

Spectrum of Histopathological Lesions of Gallbladder

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ABSTRACT

Introduction: Gallbladder is one of the organs that are very commonly affected by many pathologies such as chronic cholecystitis, cholesterolosis, xanthomatous cholecystitis and malignant lesions as adenocarcinoma. Current research aimed to study various morphological lesions of gallbladder and to correlate with demographic profile of patient.

Material and methods: A total of 220 specimens were studied in the Department of Pathology, Prasad Institute of Medical Sciences, Lucknow. Tissues were received in 10% formalin, were processed and studied under hematoxylin and eosin stain.

Results: Gallbladder lesions were more common in females as compared to male with M:F ratio of 1:4.5 and were more common in the 4th to 5th decade of life. Most common lesion was chronic cholecystitis (70.4%), 6 out of 220 cases were diagnosed as adenocarcinoma and 4 of them were incidental findings.

Conclusion: Most common cause for cholecystectomy is gallstones and can result in detection of a variety of histopathological lesions ranging from chronic cholecystitis to adenocarcinoma.

Keywords: Gallbladder, Pathologies, Malignant

INTRODUCTION

The gallbladder is a foregut derived organ which is a pear-shaped sac and lies in shallow fossa on the visceral surface of the right lobe of liver.¹ The inferior surface is in close proximity to pylorus, duodenum, and hepatic flexure of colon. On an average, among adult, it is approximately 10 cm in length, 3 to 4 cm wide and 1 to 2 mm in thickness. Its capacity is 40 to 70 mL but may increase upto 100 mL. Free surface is covered by peritoneum while hepatic surface is adherent to liver parenchyma. Fundus protrudes from hepatic edge. The tapered portion of the gallbladder before it joins the neck is the infundibulum. There is a small bulge at the junction of the neck and the cystic duct, known as Hartmann pouch, which is now believed to be a result of chronic inflammation. Gall bladder is supplied by the cystic artery which is the branch of the right hepatic artery. The layers that comprise the gallbladder wall are mucosa (surface epithelium and its lamina propria), smooth muscle, subserosa and serosa, the latter being present only on the free surface. There is no submucosa or muscularis mucosae in the gallbladder.

The gallbladder is among the most commonly surgically resected organs, and the number of cholecystectomies has increased more than 50% in the last decade.² The most common pathology found in gallbladder is cholelithiasis followed by cholecystitis. Gallstones affect 10 - 20 % of

the adult population. Cholelithiasis leads to a variety of histopathological changes in gall bladder mucosa such as acute inflammation, chronic inflammation, cholesterolosis, hyperplasia and carcinoma. Gallstones are also associated with gallbladder carcinoma.³

MATERIAL AND METHODS

The present study was conducted in the Department of Pathology at Prasad Institute of Medical Sciences, Lucknow. The cases were collected from the Department of Surgery at the same Institute. Patients from all the age groups and both genders were included in this study. Relevant clinical information such as name, age, gender, clinical history etc was recorded. Samples were received in 10 % neutral buffered formalin and were studied grossly. Multiple sections were taken and were sent for paraffin embedding. Sections of 4 to 5 micron thickness were cut and stained with Hematoxylin and Eosin (H & E) and studied histopathologically. Data regarding various histopathological changes were collected and analysed using appropriate statistical tools.

RESULTS

A total of 220 cholecystectomy specimens were studied. Cholecystitis and other diseases were more common in females with M:F ratio of 1:4.5. The ages of patients ranged from 11 to 80 years of age with maximum cases in the 4th to 5th decade of life Table-1 & 2).

Out of 220 cases acute on chronic cholecystitis was observed in 11 (5%) of cases while chronic cholecystitis was observed in 154 (70.4%) of cases. Out of 220 cases 180 (82.7%) of cases showed presence of gallstones while 40 (17.3 %) of cases were with gallstones. Most gallstones were mixed type followed by cholesterol type of stones. Mostly multiple small gallstones were seen with large single or two gallstones present in few other cases. On histopathological examination most of the cases were of chronic cholecystitis (70.4%) followed by chronic cholecystitis with cholesterolosis

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How to cite this article: Kumari Manu, Dipti Srivastava, Abhishek Singh. Spectrum of histopathological lesions of gallbladder. International Journal of Contemporary Medical Research 2021;8(6):F5-F7.

DOI: <http://dx.doi.org/10.21276/ijcmr.2021.8.6.7>



Sl. No	Gender	Number	Percentage
1	Male	40	18.2 %
2	Female	180	81.8 %
	Total	220	100 %

Table-1 Gender wise distribution of cases

Sl. No	Age	Number	Percentage
1	11-20	8	3.6 %
2.	21-30	32	14.6 %
3.	31-40	57	25.9 %
4.	41-50	76	34.5 %
5.	51-60	26	11.8 %
6.	> 60	21	9.6 %
	Total	220	100 %

Table-2: Age wise distribution of cases

Sl. No.	Histopathological lesion	Number	%
1.	Chronic Cholecystitis	154	70.4%
2.	Acute on chronic Cholecystitis	11	5%
3.	Cholesterolosis	19	8.6%
4.	Adenomyomatous hyperplasia	06	2.7%
5.	Xanthogranulomatous cholecystitis	06	2.7%
6.	Cholecystitis with metaplasia	18	8.2%
7.	Adenocarcinoma	06	2.7%
	Total	220	100%

Table-3: Histopathological lesions of gallbladder

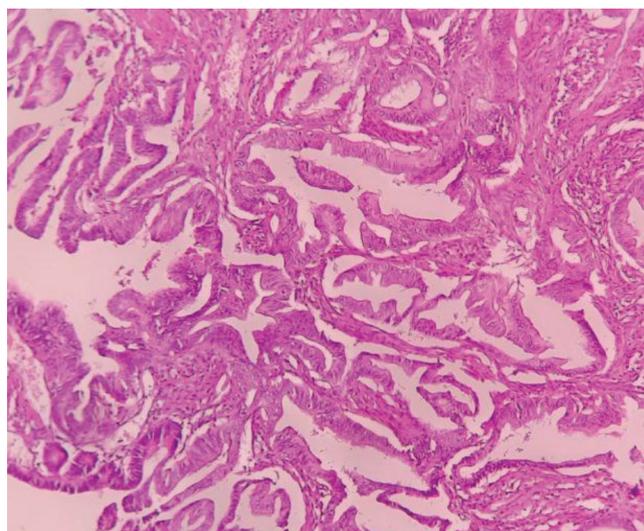


Image-3: Adenocarcinoma gallbladder

(8.6%), chronic cholecystitis with metaplasia (8.2%), acute on chronic cholecystitis (5%), xanthogranulomatous cholecystitis (2.7%), and adenomyomatous hyperplasia (2.7%). Six cases were diagnosed with adenocarcinoma of gallbladder. 4 out of 6 cases of these adenocarcinoma were diagnosed as an incidental finding with no prior suspicion (Table-3).

DISCUSSION

Out of 220 cases 214 cases were non-neoplastic and 6 cases were malignant lesions. Almost 90% of cases showed features of chronic cholecystitis. Most of the cases with chronic cholecystitis were associated with cholelithiasis. In the present study of 220 cases, there were 40 (18.2%) males and 180 (81.8%) females with male to female ratio of 1: 4.5, this is similar to study done by Gupta et al.⁴ Age of the patients ranged from 11years to 80 years and maximum cases were found in the fourth to fifth decade of life. This is in concordance with study done by Gupta et al⁴ and Singh et al.⁶

Gallstones are a major cause of morbidity and mortality throughout the world. They are associated with acute cholecystitis, chronic cholecystitis and its variants and adenocarcinoma. In present study gallstones were found in 82% of gallbladder pathologies similar to study of Duttal et al.⁸

In this study all cases had inflammation predominantly lymphoplasmacytic. Majority of the cases were chronic cholecystitis (71%), followed by chronic cholecystitis with cholesterolosis (19%). In the present study we observed chronic cholecystitis in more than 90 % of cases. This is concordant with study of Duttal et al⁸, Gupta et al⁵, Kafle et al.⁴

Few cases showed adenomatous hyperplasia (2.7%), Xanthogranulomatous changes (2.7%), intestinal metaplasia (8.2%), acute on chronic cholecystitis (5%). Six cases (2.7%) were diagnosed as adenocarcinoma of gallbladder.

Kafle et al⁴ observed intestinal metaplasia in 8.0 % of cases. Gupta et al⁵ observed xanthogranulomatous cholecystitis in

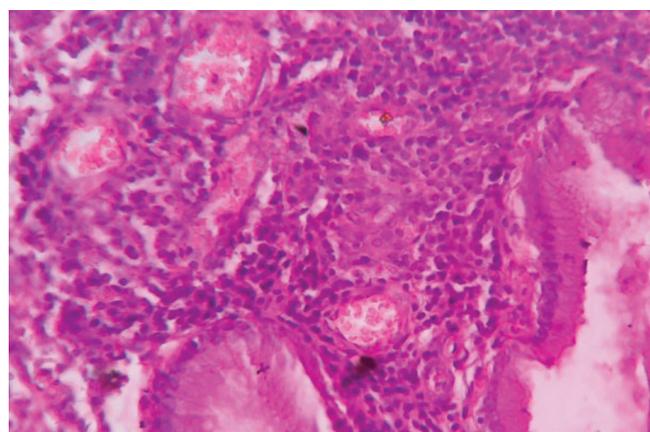


Image-1: Chronic Cholecystitis (40 x 10)

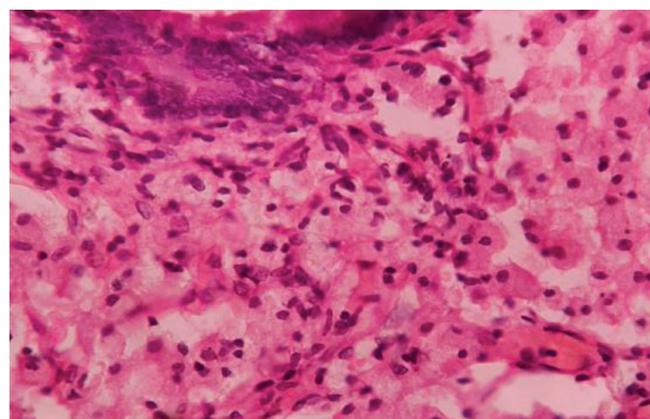


Image-2: Cholesterolosis (40 x 10)

2.07 % of cases, similar to our study. Cholesterolosis was observed in 19 cases (8.6%) in present study, this is similar to study done by Gupta et al⁵ (7.14%). Similarly, acute on chronic cholecystitis was observed in 6.45% of cases by Gupta et al⁵, while Singh et al⁶ observed acute on chronic cholecystitis in only 2 % of cases.

In the present study, 06 cases (2.7%) were of adenocarcinoma of gallbladder. This is in concordance with the study of Gupta et al.,⁵ who observed adenocarcinoma in 1.15% of cases, Kotasthane et al¹⁰ who observed adenocarcinoma in 2.33% of cases. Goyal et al⁹ observed gallbladder carcinoma in 1.27% of cases, Kurkarni et al⁷ observed adenocarcinoma in 0.62 % and adenosquamous carcinoma in 0.62 % of cases.

CONCLUSION

Histopathological lesions of gallbladder include a variety of lesions. These findings were more common in females and present mostly in the 4th to 5th decade of life. Most common histopathological finding was chronic cholecystitis and associated lesions such as acute on chronic cholecystitis, cholesterolosis, xanthogranulomatous cholecystitis, chronic cholecystitis with metaplasia, adenomatous hyperplasia and adenocarcinoma of gallbladder. Most of the lesions of gallbladder are associated with gallstones.

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Source of Support: Nil; **Conflict of Interest:** None

Submitted: 22-04-2021; **Accepted:** 25-05-2021; **Published:** 28-06-2021