



**GAMUT OF GALL BLADDER LESIONS-A HISTOMORPHOLOGICAL STUDY IN A TERTIARY HOSPITAL IN SOUTH INDIA**

**Pathology**

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**ABSTRACT**

This study reviews the demographic aspects and histomorphological changes that occur in the gall bladder. The present retrospective and prospective study was carried out in the Department of Pathology, Stanley Medical College, Chennai during a period of one year from August 2015 to August 2016. A total of 200 cases were examined and parameters such as age and clinical presentation were recorded in adjunct to the histopathological study of the received gall bladder. The age group ranged from 21 yrs to 70 yrs with a sex predilection towards females, the M:F ratio being 1:1.78. The most common lesion was chronic cholecystitis and the spectrum of lesions in our study were, adenomyoma, empyema, granulomatous cholecystitis, cholesterosis and adenocarcinoma. Hepatoid adenocarcinoma of the gall bladder was a rarity in this study.

**KEYWORDS**

Cholecystectomies, Chronic Cholecystitis, Adenocarcinoma of gall bladder

**INTRODUCTION:**

Cholecystectomy, one of the commonest samples in a histopathology laboratory presents with a gamut of histopathological changes. It is a hollow piriform structure seen in the undersurface of the liver which acts as a reservoir, storing and concentrating bile before it is released into the small intestine. The first human gallbladder extirpation was in the year 1882 by the German surgeon Carl Langenbauch, who was a pioneer in the evolution of open cholecystectomy(1). The most common clinical entity for cholecystectomy was for gall stones which was successfully performed by Theodor Kocher in the year 1878. Laparoscopic cholecystectomy revolutionized the treatment of gallstones and its use dates back to biblical history. It was Muret who performed the first human laparoscopic cholecystectomy in the year 1987 (2).

**MATERIALS AND METHODS:**

The present study was done in the Department of Pathology, Stanley Medical College, Chennai-1 for a period of one year from August 2015 to August 2016. A total of 200 cholecystectomies were received. Gross and histopathological examination were done and recorded. Immunohistochemical markers were employed for the confirmation of the diagnosis of hepatoid adenocarcinoma which revealed positivity for Cytokeratin 19, polyclonal CEA, Hep Par 1 and focal positivity for AFP. CK 7 and CK20 were negative.

**RESULTS:**

Total number of 200 cholecystectomies were studied. Maximum number of Gall bladder diseases were in the age range of 41-50 yrs and among these males accounted to 36% and females 64% with a maximum number of cases seen in females. The most common lesion was Chronic cholecystitis(86%). Other benign lesions were acute cholecystitis(4%), cholesterosis(6%), gangrenous cholecystitis (1%). A rare case of tuberculous cholecystitis (0.5%) along with tuberculosis of omentum was reported. A single case of adenomyoma of gallbladder(0.5%) and two cases of carcinoma of gall bladder(1%), one being adenocarcinoma of gall bladder and other being hepatoid adenocarcinoma was observed.

**DISCUSSION:**

A spectrum of histopathologic changes are encountered in cholecystectomy specimens. Prevalance of gall bladder disorder has been estimated to range between 2 and 29% and was found to be 7 times more prevalent in North than in South India (3). The most common sex predilection was females with a male:female ratio of

1:1.78. This was consistent with studies conducted in India by few authors.(4,5,6,7). Sedentary life style, female sex hormones and genetic factors were the reason for its predominant occurrence in females.

Studies	Year	No of specimens	M:F ratio
Silbina Murmu et al	2017	106	1:2.3
Awasthi N et al	2017	732	1:2.6
Arathi et al	2013	237	1:6.9
Khan et al	2013	360	1:4.7
Present study	2017	200	1:1.78

Table 1: M-F ratio in various studies

Type of Lesion	Female	Male
	Sum	Sum
Acute cholecystitis with evidence of empyema	6	2
Adenocarcinoma of Gall bladder	2	0
Adenomyoma of Gall bladder	1	0
Cholesterolosis	8	4
Chronic Cholecystitis	106	66
Gangrenous Cholecystitis	2	0
Tuberculous cholecystitis	1	0
Xanthogranulomatous Cholecystitis	2	0

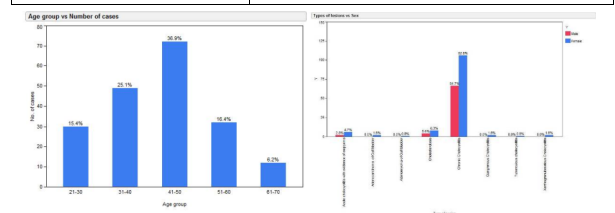


Fig 1.: Age group vs Number of cases

Fig 2: Types of lesions

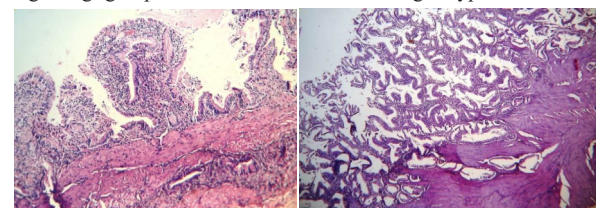


Fig 3:10x Gallbladder mucosa showing epithelioid granulomas.

Fig 4:10x Adenomyoma of gallbladder

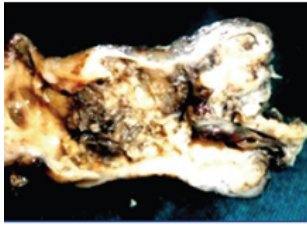


Fig 5: Gall bladder showing greyish white papillary mass

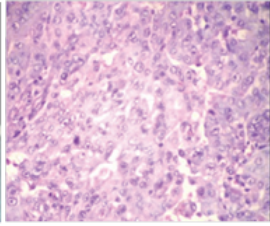


Fig 6:10x showing polygonal cells with eosinophilic granular cytoplasm pleomorphic nuclei.

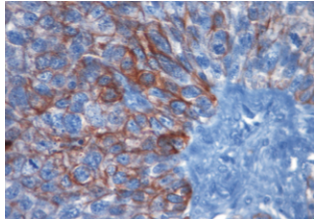


Fig 7: 40x HepPar1 positivity in Hepatoid adenocarcinoma of gall bladder

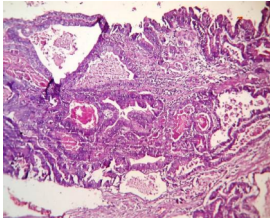


Fig 8: Adenocarcinoma of Gall bladder

The most common lesion for which cholecystectomy is done is for cholelithiasis accounting to 95% of gallbladder disease. It is seen more commonly in fatty, fertile females ranging in age from 40 to 50 yrs. Increasing epidemic of obesity and metabolic syndromes as a result of Westernized lifestyle, attributes to cholesterol gallstone formation. Cholelithiasis is a major contributing and cofactor for gallbladder cancer with a relative risk of 4.9(8).

Cholesterosis was seen in 6% of cases, in association with chronic cholecystitis. Adenomyoma or adenomyomatosis of gallbladder is an uncommon hamatomatous lesion found in 2%-5% of cholecystectomies (9). It is characterized by hyperplastic muscular layer with multiple prolapsed glands in the subserosa. We recorded a single case of adenomyoma of the gallbladder in our study.

Xanthogranulomatous cholecystitis, a rare form of chronic cholecystitis is seen in 1.3 to 5.2% of cases.(10,11).It is a rare inflammatory disease of the gallbladder resulting from extravasation of bile into the gallbladder wall due to rupture of Rokitsansky –Aschoff sinuses or by mucosal ulceration. This is followed by an inflammatory reaction composed of inflammatory cells, fibroblasts and macrophages that engulf the cholesterol and phospholipids leading to formation of xanthoma cells. It is a great mimicker of gallbladder carcinoma and can coexist with it. The typical macroscopic features of wall thickening, multiple yellow to brown intramural nodules favors the diagnosis of xanthogranulomatous cholecystitis. Two cases of xanthogranulomatous cholecystitis was documented in our study.

A rare case of tuberculous cholecystitis (0.5%) along with tuberculosis of omentum was reported. Gangrenous cholecystitis was seen in 2 cases(1%). Papillary hyperplasia of the mucosa secondary to chronic inflammation was seen in few cases. It has been suggested that this hyperplastic change of the mucosa is due to increased bile pressure in the extrahepatic bile ducts and/or by the increased concentration of bile cholesterol(12). Empyema of the gall bladder presents in 5 to 10% of cholecystectomy specimens. It can be seen in association with acute calculous cholecystitis or acalculous cholecystitis. Acute cholecystitis with empyema was seen in 4% of cases.

Gall bladder carcinoma is the 6 th commonest malignancy in the gastrointestinal tract. It has high mortality due to vague clinical symptoms thereby presenting at an advanced stage. Most of the Gall bladder carcinomas are incidentally detected and hence warrants routine histopathological examination. The prevalence rate of gall bladder cancer based on the Adyar Cancer Registry report from Chennai figures to 0.52% in men and 0.66% in females(13). In this study two cases of Gall bladder carcinoma one being adenocarcinoma and other being a rare variant, hepatoid adenocarcinoma was documented.

## CONCLUSION:

Gall bladder specimens are to be sampled with care so as to detect the spectrum of lesions. The present study revealed a female preponderance with majority of patients falling in the fourth decade of life. Most common lesion was chronic cholecystitis. Rare lesions such as tuberculous cholecystitis and hepatoid adenocarcinoma were documented in this study. Macroscopic examination in adjunct with meticulous histopathological examination of cholecystectomy specimens is mandatory to detect incidental malignancies thereby aiding in early detection to institute appropriate treatment.

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