

## **A PROSPECTIVE STUDY ON HISTOPATHOLOGICAL SPECTRUM OF VARIOUS GALL BLADDER LESIONS AT A TERTIARY CARE CENTRE**

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**BACKGROUND:** Gallbladder is one of the organs having a wide spectrum of diseases ranging from calculi and its complications, non-inflammatory, inflammatory to the neoplastic lesions.

**AIMS AND OBJECTIVES:** The aim is to study histopathological spectrum of various gall bladder lesions.

**MATERIALS AND METHODS:** It was a prospective study carried out from March 2023 to August 2023. A series of 149 cholecystectomies specimen were examined grossly and histopathologically.

**RESULTS:** In our study, out of the 149 cases the most common histopathological lesion of gall bladder was chronic cholecystitis with cholelithiasis i.e. 113 cases (75.8%). Chronic cholecystitis without cholelithiasis was seen in 18 cases (12.0%), acute on chronic cholecystitis was seen in 14 cases i.e. 9.3%, adenocarcinoma of gall bladder was seen in 02 cases i.e. 1.3% and adenosquamous carcinoma was seen in 0.6%.

**CONCLUSION:** Gallbladder histopathology includes a variety of lesions. These findings were more common in females and present mostly in the 3rd to 5th decade of life. Most common histopathological finding was chronic cholecystitis and most of the lesions of gallbladder were associated with gallstones. It must be noted that prompt detailed

histopathological analysis of the cholecystectomy specimens will help to confirm the benign nature of the disease or to detect any precursors of malignancy

**KEYWORDS:** GALL BLADDER, CHOLECYSTITIS, CHOLELITHIASIS, ADENOCARCINOMA, HISTOPATHOLOGY

## **INTRODUCTION**

The gallbladder is a small, organ located beneath the liver where bile is stored and concentrated before it is released into the small intestine. Gallbladder is one of the organs having a wide spectrum of diseases ranging from calculi and its complications, non-inflammatory, inflammatory to the neoplastic lesions (1). Among the gall bladder diseases, gall stone is a very the common health problem that affects millions of people throughout the world (2). Gall stones produce inflammation of gall bladder which can be acute, chronic or acute on chronic. Inflammatory conditions of the gall bladder are noted to be more common than other gall bladder pathologies (3). While carcinoma of the GB remains a relatively rare aetiology, ubiquitous conditions, such as chronic cholecystitis secondary to gallstones, can irritate the GB mucosa, thereby heralding the onset of metaplastic and dysplastic transformations. These transformations can, in turn, predispose the patients to the future development of gallbladder carcinoma (GBC) (4,5). The carcinoma of the gall bladder is a rare but clinically silent disease that is most commonly associated with longstanding cholelithiasis (6). Cholelithiasis is commonly associated with carcinoma gallbladder in up to 40%-100% and is the most frequently associated factor independent of age or sex (7). It is commonly diagnosed as an incidental histological finding following cholecystectomy for gallstone disease (8)

## **AIM**

The aim is to study histopathological spectrum of various gall bladder lesions.

## **MATERIAL AND METHOD**

This study will be done prospectively in the Department of Pathology at G.R. Medical College Gwalior. The patients who underwent surgery for cholecystectomy were included in the study.

The tissue samples were received in 10% buffered formalin and processed and 149 specimens were studied grossly and histologically.

Histopathological examination of the specimens was conducted by the Department of Pathology following appropriate staining (haematoxylin and eosin staining).

Glass slides containing tissue sections were rinsed into several jars filled with xylene, graded series of ethanol solutions, hematoxylin, acid alcohol, and eosin.

The slides prepared from paraffin blocks of the specimens were stained with the conventional hematoxylin and eosin method and a preliminary scanning was done to include all well - preserved specimens and exclude all inadequate and autolyzed specimens. The histopathological reports were based on WHO classification of gall bladder lesions.

Inclusion criteria:

1) All age group patients who underwent surgery for gall bladder lesions.

Exclusion criteria:

- 1) Autolysed / Inadequate Specimen
- 2) Gall bladder lesions managed conservatively.
- 3) Autopsy specimen

## RESULTS

Total 149 cholecystectomy specimens were studied for a period of 6 months from March 2023 to August 2023.

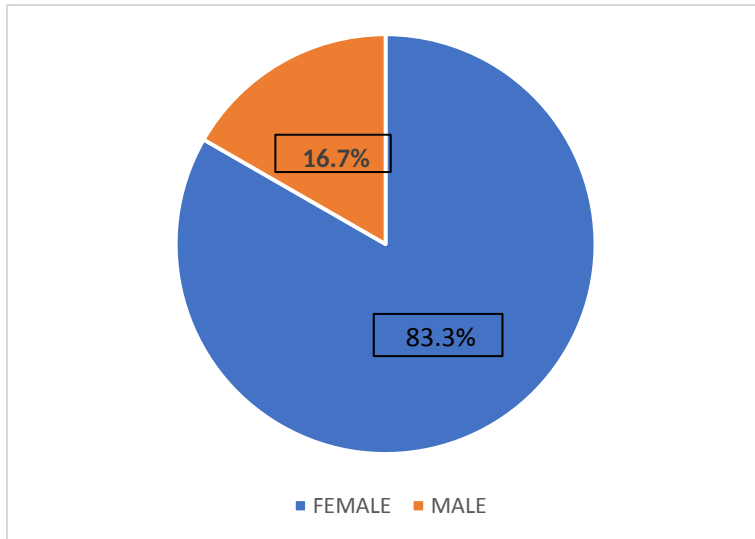
Gallstones and associated diseases were more common in women as compared to men in our study with a M:F ratio of 1:4.96. The age of patients varied from 13 to 80 years, with a maximum number of patients being between age group 31 to 40 years (27.5%).

TABLE 1: AGE DISTRIBUTION

SL.NO.	AGE GROUP	Number of cases	Percentages
1.	0-10	0	-
2.	11-20	05	3.3%
3.	21-30	26	17.4%
4.	31-40	41	27.5%
5.	41-50	35	23.5%
6.	51-60	21	14.0%
7.	61-70	11	7.4%
8.	>70	10	6.7%
9.	TOTAL	149	100.0

- Majority belonged to the age group of 31 to 50 years.
- >60 years had only 21 cases were as 5 cases were in < 20 years.

FIGURE 1: GENDER DISTRIBUTION:



- Female patients predominated with male to female ratio of 1:4.96.

TABLE 2: GALL BLADDER WALL THICKNESS IN NON-MALIGNANT AND MALIGNANT CASES

SL.NO	WALL THICKNESS	Non malignant		Malignant	
		cases	percentage	cases	percentage
1	<3mm	96	65.7%	-	-
2	>3mm	50	34.3%	03	100%

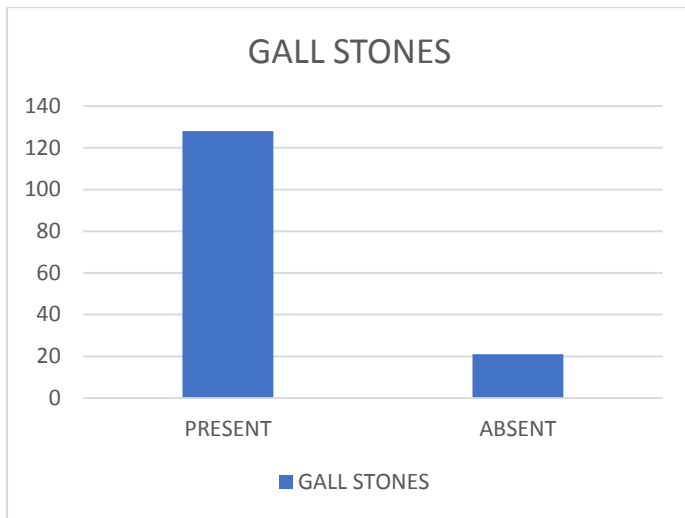
- Wall thickness of < 3mm was seen in 65.7% cases of non malignant lesions.
- >3mm wall thickness was seen in 100% cases of malignant lesions and 34.3% cases of non malignant lesions.

TABLE 3: BENIGN AND MALIGNANT GALL BLADDER LESIONS

Category	Cases	Percentage
Benign	146	98%
Malignant	03	02%
Total	149	100%

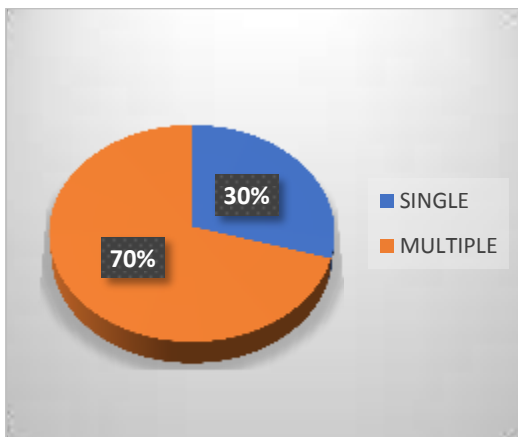
- There were 146 benign cases and 3 malignant cases in our study

FIGURE 2: PRESENCE OF GALL STONES



- Out of 149 cases, 128 cases had gall stones and 21 cases showed absence of gall stones.

FIGURE 3: NUMBER OF GALL STONES



- Among the 128 cases which had cholelithiasis, multiple stones were present in majority of them i.e. 70% of them while 30% of cases had single stone.

TABLE 4: HISTOPATHOLOGICAL TYPES OF GALL BLADDER LESIONS

SL.NO.	HISTOPATHOLOGICAL TYPES	NO. OF CASES	PERCENTAGE
1)	Chronic cholecystitis with cholelithiasis	113	75.8%
2)	Chronic cholecystitis without cholelithiasis	18	12.0%
3)	Acute on chronic cholecystitis with cholelithiasis	07	4.7%
4)	Acute on chronic cholecystitis without cholelithiasis	03	2.0%
5)	Acute on chronic cholecystitis with metaplasia	04	2.6%
6)	Adenocarcinoma	02	1.3%
7)	Adenosquamous carcinoma	01	0.6%
8)	Chronic cholecystitis with cholelithiasis with evidence of perforation	01	0.6%

- In our study, the most common histopathological lesion of gall bladder was chronic cholecystitis with cholelithiasis i.e. 113 cases (75.8%).
- Chronic cholecystitis without cholelithiasis was seen in 18 cases (12.0%)
- Acute on chronic cholecystitis was seen in 14 cases.
- Adenocarcinoma of gall bladder was seen in 02 cases i.e. 1.3%.
- Adenosquamous carcinoma was seen in 0.6%.

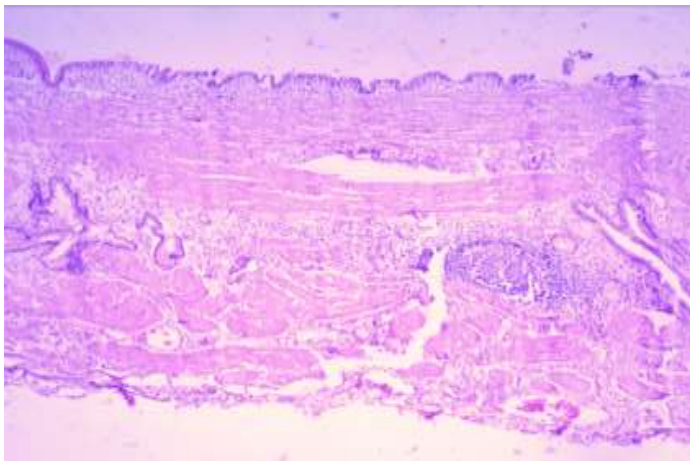


Figure 4: Chronic Cholecystitis showing lymphocytic collection (4x)

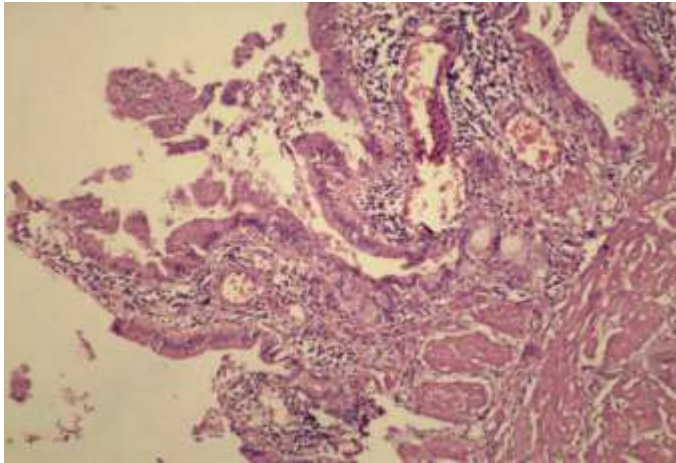


Figure 5: Chronic Cholecystitis (40x)

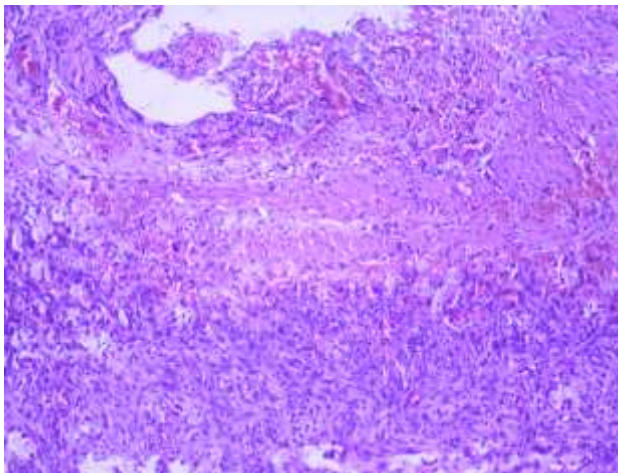


Figure 6: Acute on Chronic Cholecystitis (10x)

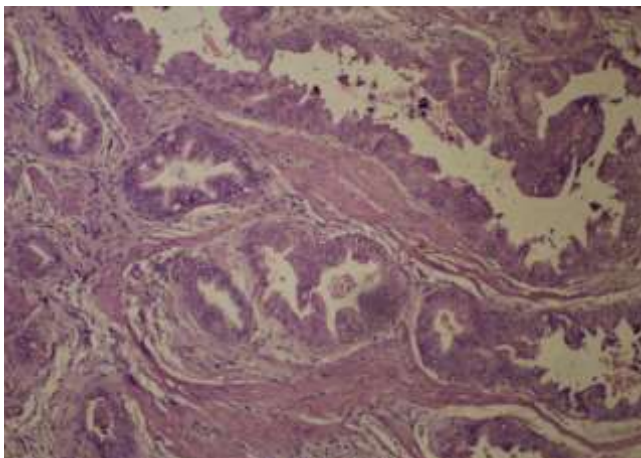


Figure 7: Well differentiated Adenocarcinoma of Gall Bladder (10x)

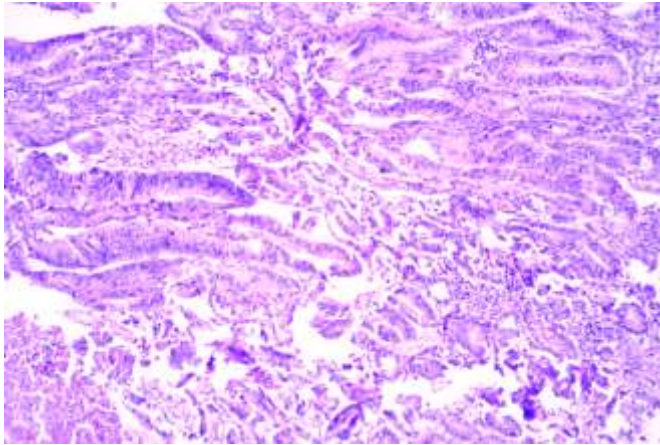


Figure 8: Moderately differentiated Adenocarcinoma of Gall Bladder(10x)

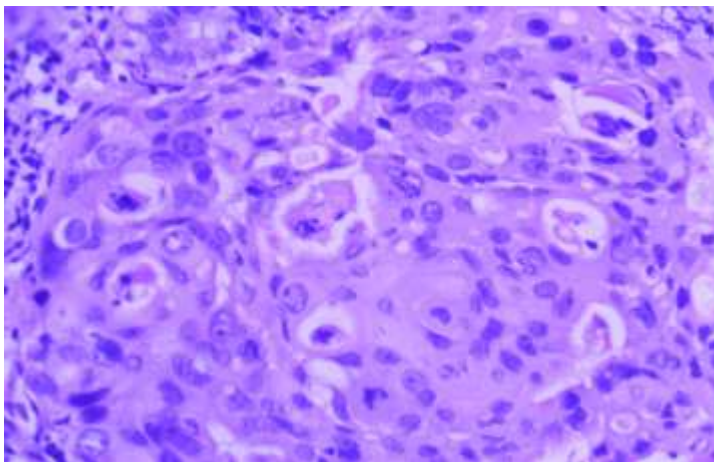


Figure 9: Adenosquamous Carcinoma of Gall Bladder(40X)

## DISCUSSION

In our study, 149 cases of cholecystectomy specimens were studied histopathologically.

Maximum cases in our study were in age group 31 to 40 years i.e. 27.5% cases similar to Awasthi et al (9) (23.5%) and Menon et al (10) (31.9%).

Female cases predominated in our study with male to female ratio of 1:4.9 similar to Shafique et al (11) (1:4.6).

In our study, stones were present in 86% cases and absent in 14 % cases similar to Selvi et al (12) and Manu et al (13) which had 83.3% and 82 % cases of cholelithiasis respectively.

Multiple stones were seen in 70 % cases in our study similar to Sanjeev et al (14) and Goyal et al (15) which had 69% and 69.3% cases each.

We had 87.8 % cases of chronic cholecystitis similar to Manu et al (13), Duttal et al (16) and Kafle et al (07).



Acute on chronic cholecystitis was seen in 6.7% cases in our study similar to Gupta et al (17)

We had 98 % benign lesions of gall bladder similar to Mathur et al (18) which also had 98 % cases of benign lesions.

Adenocarcinoma of gall bladder in our study was seen in 1.6 % cases similar to Gupta et al (17) and Sharma I et al (19) which had 1.15 % cases and 0.9% cases each.

In our study, adenosquamous carcinoma was seen in 0.6% cases similar to Kulkarni et al (01) (0.6%) and Devi et al (20) (0.5%).

## CONCLUSION

Gallbladder histopathology includes a variety of lesions. These findings were more common in females and present mostly in the 3rd to 5th decade of life. Most common histopathological finding was chronic cholecystitis and most of the lesions of gallbladder were associated with gallstones. It must be noted that prompt detailed histopathological analysis of the cholecystectomy specimens will help to confirm the benign nature of the disease or to detect any precursors of malignancy. This will be decisive in the management and prognosis of the patient.

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