

HISTOPATHOLOGICAL SPECTRUM OF CHOLECYSTECTOMY SPECIMENS –A PERSPECTIVE FROM A NORTHEASTERN STATE OF INDIA

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Abstract

Background: Cholecystectomy specimens are one of the most commonly received specimens in pathology departments. Histopathology examination of all resected gall bladder specimen is currently a routine practice in most centers. Gall bladder disease have a spectrum of histopathology on microscopic examination which are often under appreciated. The aim is to analyse the range of histopathology detected in cholecystectomy specimens received in pathology department of Jawaharlal Nehru Institute of Medical Sciences (JNIMS), Imphal. **Materials and Methods:** A retrospective study of gall bladder specimens from Aug 2021 to Aug 2023 received in the department of pathology, JNIMS, Imphal. A total of 718 specimens were studied. **Result:** Most common pattern noted was of chronic cholecystitis 603(89.9%) followed by chronic active cholecystitis 21(2.9%) cases. Other cases were xanthogranulomatous cholecystitis 9(1.2%), follicular cholecystitis 6(0.8%), adenomyomatous hyperplasia 3(0.4%) and eosinophilic cholecystitis 3(0.4%). One case of angiodysplasia was noted. Incidental gall bladder carcinoma was detected in 6 cases. Mild to moderate dysplasia was seen in 24 cases and severe dysplasia in 17 cases. **Conclusion:** Histopathological examination of cholecystectomy specimens is necessary to confirm the diagnosis and to rule out presence of dysplasia and incidental carcinoma.

INTRODUCTION

Cholecystectomy(open/laparoscopic) performed for patients with gallstone disease and benign gallbladder conditions has become the commonest surgical procedure performed worldwide.^[1,2] It is routine standard practice for surgeons to submit all gallbladders removed surgically to be sent for histopathology to exclude any gallbladder pathologies that can have significant impact on management of patients like gallbladder malignancies.^[3,4] A spectrum of diseases can be observed in the resected gall bladder ranging from congenital anomalies, cholelithiasis, inflammatory and noninflammatory diseases to noninvasive and invasive neoplastic diseases.^[1,2,5]

Aim and Objective

To analyse the range of histopathology detected in cholecystectomy specimens received in Department

of Pathology, Jawaharlal Nehru Institute of Medical Sciences (JNIMS), Imphal.

MATERIALS AND METHODS

Type of Study: Retrospective study

Study Period: 2 years (August 2021 to August 2023)

Sample: 714 gall bladder specimens received in the Department of Pathology, JNIMS during the study period.

Data Collection Procedure: Details of gross examination and histopathological data were analysed from records. Patient details were retrieved from requisition forms. Tissue bits were taken from representative areas of the fundus, body and neck of the gall bladder and additional tissue bits sampled from thickened or abnormal appearing areas.

RESULTS

A total of 714 gall bladder specimens were evaluated during the study period. Out of those 559(78.3%) were women and 155(21.7%) were men with M:F ratio of 1:4. Mean age was 45 years with age ranging from 9-87 years. 99% of the specimens revealed benign pathology with most common pathology being chronic cholecystitis followed by chronic active cholecystitis. 6 cases (0.9%) were diagnosed as incidental gall bladder carcinoma on histopathological evaluation, out of which 5 were females and 1(one) was male. All the cases were histologically Adenocarcinoma. These cases were not suspected of malignancy either on preoperative evaluation or intraoperative evaluation. Association with cholelithiasis was observed in 5/6 cases. [Table 1]

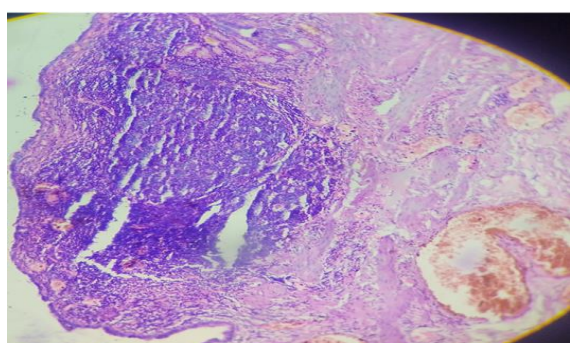


Figure 1: Follicular cholecystitis (lymphoid follicle, 400X)

Out of the six cases, diffuse thickening of the gallbladder wall was seen in three cases and localized growth in the form of focal thickening of the wall in two cases, and one was a shrunken gall bladder.

According to the TNM staging, 2 cases were found to be in PT1a stage and 3 cases to be in PT1b with 1(one) being in PT2 stage.

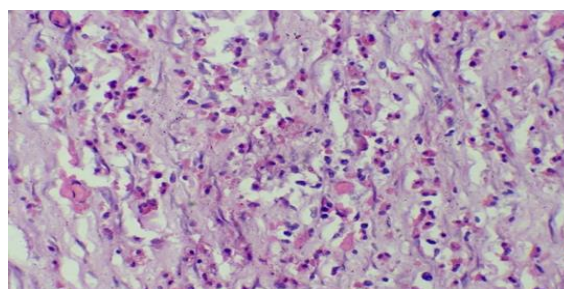


Figure 2: Eosinophilic Cholecystitis (H and E stain showing eosinophils in the muscularis,400X)

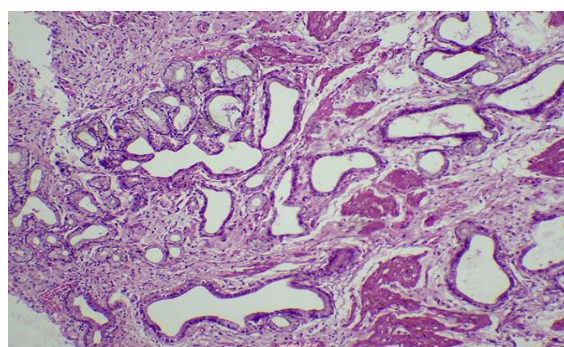


Figure 3: Adenomyomatosis (H and E stain,400X)

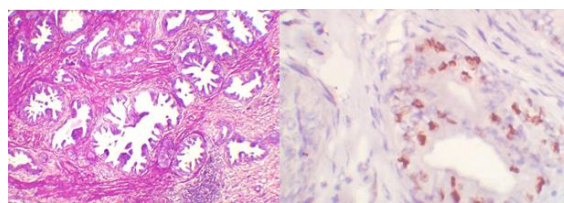


Figure 4a: Adenocarcinoma GB (400X, H&E). 4b: Adenocarcinoma GB (Ki 67 positive)

Table 1: Spectrum of histopathologic changes in cholecystectomy specimens.

Sl.no	Histologic findings	No. of cases
1.	Chronic cholecystitis	645(90%)
	a. Chronic cholecystitis with cholesterolosis	86
	b. Chronic cholecystitis with cholelithiasis	116
	c. Chronic cholecystitis with Squamous metaplasia	14
	d. Cellular atypia	15
2.	Chronic Active Cholecystitis	09(1.2%)
3.	Xanthogranulomatous cholecystitis	08(1.1%)
4.	Follicular Cholecystitis (figure 1)	06(0.8%)
5.	Eosinophilic Cholecystitis (figure 2)	03(0.4%)
6.	Adenomyomatosis (Figure 3)	03(0.4%)
7.	Moderate dysplasia	29(4%)
8.	Severe dysplasia	02(0.3%)
9.	Gangrenous Cholecystitis	02(0.3%)
10.	Angiodysplasia	01(0.1%)
11.	Adenocarcinoma (Figure 4a, 4b)	06(0.8%)

DISCUSSION

The histopathological spectrum of gallbladder after cholecystectomy is extremely variable. This study was undertaken to evaluate the range of histopathology demonstrated from resected gallbladder specimens. Of importance is that despite

all the advancements in imaging techniques, early gall bladder carcinomas are often missed out and diagnosis is made on histopathologic examination. This emphasises the importance of routine histopathologic examination of all cholecystectomy specimens. In our study of 714 specimens, chronic cholecystitis was the most common pattern noted

645(90%) which is similar to the studies done by Bimal Shah et al,^[5] (70.3%) and Hamad Hadi et al (80.3%).^[4] The second most common pattern noted was chronic active cholecystitis 9(1.2%) which is concordant with the findings of Hamad Hadi et al (2.2%).^[4] There were 8 cases of xanthogranulomatous chronic cholecystitis (XGC) in this study (1.1%) which is similar to the studies of Hamad Hadi et al,^[4] (1.2%) and Vikash Talreja et al,^[3] (1.24%). XGC is variant of chronic cholecystitis causing GB wall thickening with overlapping clinical, imaging and surgical features with carcinoma gall bladder such as perforation of the wall and invasion of surrounding organs. It shows intramural accumulation of foamy macrophages and inflammatory cells with fibrosis in later stages.^[6,7] A definitive diagnosis necessitates histopathological analysis. Adenomyomatosis was seen in 3 cases (0.4%). It is characterized by hyperplasia of the muscularis propria and exaggerated Rokitsky-Aschoff sinuses. We also found 3(0.4%) cases of Eosinophilic cholecystitis while Bimal Shah et al,^[5] found 6(0.6%) cases of eosinophilic cholecystitis. 6 cases (0.9%) of incidental carcinoma gall bladder were present in our series. All cases were histologically Adenocarcinoma. Incidentally discovered gallbladder cancer (IGBC) is defined as the gallbladder cancer (GBC) diagnosed during or after the cholecystectomy done for unsuspected benign gallbladder disease. IGBC is found in 0.2 - 2.9% of all cholecystectomies done for gallstone disease.^[8,9] None of the cases in our study were suspected preoperatively. Our findings were in concordance with the studies of Mittal et al (1%),^[10] Bimal Shah et al (0.8%).^[5] Moderate dysplasia was noted in 29(4%) cases and severe dysplasia in 2(0.3%) cases while Pramod Kumar Rai reported dysplasia in 2% of cases. Accurate identification of gallbladder dysplasia has clinical implications because of the field effect in the biliary tract which potentially increases risk of developing cancer at other sites in the biliary tract.^[11]

CONCLUSION

Postoperative histopathological evaluation of the excised GB specimens reveals a vast spectrum of underlying pathologies. Of these, chronic

cholecystitis remains the most prevalent. Furthermore, a macroscopic absence of remarkable features does not preclude the presence of an underlying premalignant or malignant lesion. Royal College of Pathologist suggests that it is mandatory to submit all gall bladder specimens for histopathology as many significant pathologies can present with normal morphological appearance.¹²

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