



STUDY OF HISTOPATHOLOGICAL SPECTRUM OF GALLBLADDER LESIONS IN CORRELATION WITH SERUM LIPID PROFILE

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ABSTRACT

Introduction: Gallbladder diseases is one of the common GIT disorder. Various studies have shown correlation between gall stone formation and serum lipid abnormality. **Objective:** The aim of this study is to evaluate the various histological patterns of cholecystectomy specimens and compare the gall stone formation with cholelithiasis patients with control. **Methodology:** The study was conducted in the Department of Pathology- Sree Balaji Medical College and Hospital, Chennai during the period of January 2018-December 2018. Patients of all age group and sexes who underwent cholecystectomy were selected. **Results:** The total number of cases of choelcystectomy were 79 and the No of male-54, No of female- 25 and the mean age group- 44 yrs (21-76 yrs). The predominant lesion noted was calculous cholecystitis- 69 (88%). Abnormal total cholesterol seen in 87.5%, abnormal HDL in 62.5%, abnormal LDL in 87.5% and abnormal TGL seen in 68.5%. **Conclusion:** The cholecystectomy specimens revealed mostly benign lesions. An increased serum lipid profiles was noted in association with many lesions.

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INTRODUCTION

Gallbladder is a pear shaped organ which is affected by a wide spectrum of pathological lesions including inflammation, infection, benign polyps, premalignant and malignant conditions. Cholelithiasis is most common biliary pathology affecting 10-15% of population¹. Risk factors for development of gallstone include female gender, obesity, oral contraceptives, fat rich diet and sedentary lifestyles. It has been suggested that there is altered lipid metabolism in gallstone formation and serum lipid profile of gallstone patients differ from that of healthy individuals³. Chronic cholecystitis occurs after repeated episodes of acute cholecystitis and is mostly due to gallstone. The patients usually presents with right upper quadrant pain, fever and bilious vomiting².

Objectives

- The objective of this study was to evaluate histopathological patterns observed in cholecystectomy specimens.
- To compare serum lipid profile between patients with cholelithiasis and normal laboratory range.

MATERIALS AND METHODS

- This was a retrospective study conducted in the departments of Pathology and Biochemistry of Sree Balaji Medical College and Hospital, Chennai, Tamil

Nadu, over a period of one year from Jan 2018-Dec 2018.

- A total of 79 cholecystectomy specimens of which Gallstones were found in 69 patients.
- The clinical details and laboratory tests were retrieved from computer database.
- For estimation of association of serum lipid profile, cases diagnoses as cholelithiasis were included in the study and cases without gallstone were excluded from the correlation.

RESULTS

A total number of 79 cases of cholecystectomy was received in the year 2018 (January- December) among which gall stones were present in 69 cases. The was a female predominance among all gall bladder lesions when compared with males with a ratio of 2.12:1 (F-53,M-25).The age group of occurrence was ranging from 21 years to 76 years with the mean age group of 44 years. The females showed maximum lesions in the younger age group – 30 to 40 years while males shows maximum shows lesions at 40 to 50 years. The various cases that were noted were Calculous cholecystitis, Chronic cholecystitis, cholecystitis with polyps, cholesterosis, Empyema of gall bladder and Follicular cholecystitis. The predominant lesion observed was chronic calculous cholecystitis(37 cases) and acute on chronic cholecystitis (30 cases) and followed by chronic cholecystitis (6 cases) and the rest of the cases were one each. The females were more

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predominant than males. Among calculous cholecystitis the various cases seen were Acute on chronic calculous cholecystitis, Chronic calculous cholecystitis, acute hemorrhagic calculous cholecystitis and calculous cholecystitis with cholestrelolisis.

Table 1 The total number of cases and percentage of incidence of various histopathological diagnosis.

Diagnosis	Total number of cases	Percentage of Incidence
Ac.Hemorrhagic calculous cholecystitis	1	1.27%
Acute on ch. Calculous cholecystitis	30	37.97%
Ch.calculous cholecystitis	37	48.11%
Chronic cholecystitis	6	7.59%
Acute on ch. follicular cholecystitis	1	1.27%
Ch. Cholecystitis with polyps	1	1.27%
Ch.calculous cholecystitis WITH CHOLESTEROSIS	1	1.27%
Empyema of gall bladder	1	1.27%
Total	79	100%

Table 2 Percentage of patients with gall stones showing abnormal lipid profile

Serum lipid profile	Gall stone patients
Total cholesterol	87.5 %
High densitylipoprotein	62.5 %
Low density lipoprotein	87.5 %
Triglycerides	68.75 %

The lipid profile normal laboratory range used in the lab was taken as standard which is Total Cholesterol : <200mg/dl, TGL (Triglycerides): <150mg/dl, HDL (High Density Lipoprotein):>40mg/dl and LDL(Low Density Lipoprotein) : <100g/dl¹. Among all cases of calculous cholecystitis 12 cases showed increased Total cholesterol { (6 cases ranging between 151-200 mg/dl) (6 cases ranging between 201-250 mg/dl)} ; 10 cases with low HDL (7 cases ranging between 30-40 mg/dl and 3 cases below 30 mg/dl) ; 13 cases with increased LDL (8 cases ranging between 100-119mg/dl and 1 case each in the ranges of 120-149mg/dl, 150-169mg/dl and 160-180mg/dl respectively); 11 cases with elevated TGL levels (9 cases ranging between 150-199mg/dl and 1 cases each in ranges of 200-249mg/dl and 250-300 mg/dl).

DISCUSSION

Cholecystectomy is routinely performed surgical procedure which is usually indicated for symptomatic gallstone. The excised gallbladder is routinely evaluated by histopathological examination which establishes a tissue diagnosis. In present study gallbladder lesions were more common in females than in male with a Female to male ratio of 2.12:1. This finding was similar to other studies who have reported male to female ratio of 1:2.8 and 1:2.6³.

In the present study the most common diagnosis was chronic CALCULOUS cholecystitis (88 % of cases).Other cases observed were chronic cholecystitis, acute follicular cholecytitis, cholesterosis, polyp and empyema of gall bladder. The other studies by Aulakh R *et al*, and Aulakh R^{4,7}, who have reported chronic cholecystitis in 86.2% and 64.8% cases respectively.

Our study revealed, hypercholesterolemia (87.5%), increased LDL level (87.5% Hypertriglyceridemia (68.5%) and low level of HDL (62.5%) are common finding in patients with cholelithiasis which in turn are risk factors for coronary artery disease and stroke⁸. Few other studies have reported no association between gallbladder disease and increased level of serum triglycerides.

CONCLUSION

Our study concludes the female propondarance of gall bladder lesions among all the cases. Routine histopathological examination is of cholecystectomy specimens is necessary to reveal various benign pathologies as well as malignancies of gallbladder^{5,6}. Strong correlation between increased level of serum total cholesterol, triglyceride and LDL along with decreased HDL in patients with gallstone were observed. Periodic health checkups, a perfect diet and a healthy lifestyle is necessary to avoid occurence of gall stones and also prevent CVD and stroke.

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