

Research Article

Histopathological patterns of gall bladder diseases with special reference to incidental cases: a hospital based study

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ABSTRACT

Background: Cholecystectomy for gall bladder diseases is the most commonly performed surgical procedure world wide. Routine examination of the gall bladder after surgery throw up interesting possibilities including carcinoma. It is the endeavour of this study to quantify the various outcomes in a tertiary level hospital.

Methods: A total of 348 cases of cholecystectomy specimens were studied to evaluate the histopathological patterns with special reference to incidental asymptomatic gall bladder diseases. The cases were investigated and surgically treated. The specimens were fixed in 10% formalin and sent to the department of Pathology GMCH from department of surgery. The age, sex and other hospital details were recorded from the month of May 2015 to August 2015. The specimens were examined grossly and processed routinely. Sections were stained with haematoxylin and eosin. The gross and microscopic findings examined and noted. The study was aimed at assessing the need for histopathological examination in all cholecystectomy specimens.

Results: In our study out of 348 cases of which 92 cases were female and 256 cases were male. The Male: Female ratio was 1:2.8 in our study. Age distribution showed 10 patients were below 20 years, youngest was 11 years. Between 21-30 there were 80 patients, between 31-40 years 82 patients, between 41-50 years there were 83 patients, between 51-60 years 46 patients and above 60 years 47 patients. Nonneoplastic to neoplastic cases which is 1:115 and percentage of neoplastic cases is 0.86% in our study. Histomorphological variants of the 348 cases in our study showed that maximum cases were of chronic calculous cholecystitis (300 CASES) followed by chronic cholecystitis with evidence of cholesterosis (14 cases). 3 cases of adenocarcinoma were detected out of which 2 cases were incidental adenocarcinoma of gall bladder. Out of the 348 cases studied, 30 cases were diagnosed with incidental gall bladder disease during routine investigation for pregnancy, ureteric colic, dysfunctional uterine bleeding and incisional hernia. Out of this 30 cases 5 patients were male and 25 patients were female (ratio 1:5).

Conclusions: Our study strongly recommends routine histopathological examination of all cholecystectomy specimens for detection of various variants of chronic cholecystitis and also of incidental Carcinoma of gall bladder which helps in their treatment and prognosis.

Keywords: Chronic calculous cholecystitis, Follicular cholecystitis, Xanthogranulomatous cholecystitis, Eosinophilic cholecystitis, Incidental gall bladder disease, Adenocarcinoma of gall bladder

INTRODUCTION

Gall bladder is a pear shaped sac attached to the posterior aspect of the right hepatic lobe. In adults it measures

10cm in length and 3-4 cm in width, the wall thickness is less than 3-4 mm. The wall of the gall bladder is composed of three layers mucosa, muscularis and serosa. There is no muscularis mucosa or submucosa.

Gallbladder is one of the organs having a wide spectrum of diseases ranging from congenital anomalies, calculi and its complications, non-inflammatory, inflammatory to the neoplastic lesions. Histopathological variants of gall bladder diseases includes non neoplastic and neoplastic conditions. Non neoplastic conditions are chronic calculous cholecystitis, acute calculous cholecystitis, acute acalculous cholecystitis, eosinophilic cholecystitis, follicular cholecystitis, xanthogranulomatous cholecystitis, cholecystitis granuloma, ceroid granuloma. Benign tumor and tumor like conditions are cholesterol polyps, adenomatous hyperplasia, adenomyomatous hyperplasia, papillomas, adenomas, paraganglioma etc. Malignancies of gall bladder includes most commonly adenocarcinoma and rarely adenosquamous carcinomas, squamous cell carcinoma, small cell carcinoma and sarcomas. Gallstone disease affects 10-15% of the western population,^{1,2} with an annual incidence of 1 in 200.¹

The aim of the study was to

- 1) Evaluate the different histopathological patterns of gall bladder diseases and their incidences, commonest age group and male: female ratio.
- 2) Special emphasis was given on cases with incidental(asymptomatic) gall bladder disease and their histopathological findings were noted.

METHODS

Our study was carried out in the Department of Pathology of Gauhati Medical College and Hospital, Assam, India, for a period of four months from May 2015 to August 2015. Total of 348 cholecystectomy specimens were studied out of which 30 cases had incidental gall bladder disease. The specimens fixed in 10% formalin were received from the department of Surgery of Gauhati Medical College and Hospital.

The surgically resected specimens were fixed in 10% neutral buffered formalin and embedded in paraffin. For the cases without any gross abnormality standard three sections were taken including fundus, body and neck. In cases with any growth, irregularity in the wall, calcification, necrosis etc more sections were taken. Haematoxylin and eosin staining was done. Apart from this special stains like mucicarmine, PAS and IHC was done where necessary. The asymptomatic cases were separated and their histopathology findings were also noted.

RESULTS

Table 1: Showing Sex Distribution.

Sex	No of Cases	Percentage	M:F
Male	92	26.4%	1:2.8
Female	256	73.6%	

Table 1 shows sex distribution of 348 cases of which 92 cases were female and 256 cases were male. The Male: Female ratio was 1:2.8 in our study.

Table 2: Showing Age Distribution Of Gall Bladder Diseases.

Age Group	<=20	21-30	31-40	41-50	51-60	>60	Total Cases
No of Cases	10	80	82	83	46	47	348

Table 2 shows age distribution of gall bladder of 348 cases. 10 patients were below 20 years, youngest was 11 years. Between 21-30 there were 80 patients, between 31-40 years 82 patients, between 41-50 years there were 83 patients. The incidence of chronic calculous cholecystitis was found to be 86.2% with female preponderance (m:f of 1:2.8) between 51-60 years 46 patients and above 60 years 47 patients. So the peak age incidence was between 41-50 years followed by 31-40 years.

Table 3: Showing Ratio of Neoplastic And Non Neoplastic Cases Of Symptomatic Cases.

Type	No Of Cases	Ratio of Non Neoplastic : Neoplastic
Non Neoplastic	345	1:115
Neoplastic	3	
Total	348	

Table 3 shows ratio of non neoplastic to neoplastic cases which is 1:115 and percentage of neoplastic cases is 0.86% in our study.

Table 4 shows histomorphological variants of the 348 cases in our study. Maximum cases were of chronic calculous cholecystitis (300 cases) followed by chronic cholecystitis with evidence of cholesterosis (14 cases). 3 cases of adenocarcinoma were detected out of which 2 cases were incidental adenocarcinoma of gall bladder.

Out of the 348 cases studied, 30 cases were diagnosed with incidental gall bladder disease during routine investigation for pregnancy, ureteric colic, dysfunctional uterine bleeding and incisional hernia. Out of this 30 cases 5 patients were male and 25 patients were female (ratio 1:5). The patients underwent Laparoscopic cholecystectomy. Two cases were converted to open cholecystectomy and two cases were reoperated with wide excision after diagnosis of carcinoma. On histopathological examination all cases were diagnosed as chronic cholecystitis except two diagnosed as Adenocarcinoma of gall bladder.

Table 4: showing histomorphological variants of gall bladder diseases.

Histomorphological Variants	Number of Cases	Percentage
Chronic Calculous Cholecystitis	300	86.2%
Follicular Cholecystitis	4	1.3%
Acute Calculous Cholecystitis	5	1.6%
Acute Acalculous Cholecystitis	3	0.94%
Chronic Cholecystitis With Evidence Of Cholesterosis	14	4.4%
Chronic Cholecystitis With Evidence Of Intestinal Metaplasia	2	0.62%
Gall Bladder Shows Poor Presentation With Autolytic Changes And Features Of Chronic Cholecystitis	6	1.89%
Xanthogranulomatous Cholecystitis	4	1.3%
Chronic Cholecystitis With Dysplastic Changes	4	1.3%
Chronic Cholecystitis With Nonspecific Lymphadenitis	2	0.62%
Eosinophilic Cholecystitis	1	0.31%
Adenocarcinoma Of Gall Bladder	3	0.94%

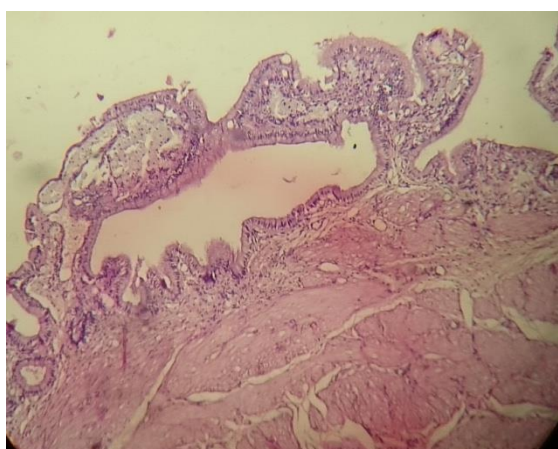
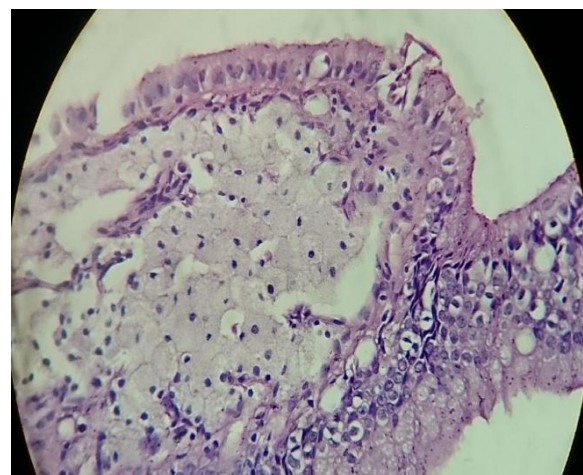


Figure 1: Photomicrograph of chronic cholecystitis with evidence of cholesterosis [low power view].



Photomicrograph of chronic cholecystitis with evidence of cholesterosis [high power view]

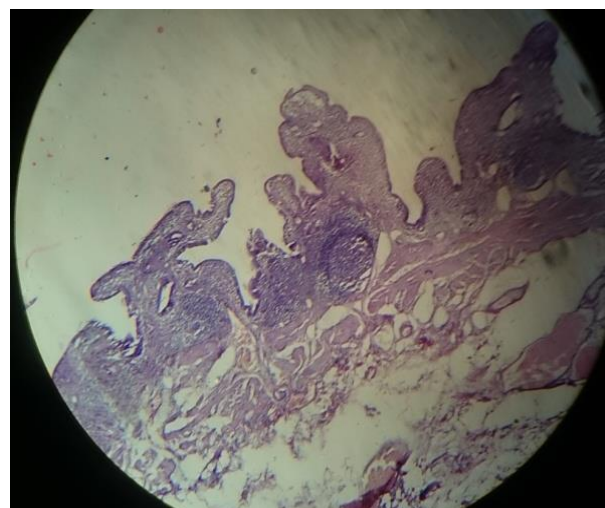


Figure 2: Photomicrograph of follicular cholecystitis [low power view].

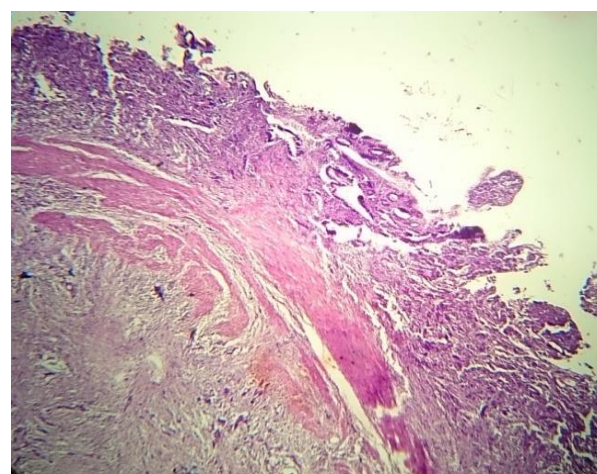


Figure 3: Photomicrograph of adenocarcinoma gall bladder [low power view].

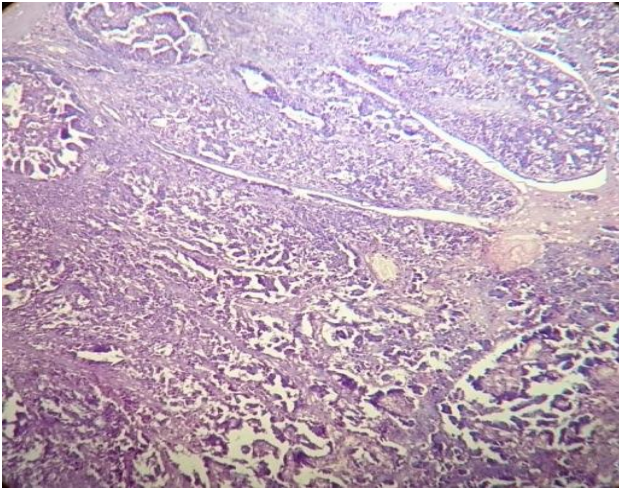


Figure 4: Photomicrograph of adenocarcinoma gall bladder [low power view].

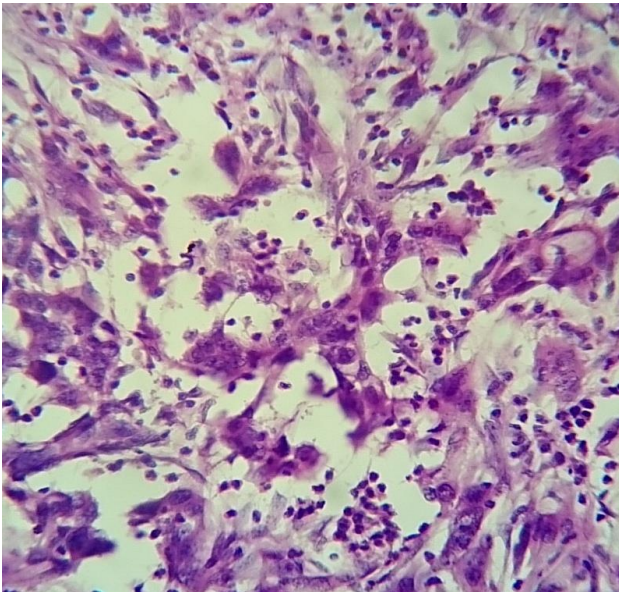


Figure 5: Photomicrograph of Adeno carcinoma of gall bladder [High power view].

DISCUSSION

In our study, lesions of gall bladder were more common in females than in males with a male: female ratio of 1:2.8 (Table 1) which are similar to other studies which showed (1:3) and (1:2.8).^{3,4}

Out of 348 cases, 300 cases were diagnosed as chronic calculous cholecystitis. They had come to the surgery OPD after bouts of pain abdomen in the right hypochondrium in the recent past. After proper investigation they were diagnosed as chronic calculous cholecystitis after which they underwent laparoscopic cholecystectomy for the removal of the diseased gall bladder. Histopathological examination confirmed the cases as chronic calculous cholecystitis (86.2%), its variants like follicular cholecystitis (1.3%), chronic

cholecystitis with evidence of cholesterosis (4.4%), Xanthogranulomatous cholecystitis (1.3%), eosinophilic cholecystitis (0.31%), chronic cholecystitis with evidence of dysplastic changes (1.3%), chronic cholecystitis with non specific lymphadenitis (0.62%). Studies have also been reported that majority of the non neoplastic lesion of the gall bladder occurred in 3rd and 5th decades,^{5,6} which is similar to our studies (Table 2). Chronic cholecystitis occurs after repeated episodes of acute cholecystitis and is almost always due to gallstones.¹² Chronic cholecystitis may be asymptomatic, may present as a more severe case of acute cholecystitis, or may lead to a number of complications such as gangrene, perforation, or fistula formation.^{7,8}

Xanthogranulomatous cholecystitis is a rare form of chronic cholecystitis which mimics gallbladder cancer although it is not cancerous,^{9,10} It was first discovered and reported in the medical literature in 1976 by J.J. McCoy, Jr., and colleagues.^{9,11}

Gallbladder cancer appears to develop from dysplastic mucosa that progress to carcinoma in situ and then to invasive carcinoma.⁵

8 cases who attended surgical emergency with acute pain abdomen underwent laparoscopic cholecystectomy. Histopathological examination revealed 3 (0.94%) of these cases as acute acalculous cholecystitis while 5 (1.6%) were diagnosed as acute calculous cholecystitis.

3 cases (0.94%) were diagnosed on histopathological examination as Adenocarcinoma of gall bladder of which 2 (0.57%) were asymptomatic (incidental) finding on routine ultrasonography. One was a 55 year old male Caucasian who had undergone routine USG as part of master health check up and the other was a 46 year old female. Studies have shown that incidental gallbladder carcinoma is found in about 0.5-1.1% of cholecystectomies for gall stone diseases^{2,6} which was similar to our study [0.57%]. Gallbladder cancer is the most common cause of death from biliary malignancies.⁷ The incidence of gallbladder cancer is reported to be higher in certain geographic areas, like the Karachi to Kolkata belt in the Indian subcontinent.¹⁵⁻¹⁸

Major limitation of our study was the shorter study period and less number of cases

CONCLUSION

The incidence of chronic calculous cholecystitis was found to be 86.2% with female preponderance (m:f of 1:2.8). Our study strongly recommends routine histopathological examination of all cholecystectomy specimens for detection of various variants of chronic cholecystitis and also of incidental Carcinoma of gall bladder which helps in their treatment and prognosis.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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