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Original research article

Spectrum of gall bladder diseases on histopathology: A case series

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Abstract

Background: Gall bladder specimens are the most commonly encountered specimens in histopathology. The disease spectrum varies from inflammation to malignancy.

Aims and objectives: The aim of the present study is to study the spectrum of diseases encountered during histopathology.

Material and Methods: The study included total of 91 cases over a period of 1 year. Hematoxylin and Eosin stained sections of all cases were examined.

Results: The most common histological diagnosis was chronic cholecystitis (46/91).Thirty seven (37) cases were diagnosed as Acute on chronic cholecystitis. Four (4) cases were reported as Xanthogranulomatous cholecystitis, 2 as Adenocarcinoma, 1 as gangrenous cholecystitis and 1 as follicular cholecystitis.

Conclusion: Most commonly diagnosed disease in cholecystectomy specimens was Chronic cholecystitis followed by acute on chronic cholecystitis. Histopathological examination plays an important role as sometimes chronic long standing inflammation may leads to malignancy as I our scenario. Two cases turned out adenocarcinoma which were clinically and radiologically diagnosed as chronic cholecystitis.

Keywords: Cholecystitis, gall bladder, cholecystectomy

Introduction

Gallbladder is an organ which has a wide spectrum of diseases varying from congenital anomalies, inflammatory and non-inflammatory lesions and neoplasia [1]. It is one of the most common organ to be resected either by open or by laparoscopic cholecystectomy [2]. In gall bladder inflammatory conditions are more common than other pathologies like gangrenous, neoplasia etc.[1] However, Cholelithiasis is commonly associated with carcinoma gallbladder in up to 40%-100% Mostly it is diagnosed as an incidental. [4] Therefore histopathological examination of cholecystectomy specimens is important to categorize the lesions.

Material and Methods

The study included 91 cholecystectomy specimens either by open or laproscopic surgeries. Hematoxylin and eosin stained sections were examined and the diagnosis was made.

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Results

The age of the patients ranges from 19 years to 93 years. 74 cases were female and 16 cases were male. The stones were single or multiple. The most common histological diagnosis was chronic cholecystitis (46/91).Thirty seven (37) cases were diagnosed as acute on chronic cholecystitis. Four (4) cases were reported as Xanthogranulomatous cholecystitis, 2 as Adenocarcinoma, 1 as gangrenous cholecystitis and 1 as follicular cholecystitis.(Table 1) (Fig 1: Chronic cholecystitis, Fig 2: Acute on chronic cholecystitis, Fig 3: Follicular cholecystitis, Fig 4: Xanthogranulomatous cholecystitis).

Table 1: Distribution of cases

Diagnosis	No. of cases
Chronic cholecystitis	46 (50.5%)
Acute on chronic cholecystitis	37 (40.6%)
Xanthogranulomatous cholecystitis	4 (4.3%)
Gangrenous cholecystitis	1 (1.0%)
Follicular cholecystitis	1 (1.0%)
Adenocarcinoma	2 (2.1%)

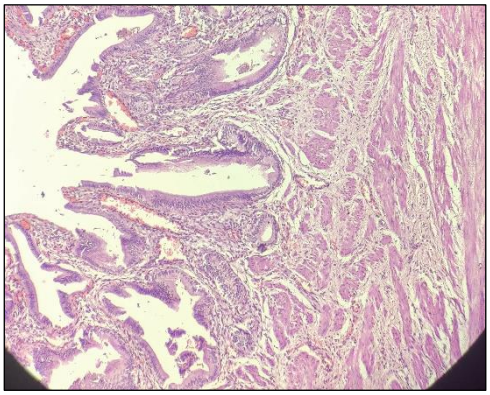

Fig 1: Chronic Cholecystitis

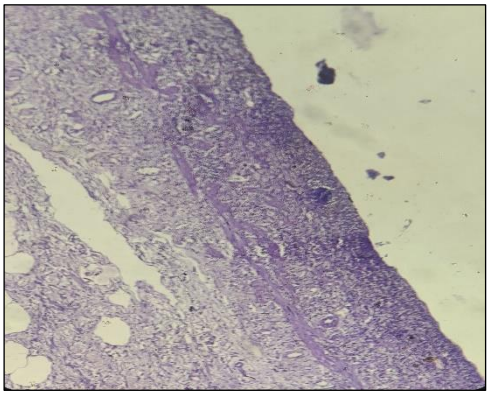

Fig 2: Acute on chronic cholecystitis

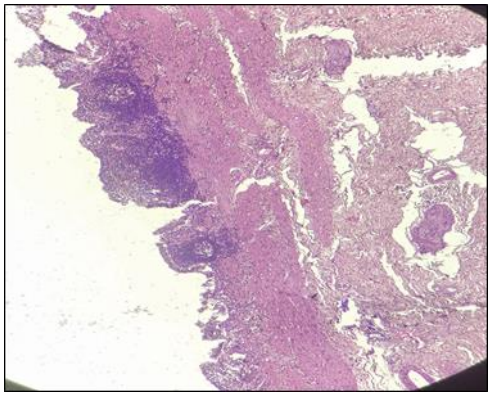

Fig 3: Follicular Cholecystitis

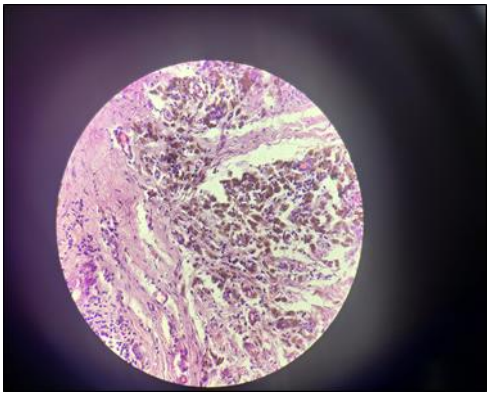

Fig 4: Xanthogranulomatous cholecystitis

Discussion

Gall bladder is a very common organ to be affected by many pathological diseases. These include wide spectrum of the lesions from congenital to inflammatory and to pre-malignant/malignant lesions [1]. It is one of the most common organ to be received in histopathology [2].

Detailed analysis and histopathological examination of gallbladder lesions is important to differentiate between non-neoplastic and neoplastic disease entities. In India the estimated prevalence of gallstone disease is reported between 2%-29%. Among which the inflammatory conditions are noted to be more common than other pathologies. However, the prevalence of gallbladder carcinoma is less in general population and accounts for 80% of all biliary tract cancers. It is the 5th most common gastrointestinal

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malignancy in India following colon, pancreas, stomach and esophagus [5]. The supersaturation of bile predisposes to both chronic inflammation and in most instances stone formation [6].

Cholelithiasis is a multifactorial disease. It is more prevalent in fatty, fertile females of forty years but can occur in children and males also. Additional factors include age, genetic susceptibility, obesity, insulin resistance, alcohol consumption, increased triglyceride level, pregnancy and various drugs. Its is said the Ascorbic acid and Calcium, consumption of unsaturated fats and dietary fibres have the protective effect. The main presentation of the patient is abdominal pain and presenting as gall stones in sonography [7].

Bile stasis due to dyskinesis is considered as the main pathology responsible for gall stone formation. Three factors namely mucus, calcium and lipid act together to promote the nucleation of the stones. Different types of stones are cholesterol stones, pigment stones and the mixed stones depending on their composition. Cholesterol stones are single, oval and yellowish in color, pigmented stones are usually multiple and they are small in size and black colored. Mixed stones are multiple, multifaceted and can be of variable size [9].

Histologically, the gall bladder is lined by the tall columnar epithelium, which have mucus and this separates the mucosal cells from the bile. It has three layers, mucosa, muscularis and adventitia [7].

Chronic cholecystitis is characterized by chronic inflammatory cell infiltrate, muscle hypertrophy, rokitansky aschoff sinuses and fibrosis. In our study maximum 50.5% cases comprises of chronic cholecystitis. This is in concordance with studies conducted by Beena *et al*., [2] Selvi *et al*., [9] and Goyal *et al*., [10] in which also the maximum cases comprises of chronic cholecystitis. (Table 2)

Acute on chronic cholecystitis cases have mucosal erosion and congested vessels on histopathology. It comprises 40.6% cases in the present study. The studies conducted by Beena *et al*., [2], Goyal *et al*., [10], Arti *et al*., [11] and savanur *et al*., [12] the acute on chronic cases comprises of 10%, 9.5% and 4.0% respectively.

Xanthogranulomatous cholecystitis, is a chronic diffuse fibroinflammatory process which results in accumulation of foamy histiocytes in lamina propria. In our study, 4.3% of cases comprises of xanthogranulomatous cholecystitis. In the studies conducted by Beena *et al*., Selvi *et al*., Goyal *et al*., and Savanur *et al*., xanthogranulomatous cases comprises of 1%, 1.2%, 1.8%, 2.5% and 0.6% respectively.

In our study 2 cases were diagnosed as Adenocarcinoma. This was incidental findings, as both the cases were not clinically suspected as malignancy. Also in imaging both the cases were reported as cholecystitis. On gross examination, no growth identified. The mucosa is thickened at places. On histopathological examination atypical cells forming glands are seen infiltrating the wall with extensive fibrosis.In the studies conducted by Beena *et al*., Selvi *et al*., Arti *et al*., Goyal *et al*., and Savanur *et al*., the malignancy comprises of 0.5%, 1.2%, 1.6%,1.5% and 1.2% respectively.

Table 2: Comparision with other studies

	Chronic cholecystitis	**Acute on chronic**	**Xantho-granulomatous**	**Adenocarcinoma/ Adenosquamous Ca**	**Follicular**	**Gangrenous**
Present study	50.5%	40.6%	4.3%	2.1%	1.1%	1.1%
Beena *et al*.,	82%	10%	1%	0.5%	-	-
Selvi *et al*.,	87%	0	1.2%	1.2%	-	-
Arti *et al*.,	86.3%	0	1.8%	1.6%	-	-
Goyal *et al*.,	57.8%	9.5%	2.5%	1.5%	-	-
Savanur *et al*.,	59.4%	4%	0.6%	0.2%	0.2%	0.2%

In the present study 1 case each is diagnosed as gangrenous cholecystitis and follicular cholecystitis. In gangrenous cholecystitis, grossly the gall bladder was tanned in color with necrotic and sloughed out mucosa. In follicular cholecystitis there were aggregates of lymphoid cells in lamina propria.

Conclusion

The spectrum of diseases in gall bladder varies from inflammation to malignancy. Histopathological examination plays an important role in categorizing different lesions and also to rule out any incidental malignancy which might get missed clinically and in imaging findings.

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