 78 females, 58 (74.35%) are multipara, 12(15.38%) are primipara, and 8 (10.25%) cases are nullipara which is comparable to 77.5% multipara found by Muneesh K et al[15] in their study of Role of Iron deficiency in the formation of gallstone in 50 patients.

The clinical presentations in our study are comparable to the finding of Aroori S[17] in their study entitled Gallstone Disease Revisited. They found that biliary colic is the main complaint in 70-80% of symptomatic patients with gallstone, approximately 90% of cases with acute cholecystitis are associated with cholelithiasis.

More than two-third (73%) patients of our study were found to have BMI value more than normal among which 8 patients were obese. Karam JA and Rosyn JJ observed that over 50% women 45-55 years of age who are classified as morbidly obese have a history of cholelithiasis and gallbladder disease[18].

V. Conclusion

It was concluded that Laparoscopic cholecystectomy is a procedure of choice for treatment of cholelithiasis even in a new medical college hospital centre where facilities are available. Laparoscopic cholecystectomy is found safe and standard management of gallbladder stones with minimal complications. Abdominal pain remains the most common presentation of cholelithiasis. The incidence of symptomatic cholelithiasis is more common in female, overweight, multiparous of fourty-fifty age group with the clinical presentation of pain abdomen, nausea, bloating as in other parts of the country.

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