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A Clinicopathological Study of Gallbladder Lesions

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Abstract:
Background: *The most common lesion of the gallbladder is chronic cholecystitis with cholelithiasis but occasionally some rare lesions can also occur.*
Aims And Objectives: *To assess the frequency of gallbladder lesions and to study their nature, age and sex prevalence*
Materials And Methods: *The biopsy material received from June 2012 to May 2013 received in the department of pathology at our college were studied and data of gallbladder lesions were analyzed.*
Results: Out of 110 cases studied , 80 cases (72.7%) were chronic cholecystitis(including 2 cases of xanthogranulomatous cholecystitis, 2 cases of follicular cholecystitis and 1 case of eosinophilic cholecystitis) . 60 cases of chronic cholecystitis were associated with gall stones. 20 cases (18.3%) were acute cholecystitis and all of them were associated with gallstones. 5 cases (4.5%) were carcinomas of which 4 cases were adenocarcinomas and 1 case of squamous cell carcinoma , 2 cases (1.8%) were showing hyperplasia and 01 case (0.9%) was tubular adenomatous polyp.
Conclusions: *Gallbladder lesions were infrequent consisting mostly of inflammation with gall stones. Benign polyps and malignant lesions though uncommon ,coexist with cholecystitis.*
Keywords: *Cholecystitis, Cholelithiasis, Gall bladder lesions,Carcinomas*

I. Introduction

Gall bladder is affected by a variety of Non-neoplastic and neoplastic lesions. Ninety percent of gallbladder lesions are attributed to gall stones. Broadly, the gall bladder lesions can be classified as Non-neoplastic and neoplastic lesions. The Non neoplastic lesions include congenital anomalies like cholelithiasis, cholecystitis , adenomyomatosis and cholesterolosis . Neoplastic category includes adenoma, carcinoma and mesenchymal tumours. Gall bladder carcinoma is the most common cancer of the biliary tree and 5th most common gastrointestinal malignancy(1). It is characterised by rapid progression and high mortality rate. Cancers at an early stage are limited to the mucosa. The early malignancies have to be diagnosed on histopathology as they present as cholecystitis clinically and for proper management & better prognosis.

II. Materials And Methods

During one year period (June 2012-May 2013) , out of 110 cholecystectomies received in our histopathology section majority were of laproscopic procedure and were analyzed. After gross examination tissues were subjected to formalin fixation , routine processing and paraffin embedding. For cases without any gross abnormality, standard 3 sections including fundus, body and neck were taken. In cases with any growth ,irregular mucosa , thickened wall, calcification, necrosis etc more sections were taken. Five microns thick sections on three to four slides were prepared from each specimen. Apart from routine hematoxylin and eosin stain special stains like mucicarmine , PAS , Alcian blue and immunohistochemistry were used whenever needed. Gross and microscopic features of all incidentally detected cases were studied in detail.

III. Results

Out of 110 cholecystectomy specimens , 85 (77.3%) gall bladders showed the evidence of gall stones , 70% of them were in females and were in the age group of 41 – 50 yrs. On gross examination most of the stones were mixed and their sizes ranged from 0.5 –1.0 cm.

The present study undertook the evaluation of 110 cholecystectomy specimens . The majority of cases had cholecystitis of which eighty cases (72.7%) were chronic cholecystitis followed by twenty (18.3%) acute cholecystitis cases. These 80 cases of chronic cholecystitis also included 02 cases of xanthogranulomatous cholecystitis, 02 cases of follicular cholecystitis and 01 case of eosinophilic cholecystitis. Cholesterolosis was noted in 02 (1.8%) cases, While there were 2 cases (1.8%) of adenomatous hyperplasia and 1 case (0.9%) of tubular adenomatous polyp.

Five cases (4.5%) were carcinomas of which 4 cases were adenocarcinoma and 1 case was squamous cell carcinoma. Out of 4 cases of adenocarcinoma , one case was detected incidentally, which already showed metastasis to liver and omentum . Another case of adenocarcinoma also showed neuroendocrine component .There was also a case mucin secreting adenocarcinoma and papillary adenocarcinoma . The case of squamous cell carcinoma of the gall bladder showed contiguous spread to the bed of the liver and to adjacent transverse colon.

IV. Discussion

The age of the patients ranged from 18 to 82 years. Majority of the patients (36%), 40 cases were in the age group of 41- 50 years with a mean age of 45.2 years. Similar to the results observed in other studies from India(3).The main sufferers were females with the male to female ratio being 1:2.1 . These results indicates that there is increase in incidence of cholelithiasis with advancement of age.

Our results were similar to the study done by R. Thamil selvi et al on 78 cholecystectomy specimens, from January 2008 to May 2011 , India. Also by studies done by SK Mathur on 330 cases and R Khanna(4,5).

Female sex hormones & sedentary habits of women in India expose them to factors that possibly promote formation of gallstones.

Chronic cholecystitis is the most commonly encountered disease of the gallbladder ;the overwhelming majority of cholecystectomies are performed for chronic cholecystitis. It is associated with cholelithiasis in more than 90% of cases. Therefore as with gallstones there is female predominance (6,7,8). Although it may develop as a sequelae of recurrent acute cholecystitis , many times there is no history of antecedent attacks.

In our study majority of (80) cases (72.7 %) were of chronic cholecystitis. Most of the(60) cases (77.3%) showed evidence of gall stones and majority of them were in females.

Acute cholecystitis is a clinically defined entity, characterized by an abrupt injury to the organ (9,10). The vast majority of acute cholecystitis cases are related to gallstones. It usually develops when the stones are lodged in the neck of the cystic duct. Acute calculous cholecystitis is the primary complication of gallstones and is also the most common reason for emergency cholecystectomy. Acute acalculous cholecystitis is also seen in late adulthood, but constitutes a higher proportion of pediatric cases with acute cholecystitis (10,11).

In our study twenty cases (18.3%) were of acute cholecystitis and all of them were associated with gall stones.

Chronic inflammation , infection and gallstones are currently believed to be the factors leading to malignant transformation of gallbladder epithelium (16) . Our study supports association between gall stone and malignancy . Two cases of adenocarcinomas in our study were associated with gallstones. Evidence in favour of a link between these diseases is substantial: gallstones are found in 65-90% of patients with gallbladder carcinoma propotionally to gall stone size(11,12). In our study one case of adenocarcinoma gallbladder in ultrasonography showed distended gallbladder with 10 mm and 6 mm calculi in proximal common bile duct. Another case of squamous cell carcinoma presented as an enhancing mass lesion in gall bladder fossa infiltrating adjacent liver parenchyma segments(IV B andV).Calcification of gall bladder is associated with 10-25% cases of carcinoma in the literature. In our study , however , we could not find this association ,as neither any carcinomatous gallbladder showed calcification , nor the calcified gallbladders showed carcinoma. Carcinoma of the gallbladder affects women 2-6 times more frequently than men, although the extent of this bias varies in different geographical regions (12)

In our study more number of gallbladder carcinomas are seen in females.

Early carcinomas can appear as a mucosal plaque , a polypoidal or papillary , tubular and nodular forms of Gallbladder cancers (13) .We had nodular form of tumour at fundic region of gall bladder, an ulceroproliferative growth at fundic region of gall bladder, mucosal plaque like area in body as well neck of gallbladder.

Most carcinomas of the gallbladder are adenocarcinomas (80-95%) and can be papillary, tubular, mucinous or signet cell type. Less common types are undifferentiated or anaplastic carcinoma (2-7%), squamous cell carcinoma (1-6%) and adenosquamous carcinoma(1-4%).(14)

The pure squamous cell carcinoma constitutes only 1% of all malignant gallbladder tumours and consists of cords ,islands or sheets of malignant squamous cells separated by dense fibrous stroma.(15)

In our study we had five cases of gall bladder carcinomas majority (4 cases) of them were adenocarcinomas among them there was a case of mucin secreting adenocarcinoma , a case of papillary adenocarcinoma, one case had neuroendocrine component also and only one case was of squamous cell carcinoma which showed contiguous spread to the bed of the liver and to adjacent transverse colon.

Conclusions:

Gall bladder lesions constituted 3.6% of all biopsy specimens received in a period of one year in our study. Most of them were non-neoplastic. Majority were associated with gall stones, mostly mixed type. They show female preponderance and in the age group of 41-50 yrs. Neoplastic lesions are only a few constituting 4.5%.Careful pathological examination of gallbladder specimens received with cholecystitis as a cause should be adequately sampled as neoplastic process early or advanced may present as cholecystitis.

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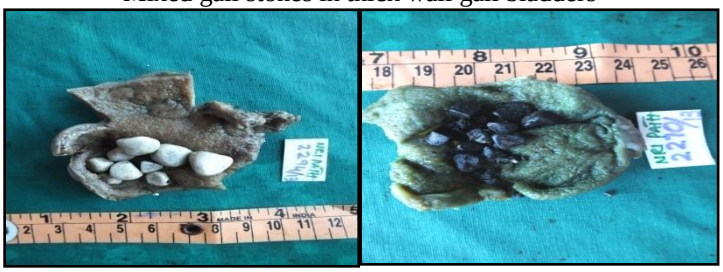
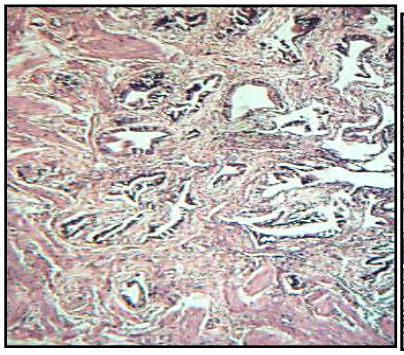
Mixed gall stones in thick wall gall bladders

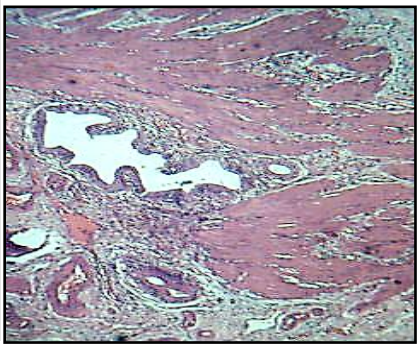


Gall stones

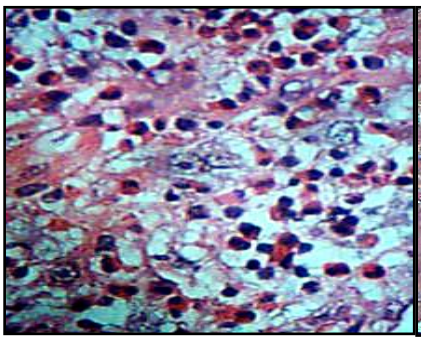
Chronic cholecystitis



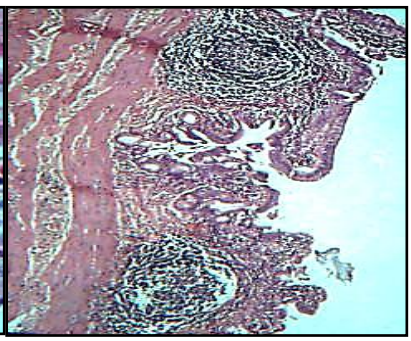
HPE 100X



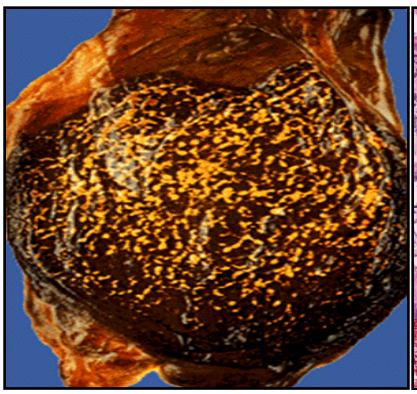
HPE 400X



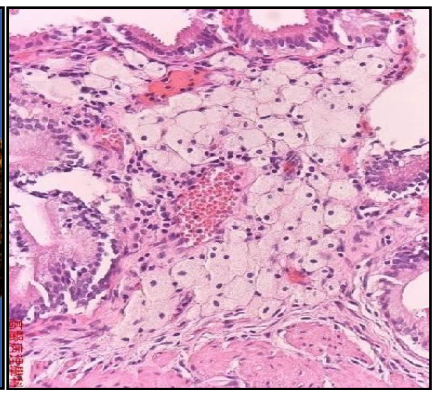
Eosinophilic cholecystitis HPE 400X



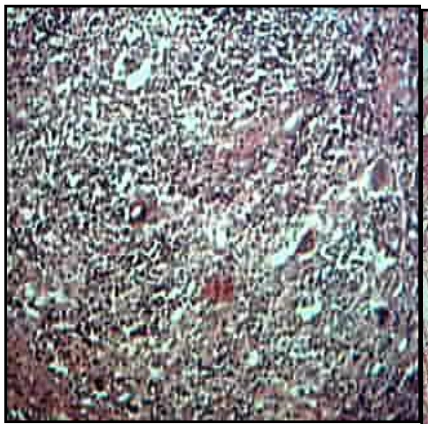
Follicular cholecystitis HPE 100X



Strawberry gallbladder

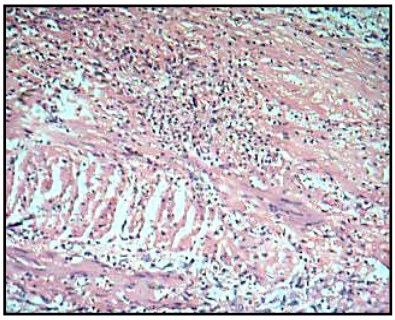


cholesterolosis HPE400X

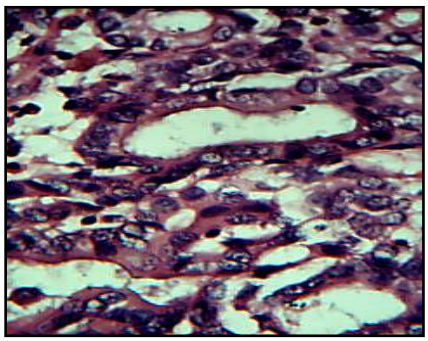


Xanthogranulomatous cholecystitis
H &E HPE 400X

Acute cholecystitis
H&E HPE100X

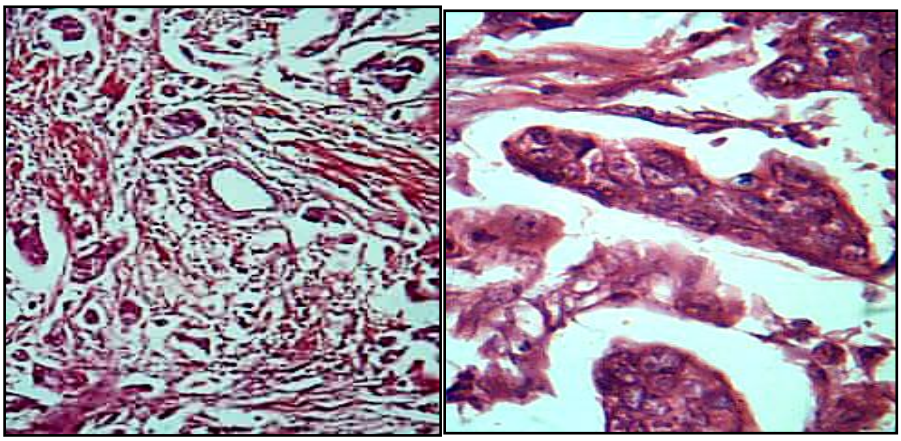


Acute cholecystitis HPE 100X



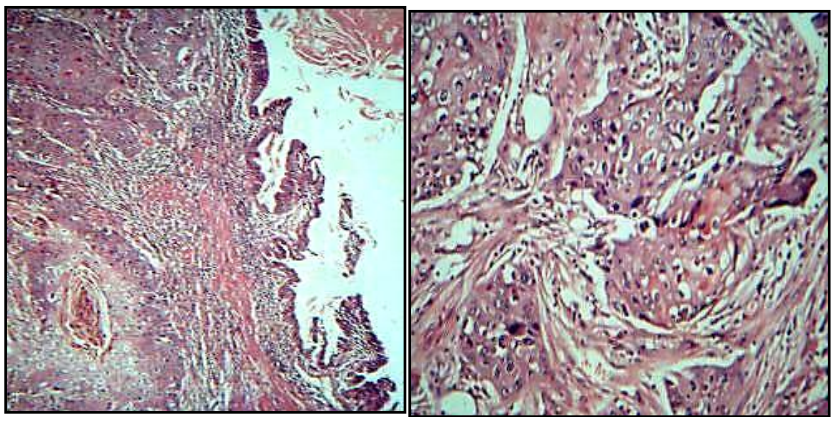
Tubular adenoma H&E 100X Tubular adenoma H&E 400X

Gross adenocarcinoma ulceroproliferative growth at fundus of gallbladder and friable tumour on liver segment.



Adenocarcinoma of gall bladder HPE 100x & HPE 400X

Gross of squamous cell carcinoma of gall bladder showing infiltration into tranverse colon and adjacent liver.



HPE 100X and HPE 400X Squamous cell carcinoma

Table :1

Histological diagnosis	No. of cases
Chronic cholecystitis	80 (72.7 %)
Acute cholecystitis	20 (18.3%)
Cholesterolosis	02 (1.8%)
Hyperplasias	02 (1.8%)
Tubular adenoma	01 (0.9%)
Adenocarcinoma	04 (3.6%)
Squamous cell ca	01 (0.9%)
Total cases	110 (100%)

Table: 2

Histological feature	Association with Gall stones	Not associated with gall stones	Total cases
Chronic cholecystitis	60	20	80
Acute cholecystitis	20	-	20
Cholesterolosis	01	01	02
Hyperplasia	01	01	02
Tubular adenoma	01	-	01
adenocarcinoma	02	02	04
Squamous cell ca	-	01	01
Total cases	85 (77.3%)	25 (22.7%)	110 (100%)