

A 3 YEARS HISTOPATHOLOGICAL STUDY OF GALLBLADDER AFTER CHOLECYSTECTOMY IN A TERTIARY CARE HOSPITAL

Dr. M. Reeta Devi¹, Dr. L. Nabina², Dr. R.K. Ronal²

¹Associate Professor, ²PG trainee

^{1,2} RIMS, Imphal

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Corresponding author: Dr. M. Reeta Devi

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Abstract

Background: Diseases of the gallbladder are pretty common. Most of the cases admitted in hospitals required surgical intervention and removal. Histopathological routine examination of the resected gallbladder shows a wide range of changes, from inflammatory to different variants and from premalignant to malignancy. This study is undertaken to find the changes in the cholecystectomy specimen along with their gender and age distribution.

Methods: The present retrospective study was conducted in the cholecystectomy specimen received in the department of Pathology, Regional Institute of Medical Sciences (RIMS), a tertiary care hospital during the period of January 2014 to December 2016.

The corresponding blocks are retrieved from the archives of the department, sections are cut and slides are stained with Hematoxylin and Eosin stain, Three representative slides of each specimen are examined.

The aim of this study is to analyse the different histopathological changes of the gallbladder and their distribution in different age groups and as well as in gender.

Results: A total of 1506 cholecystectomy specimen were received in the histopathology section of the department. Out of which, 1282 cases (85.12%) were females while 224 cases (14.88%) were male patients. Female to male ratio is 6:1.

The most common histopathological diagnosis of cholecystectomy specimen was chronic cholecystitis followed by chronic cholecystitis with focal evidence of cholesterolosis and xanthogranulomatous cholecystitis. There were 3 cases of incidental diagnosis of adenocarcinoma gallbladder.

Conclusion: Chronic cholecystitis is the most common disease affecting the gallbladder which with a high rate of occurrence all over the world. The study firmly recommends thorough histopathological examination of all resected gallbladder. Incidental diagnosis of adenocarcinoma further warrants the need for thorough histopathological examination to help in treatment and prognosis.

Keywords: Chronic cholecystitis, cholesterolosis, xanthogranulomatous cholecystitis, incidental adenocarcinoma.

Introduction

The gallbladder is a pear shaped sac attached to the posterior aspect of the right hepatic lobe. It measures upto 10 cm in length and 3-4 cm in width. The gallbladder is divided into fundus, body and neck. The wall of gallbladder is composed of mucosa, muscularis and serosa. There is no muscularis mucosa or submucosa¹.

Three types of epithelial cells are normally found in the mucosa, they are tall columnar, pencil like and basal cells². The muscular layer is made up of haphazardly distributed bundles of smooth muscle fibres¹.

The gallbladder wall may show fibrosis, muscle hypertrophy, encrusted stones or nodular collections

of foamy macrophages. Irregularly shaped tubular structures are present within the wall which are lined by columnar or cuboidal epithelium and traditionally known as Rokitansky Aschoft Sinus¹.

Diseases of gallbladder can be broadly classified into 3 groups (1) Congenital (2) Inflammatory and (3) Tumors i.e. benign and malignant. Cholecystitis is the most common disease affecting the gallbladder. It consists of acute and chronic type and both may or may not be associated with gallstone. Chronic cholecystitis is rarely seen in the absence of gallstone¹. It has been suggested that chronic cholecystitis results from recurrent attacks of acute cholecystitis, many times there is no history of antecedent attacks³. Over 95% of biliary tract disease is attributable to gallstone⁴. Overwhelming majority

of cholecystectomy are done for chronic cholecystitis³.

Material and Method:

This 3 years retrospective study was carried out in the cholecystectomy specimen received in the department of Pathology, Regional Institute of Medical Sciences (RIMS) a tertiary care hospital during the period of January, 2014 to December, 2016.

Inclusion criteria –all hisyologically proved gallbladder is included in the study

Exclusion criteria –those specimens with incomplete data are excluded from the study

Corresponding blocks are retrieved from the archives of the department, sections are cut and slides are stained with Hematoxylin and Eosin stain. Three representative slides of each specimen were studied. The aim of this study is to analyse the different histopathological changes along with their distribution in gender and age group.

Results:

A total of 1506 cholecystectomy specimen were received in the histopathology section of the department. Out of which, 1282 cases (85.12%) were females while 224 cases (14.88%) were male patients. Female preponderance is marked and incidence increases with age. Female to male ratio is 6:1. Table1.

The most common histopathological diagnosis of gallbladder was chronic cholecystitis in 1234 cases (81.9%). This is followed by chronic cholecystitis with evidence of cholesterolosis (14.9%) and xanthogranulomatous cholecystitis (1.9%). Chronic lymphoeosinophilic and chronic active cholecystitis were encountered in 3 cases each (0.19%) whereas chronic follicular and eosinophilic cholecystitis and mucocele were found in 2 cases each (0.13%). Two case of chronic cholecystitis show mild dysplastic changes in the lining epithelium. There was one case (.06%) of ceroid granuloma.

There were 3 cases (0.19%) of moderately differentiated adenocarcinoma gallbladder which are incidentally diagnosed. Table 2.

Regarding age distribution, youngest age encountered in this study was 6 years old while the

oldest was 89 years old, both are female patients. It was observed that maximum incidence of chronic cholecystitis belonged to age group 31-40 years in females and 41-50 years in males. This is followed by 41-50 years in females while in males it is 31-40 years age group. Incidences are lowest in the extremes of life.

Chronic cholecystitis with dysplastic changes in the lining epithelium and 3 incidental diagnosis of adenocarcinoma gallbladder are in the 51-60 years age group. Table-III.

Table 1: Gender Ratio

Female	Percentage (%)	Male	Percentage (%)	Total no. of cases
1282	85.12	224	14.88	1506

Table 1 shows sex wise incidence and ratio Female to male ratio 6:1

Table 2: Histopathological diagnosis of gallbladder

Sl. No.		Number	Percentage (%)
1	Chronic cholecystitis	1234	81.9
2	Chronic cholecystitis with evidence of cholesterolosis	225	14.9
3	Xanthogranulomatous cholecystitis	29	1.9
4	Chronic lymphoeosinophilic cholecystitis	3	0.19
5	Chronic Follicular cholecystitis	2	0.13
6	Mucocele	2	0.13
7	Chronic active cholecystitis	3	0.19
8	Eosinophilic cholecystitis	2	0.13
9	Chronic cholecystitis with dysplastic change in the lining epithelium	2	0.13
10	Adenocarcinoma gallbladder	3	0.19
11	Ceroid granuloma	1	0.06
Total		1506	

Table3:

Age group	Females		Males	
	Number	Percentage	Number	Percentage
0 - 10	3	0.19	1	0.06
11 - 20	72	4.7	15	0.99
21 - 30	274	18.1	34	2.2
31 - 40	364	24.1	52	3.4
41 - 50	307	20.3	55	3.6
51 - 60	191	12.6	44	2.9
61 - 70	59	3.9	14	0.92
71 - 80	10	0.66	8	0.53
81 - 90	2	0.13	1	0.06
	1282	85.12%	224	14.88%

Total no. of cases - 1506

Table 3 shows chronic cholecystitis in different age ranges of males and females

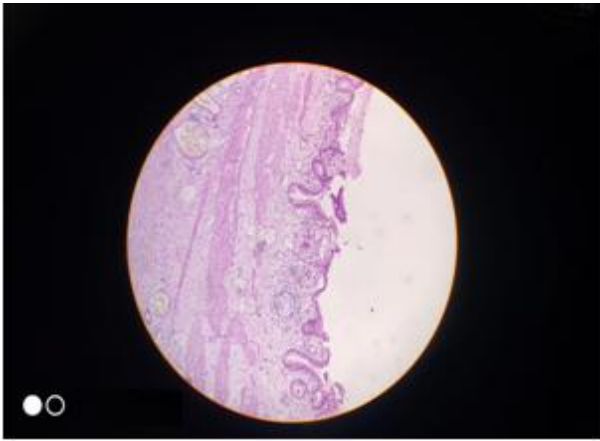


Fig. 1: Picture showing chronic cholecystitis (H&E 10X).

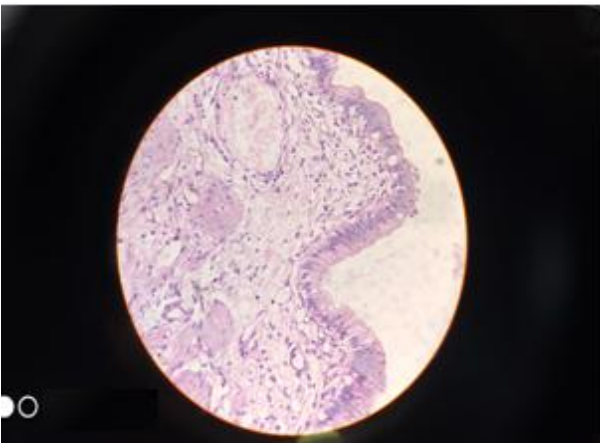


Fig. 2: Picture showing chronic cholecystitis with cholesterosis (H&E 40X).

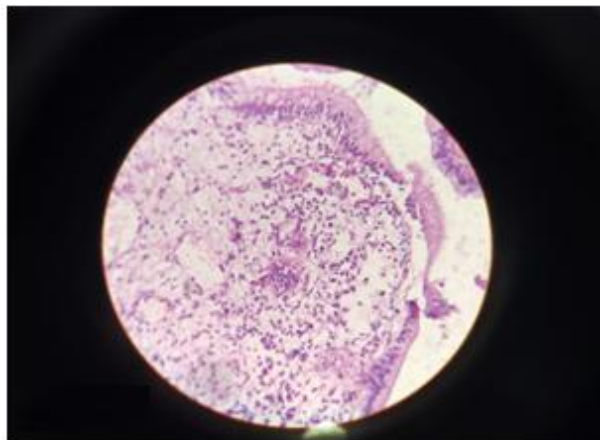


Fig. 3: Picture showing xanthogranulomatous cholecystitis (H&E 40X).

Discussion:

The gallbladder is among the most commonly surgically resected organs and the numbers of

cholecystectomies has increased more than 60% in the last decade³.

Chronic cholecystitis is the most commonly encountered disease of the gallbladder, the overwhelming majority of cholecystectomies are performed for chronic cholecystitis³. Today, cholecystectomy is second only to appendicectomy. Chronic cholecystitis results from repeated attacks of acute cholecystitis. Acute calculous cholecystitis comprises 95% of case while acute acalculous cholecystitis consists of 5% of cases^{3,1}.

The diagnosis of chronic cholecystitis is based mainly in the demonstration of predominantly mononuclear cell infiltrate, fibrosis and/or metaplastic change¹.

In the present study, diagnosis of chronic cholecystitis was encountered in 1234 (81.9%) cases and 225 cases (14.9%) show focal evidence of accumulation of lipid laden foamy macrophages in the lamina propria and also in the lining epithelium in a lesser extent.

Xanthogranulomatous cholecystitis is characterized by the presence of diffuse or nodular collections of foamy macrophages containing neutral fat and lipofuscin. It can mimic gallbladder carcinoma although it is not a malignant lesion. Other chronic inflammatory cells along with Touton or foreign body type giant cells are often present. It was first reported by J.J. McCoy Jr. and colleagues in 1976^{5,6,7}.

Chronic lympho eosinophilic cholecystitis and chronic active cholecystitis were encountered in 3 case each (0.19%). In chronic active cholecystitis, neutrophils are the predominant cells within the epithelium. Chronic follicular cholecystitis is found in 2 case (0.13%) of the study, it is characterized by widespread formation of lymphoid follicles in all the layers of the gallbladder. 2 case of chronic cholecystitis show mild dysplastic changes in the lining epithelium.

There were 3 cases (0.19%) of incidental diagnosis of moderately differentiated adenocarcinoma of gallbladder.

Regarding the gender incidence, there is strong preponderance for female patients with 1282 cases (85.12%) while male contributes 224 cases (14.88%) which is comparable with many studies done by Pundir et al, Zahrani and Mansoor and Laitio⁽⁹⁻¹¹⁾.

The present study reveals that the age incidence of chronic cholecystitis ranges from 6 years to 89 years. The highest incidence was found in the age group of 31-40 years constituting 24.1% of the cases. This was followed by 41-50 years age group. Our finding is in conformity with the finding of Zahrani and Mansoor¹⁰.

The two cases of chronic cholecystitis with mild dysplastic changes in the gallbladder and 3 cases of moderately differentiated adenocarcinoma gallbladder were detected in the age group of 40-50 years and 50-60 years respectively.

In our study, no incidence of congenital anomalies and benign tumors has been encountered. Incidental diagnosis of carcinoma gallbladder proves the thorough histopathological examination of all cholecystectomy specimen¹²⁻¹³.

Conclusion:

Chronic cholecystitis is the most common disease affecting the gallbladder with a high rate of occurrence all over the world. The present study strongly recommends thorough histopathological examination of all resected cholecystectomy specimen. It helps in detecting the various types of chronic cholecystitis. Incidental diagnosis of gallbladder carcinoma further proves the need which helps in their treatment, management and prognosis.

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