**Saudi Journal of Pathology and Microbiology (SJPM)**
Scholars Middle East Publishers
Dubai, United Arab Emirates
Website: http://scholarsmepub.com/

**ISSN 2518-3362 (Print)**
**ISSN 2518-3370 (Online)**

# Retrospective Study of Cholecystectomy Specimens

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**Original Research Article**

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**Article History**
*Received: 15.04.2018*
*Accepted: 26.04.2018*
*Published: 30.04.2018*

**DOI:**
10.21276/sjpm.2018.3.4.2

**Abstract:** Surgical resection of gall bladder is a common surgery and the most common indication for it, is inflammation. Incidental diagnosis of malignancy in such specimens changes the entire perspective of future management for the patient as gall bladder carcinoma is a malignancy with poor prognosis and high fatality. The aim of the study is to study the clinicopathological to study the clinic pathological correlation of the cholecystectomy specimens received in our pathology laboratory. This was a retrospective study over a period of 2 years from June 2015 to May 2017. The case reports were reviewed and data collected. The age and sex incidence, the presenting complaint with duration, the investigations done, the clinical diagnosis and histological diagnosis were analysed. A total of 200 cases of gall bladder were received in the lab during the study period. About 65% were women and the age group commonly involved was 40 to 60yrs. The most common presenting symptom was right upper quadrant pain. The clinical diagnosis correlated with the histopathological diagnosis in 99% of patients while it was different in two cases (1%). Both the cases were adenocarcinoma of gall bladder diagnosed incidentally during histopathological examination. Though the two patients had had CT done preoperatively, gall bladder malignancy was diagnosed histopathologically only. This stresses the importance of meticulous examination of gall bladder specimens and the importance of examining the surgically resected margins of the gall bladders.
**Keywords:** cholelithiasis, cholecystitis, gall bladder.

## INTRODUCTION

Gall bladder is a pear shaped sac attached to the posterior surface of the liver and plays an important role in secreting digestive enzymes. Inflammation of the gall bladder may occur with or without stone formation and usually presents as abdominal pain. The gall stones when small may migrate into the duct causing obstruction leading to acute cholecystitis which necessitates an emergency excision of the gall bladder. Rarely gall bladder may develop malignant mass which may be diagnosed preoperatively or may be an unexpected finding to the clinician on the histopathology report (critical alert finding).

Acute cholecystitis is an acute inflammation of the gall bladder frequently a consequence of gall stones causing obstruction of the bile duct. . Sometimes repeated low grade obstruction causes chronic cholecystitis causing subacute or chronic upper abdominal pain. Carcinoma of the gall bladder is a condition which has a parallel epidemiologic prevalence to cholelithiasis though a etiological association is yet to be established. Gallstones are a significant health problem in developed countries where there is a surge in metabolic syndromes, affecting 10% to 15% of the adult population [1]. Statistics have shown that about 7000 cases of carcinoma of the gall bladder are reported every year [2] which stresses the need for awareness about the same.

The purpose of this study was to identify the various causes for which cholecystectomy was done and to identify the distribution of gallbladder disease in the resected specimens.

## MATERIALS & METHODS

This study was conducted by retrospective review of reports of cholecystectomy samples received over the past two years from June 2015 to April 2017. Age and sex of the patients, the presenting complaint, imaging findings, clinical diagnosis and histopathological diagnosis were collected and analysed. A total of 206 samples of gall bladder were received in our department in the study period and were included in the study. About 2 cases whose case reports were difficult to locate and 4 cases whose investigations were done outside our institution and not available were excluded from the study. The specimens had been formalin fixed and grossed after 24 hours. The tissues had been processed and sections stained with eosin and haematoxylin. The slides were reported later by pathologists.

## RESULTS

A total of 200 cases of gall bladder received in the lab during the study period were considered. Majority of patients were women, 65% and the rest were men. The age group commonly involved was 40 to 50yrs (55%) followed by 30 to 40 yrs. The common presenting symptom was right upper quadrant pain, fever and jaundice. Among these symptoms the most common reason for patient's visit to the hospital was abdominal pain.

All the patients had had ultra-sonogram and liver function test done and about 15% patients had CT done preoperatively. The ultrasound findings included presence of gall stones in 74% of cases, thickened gall bladder wall in 48% of cases, pericholecystatic fluid in 20% of cases, distended gall bladder with sludge in 16% and gall bladder mass in 1 case. The clinical diagnosis was acute calculous cholecystitis in 34.5% of cases, acute cholecystitis in 12%, chronic calculous cholecystitis in 40%, and chronic cholecystitis in 13% and gall bladder carcinoma in 0.5% case.

During grossing stones were identified in 70% of cases. In remaining cases where calculi were seen in ultrasound but not found in the specimen, the stones were discarded by the clinician. The clinical diagnosis correlated with the histopathological diagnosis in 99% of patients while it was different in two cases (1%). Both the cases were adenocarcinoma of gall bladder diagnosed incidentally during histopathological examination. They were clinically diagnosed as chronic cholecystitis. Both the patients had a CT done preoperatively and were reported as chronic cholecystitis. The diagnosis of cancer of gall bladder in these patients was an unexpected diagnosis for the clinician.

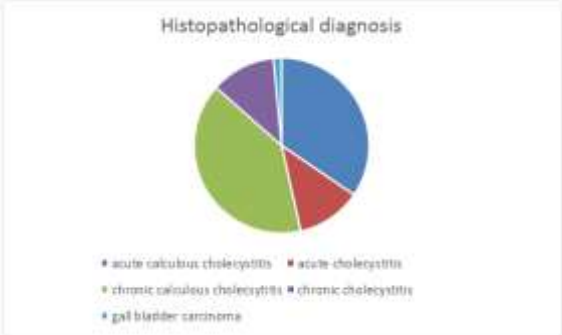


**Fig-1: Distribution of histopathological diagnosis of gall bladder**

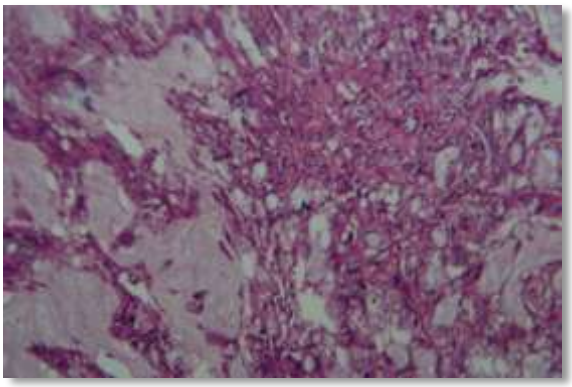

**Fig-2: Low power image of gall bladder carcinoma showing malignant glands infiltrating the muscularis**

## DISCUSSION

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. So the classification of various histomorphological types of gallbladder lesions is important to categorize into non-neoplastic and neoplastic lesions of gallbladder [1]. Many risk factors for cholesterol gallstone formation are not modifiable such as ethnic background, increasing age, female gender and family history or genetics. Conversely, the modifiable risks for cholesterol gallstones are obesity, rapid weight loss and a sedentary lifestyle [3].

In the present study gallbladder lesions were more common in females than in males with a male to female ratio 1.8: 1 which was similar to other studies carried out by N. T. Damor a, *et al*. [4], Tadashi Terada *et al*. [5], Dr. Gudeli Vahini *et al*. [6], Asuquo *et al*. [7], Tantia *et al*. [8] reported male to female ratio 1:2.3, 213:327, 1:1.5, 1:5, 1:2.8 respectively.

Cholecystitis which was the most common histopathological diagnosis of the gall bladder specimen received, is the inflammation of the gall bladder that occurs mostly commonly because of an obstruction of the cystic duct from cholelithiasis [9]. Cholelithiasis produces diverse changes in the gall bladder mucosa namely acute inflammation, chronic inflammation, granulomatous inflammation, cholesterolosis and glandular hyperplasia [10]. The pathological changes related to gallstone formation are still the focus of intensive research. Gallstones mainly injure the mucosal columnar epithelium and thus cause changes like metaplasia, dysplasia and neoplasia [11].

In the present study, most of the lesions of gall bladder were chronic calculous cholecystitis in 40%, followed by acute calculous cholecystitis in 34.5% of cases, acute cholecystitis in 12%, and chronic cholecystitis in 11.5% and gall bladder carcinoma in 1.5% case. It is in concordance with Maulik *et al*. [12] where incidence of chronic calculus cholecystitis is 63.33%, acute cholecystitis is 19.66% and adenocarcinoma is 5%. In study of Paraskevopoulos [13] incidence is as follow chronic cholecystitis-74.07%. Acute cholecystitis -11. 11% and adenocarcinoma - 14.81%. In study of F P Dix [14] the incidence are as follow chronic cholecystitis-95.5%, acute cholecystitis 2.9% and adenocarcinoma-0.4%. In study of D. Chattopadhyay [15] the incidence are as follow chronic cholecystitis-52.1%, acute cholecystitis-30.4% and adenocarcinoma- 13%. In study of Shrestha [16] the incidence are as follow chronic cholecystitis-67.36%, acute cholecystitis-32.63% and adenocarcinoma- 3.29%. All the results of present study are quite comparable with other study.

The Non neoplastic lesions of gall bladder occur in 3rd, 4th and 5th decades of life. Neoplastic lesions of gall bladder are common in 5th, 6th and 7th decades of life with female preponderance [3]. This was in concordance with our study where 55% of non-neoplastic lesions where in 4th and 5th decade and rest were in 3rd decade. Chronic cholecystitis occurs after repeated episodes of acute cholecystitis and is almost always due to gallstones [17]. 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 [18, 19].

The incidental finding of malignancy in gall bladder in our study was 1.0 %. This was in concordance with other studies. Tantia *et al*.[20], showed 0.59% , Shreshtha *et al*. [16], showed 3.30% Mitrovic *et al*., [21] showed 0.69% Mittal *et al*. [22] showed 1.00%, Ghimire *et al.*, [23] showed 1.28% as incidental findings of carcinoma gall bladder. Various studies have thus shown that a CT diagnosis of cholecystitis does not rule out cholangiocarcinoma though its incidence is low.

## CONCLUSION

Cholelithiasis is the most important entity in gall bladder lesions and that there is a definite association between metaplasia-dysplasia-carcinoma sequence. 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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