



## A Histopathological Spectrum of Hepatic Lesions in Correlation with Clinical Findings

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### KEYWORDS

Liver lesions,  
Histopathology

### ABSTRACT:

**INTRODUCTION-** Liver is affected by a wide spectrum of various primary and secondary diseases. Liver diseases can be diagnosed by clinical, biochemical and radiological examinations. However, liver biopsy plays a crucial role in diagnosis and management of liver diseases.

**AIM-** To determine the prevalence and patterns of liver lesions in our hospital.

**OBJECTIVE-** To study the histopathological findings in various liver lesions and to correlate with the clinical findings.

**STUDY DESIGN-** A hospital based cross-sectional study.

**STUDY PERIOD-** Three years from Feb 2022 to Feb 2024

**SAMPLE SIZE-** Approximate sample size is twenty.

**MATERIALS AND METHODS-** This was a cross-sectional study conducted in department of pathology, Asram medical college, Eluru . The study duration was three years from February 2022 to February 2024. The Age, gender, clinical and radiological findings along with liver function tests results were recorded in all the cases. Formalin fixed liver biopsy tissues were processed routinely. These tissues were dehydrated in ascending grades of alcohol, cleared with xylene and embedded in paraffin and blocks were prepared. The blocks were then cut in 2 to 5 micrometer thickness using microtome. These sections were stained with Haematoxylin & Eosin. Some special stains like Reticulin, Masson's trichrome (MT), Periodic acid Schiff stain(PAS) and Prussian blue (Perl's) were used in selected cases. The findings were recorded and analyzed.

**INCLUSION CRITERIA-** All the adequate liver biopsies received in the department of pathology.

**EXCLUSION CRITERIA-** Inadequate liver biopsies were excluded from the study.

**STASTICAL ANALYSIS-** Data was entered in excel and analyzed with spss18. Data was presented with proportions, tables and graphs. Chisquare test was applied for categorical variables and P value of 0.05 was considered statistically significant.



## INTRODUCTION

The liver plays a crucial role in numerous metabolic functions within the body. It faces a variety of insults, including metabolic disturbances, toxins, infections, and neoplastic conditions.<sup>[1]</sup>

Both primary and secondary diseases can impact the liver. Common primary liver conditions include hepatitis, non-alcoholic fatty liver disease (NAFLD), alcoholic liver disease (ALD), and hepatocellular carcinoma (HCC).

Secondary liver issues may arise from alcoholism, infections outside the liver, or the metastatic spread of different primary cancers.<sup>[2]</sup>

A liver biopsy is essential for diagnosing and managing liver diseases since liver function tests (LFT) alone lack diagnostic specificity.<sup>(3)</sup>

Any significantly abnormal LFT or radiological evidence, combined with clinical symptoms such as anaemia, jaundice, hepatomegaly, ascites, and splenomegaly, necessitates a liver biopsy.

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## MATERIALS AND METHODS

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## RESULTS

**Table 1: Frequency of various Histopathological diagnosis**

<b>TABLE 1- Frequency of various Histopathological diagnosis</b>	<b>Number of cases</b>	<b>Percentage of total cases</b>
Hepatic secondaries	Six (6)	30%
Primary hepatic tumours (Hepatocellular ca)	Four (4)	20%
Cirrhosis	Two (2)	10%
Hepatic cysts	Three (3)	15%
Chronic Hepatitis	Two (2)	10%
Steatohepatitis	One (1)	5%
Spindle cell lesion	One (1)	5%
Autoimmune hepatitis	One (1)	5%



Table 2: Age and sex distribution

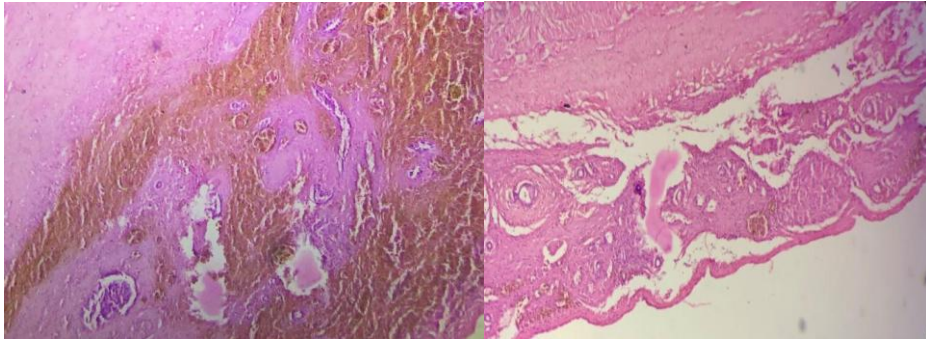
Age group	Male	Female	No of cases	Percentage of total cases
0-10 yrs	-	-	-	-
11-20 yrs	-	-	-	-
21-30 yrs	-	-	-	-
31-40 yrs	-	-	-	-
41-50 yrs	1	3	4	20%
51-60 yrs	3	4	7	35%
61-70 yrs	5	1	6	30%
71-80yrs	1		1	5%
81-90 yrs	-	2	2	10%
TOTAL NO	10	10	20	100%

S.NO	AGE&SEX	CLINICAL DIAGNOSIS	RADIOLOGY DIAGNOSIS	BIOCHEMICAL RESULTS	HISTOPATHOLOGY DIAGNOSIS
1.	56yr/m	Neoplastic lesion in the liver	Nil		Metastatic adenocarcinoma
2.	42yr/m	Neoplastic lesion in liver	Nil	Raised serotonin, bradykinin	Metastatic Neuroendocrine tumour
3.	63yr/f	Neoplastic lesion in the liver	Nil		Borderline spindle cell neoplasm
4.	66yr/m	Metastatic carcinoid tumour	Metastatic lesion in left lobe of the liver		Metastatic adenocarcinoma

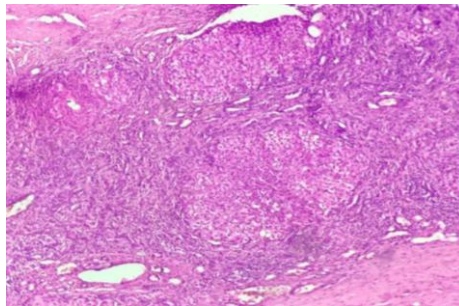


5.	83yr/m	Ca colon	Neoplastic lesion infiltrating into gall bladder fossa, gall bladder, pylorus and duodenum		Adeno carcinoma probably metastasizing from the colon
6.	71yr/f	C/o pain rt hypochondrium	U/S -Hydatid tissue, CT scan-simple hepatic cyst		Solitary cyst liver
7.	57yr/m	Fever, weight loss, cough with expectoration	Ultrasound abdomen shows neoplastic lesion in both the lobes		Moderately differentiated Hepatocellular carcinoma
8.	50yr/f	Menorrhagia	Hepatic cyst 13x10cm/hydatid cyst/complex cyst		Solitary cyst liver
9.	55yr/f	Weight loss			Autoimmune hepatitis
10.	48yr/f	Fever with cough			Steatohepatitis
11.	69yr/m	Neoplastic lesion in liver	Ultrasound guided biopsy of the lesion in the segment VI of right lobe liver		Hepatocellular carcinoma
12.	58yr/m	Cough with expectoration			Poorly differentiated squamous cell carcinoma
13.	47 yr/m				Intrahepatic cholangiocarcinoma
14.	52yr/f	Weight loss			Hepatocellular ca
15.	62yr/m				Mets to the liver
16.	58yr/f	Weight loss			Hepatocellular carcinoma
17.	48yr/F				Liver cirrhosis
18.	56yr/F				Cirrhosis
19.	32yr/F				Hydatid cyst
20.	47yr/m				Chronic hepatitis

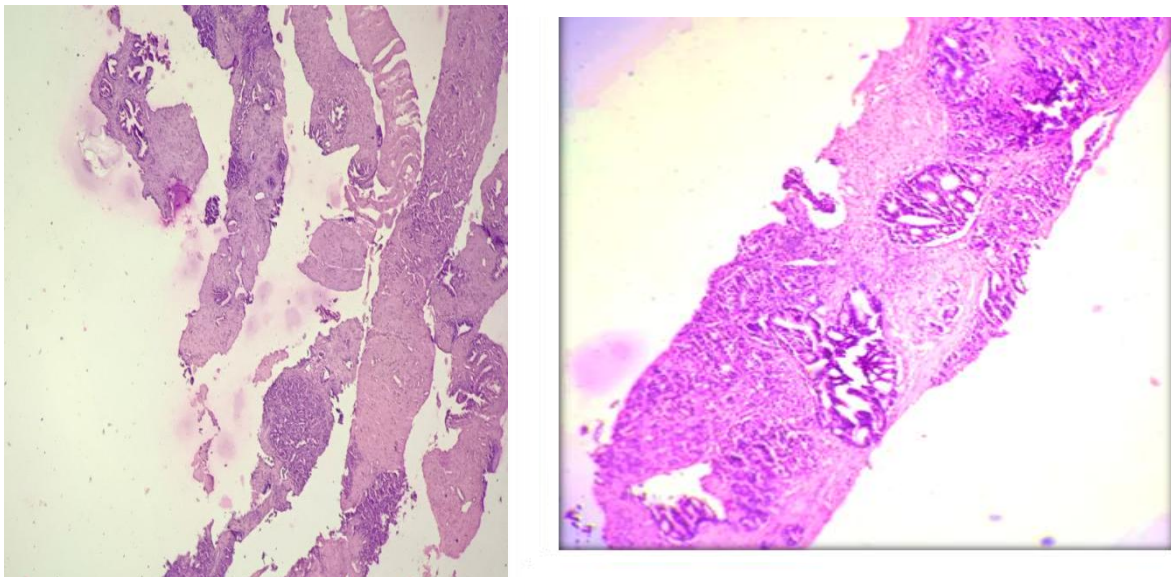
**FIG 1 - HPE, Hematoxylin and eosin picture of Hydatid cyst.**



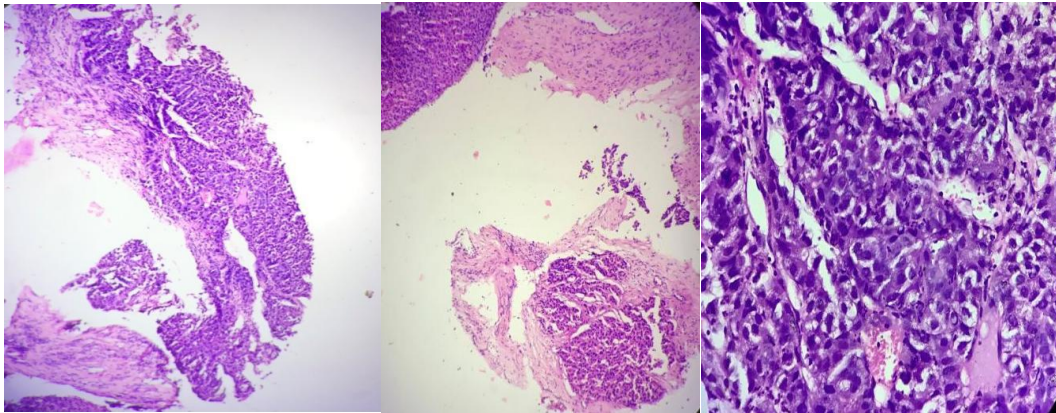
**FIG 2-Hematoxylin & eosin picture of-solitary hepatic cyst**



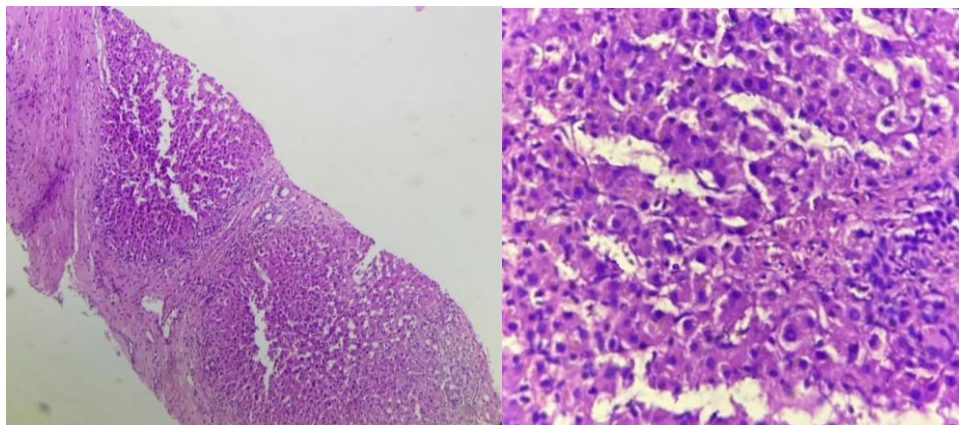
**FIG 3-Hematoxylin & eosin picture of Hepatocellular carcinoma**



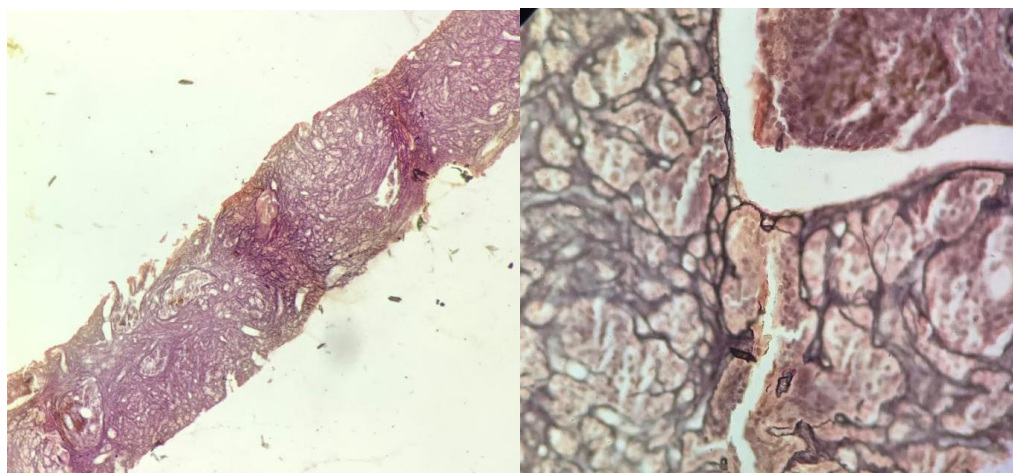
**Fig 4: Hematoxylin & eosin picture of Hepatocellular carcinoma**



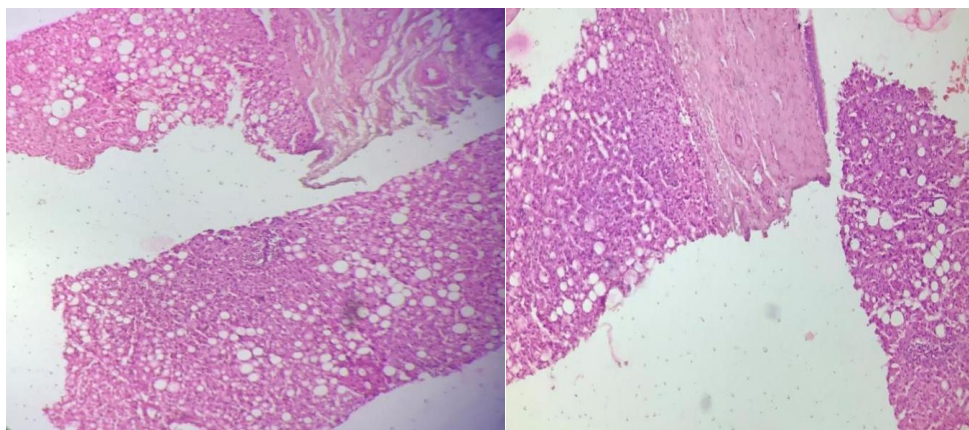
**Fig5: Hematoxylin & eosin picture of Moderately differentiated hepatocellular carcinoma**



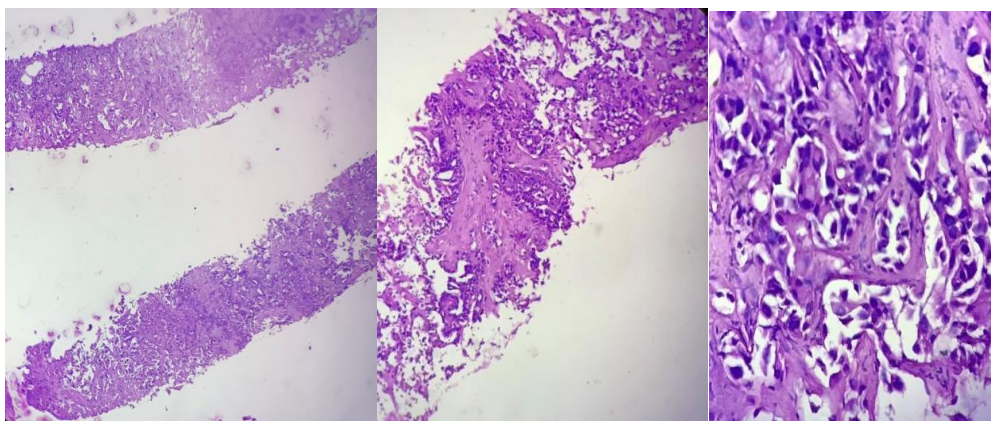
**Fig 6: Reticulin stain in Hepatocellular carcinoma**



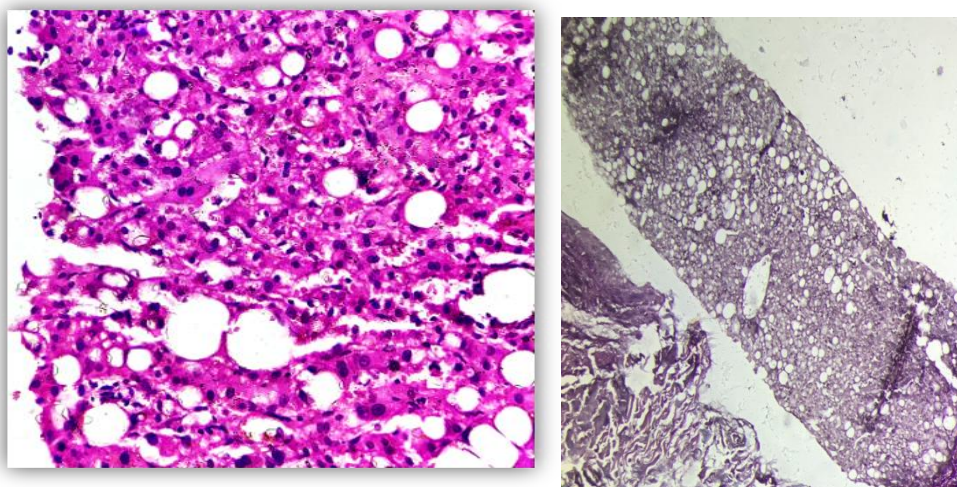
**Fig 7: Hematoxylin & eosin picture of Hepatocellular carcinoma**



**Fig 8: Hematoxylin & eosin picture of Metastatic adenocarcinoma**



**Fig 9: H&E, RETIC-metastatic deposit**





## DISCUSSION

Hepatic metastasis can be either by direct spread or due to the dual vasculature of blood supply of liver from portal and systemic circulation. The common sites of primary tumours that frequently metastasizes to liver include lung, breast, gall bladder, stomach, pancreas, and large intestine.[1]

In our study, metastatic adenocarcinoma was the most frequent observation with primary tumours in gall bladder and large bowel. One case of metastatic squamous cell carcinoma was noted with primary being in oesophagus.

The metastatic lesions to liver were most common in our study (n=6) of which majority were metastatic adenocarcinomas, followed by squamous cell carcinoma, cholangiocarcinoma and neuroendocrine tumours.

Hepatocellular carcinoma was the second most common primary hepatic malignancy encountered in our study seen in 20% (n=4) cases. In a study by Ban et al incidence of primary hepatic neoplasm in 1.3%, and metastatic neoplasm in 1.6% was noted.

We had equal incidence in males and females which could be due to hepatitis B virus infection. Liver biopsy showed multinucleated giant hepatocytes with severe bile stasis.

Cirrhosis was the third most common hepatic lesion seen in 10% (n=2) cases. Gall et al, Ghaziala Hanif et al has found the incidence of cirrhosis to be 6%. The incidence was common among females. This is most probably due to increased alcohol intake among females.[2]

Majority of cases showed interface hepatitis. Various other causes included hepatitis B infection, Wilson's disease and malnutrition. (7) Liver biopsy showed cholestasis with periportal fibrosis and inflammatory destruction of bile ducts.

One case of fatty liver (steatosis) was observed in a 48-year-old female. There was no history of alcohol intake as well as no serological evidence of any viral infection. NAFLD includes a wide spectrum of pathological lesions ranging from simple steatosis to even hepatocellular carcinoma. (7)

It is frequently seen in association with various conditions like obesity, diabetes mellitus, secondary to

bowel resection or bypass surgeries and consumption of steroids. Non-alcoholic steatohepatitis (NASH) is a subgroup of NAFLD. It mainly relies on liver biopsy for diagnosis. (8)

Steatosis of liver was a frequent histological finding in various studies done by Amarapurkar et al and sarita Nibhoria et al who found prevalence of 16.05% and 18.18%.

Masoud Sotoudeh et al found non-alcoholic steatosis in 2.1% cases with male to female ratio of 2.5:1.

Similar results were observed in the study conducted by Kringsholm B et al and Passarino G et al. (4,5 )

Cysts are usually localized in liver and are filled with clear fluid. (6)

A 32-year-old female patient was diagnosed with liver hydatidosis which showed cystic structures with laminating fibrous wall. Hydatid disease is a parasitic infestation caused by *Echinococcus granulosus* and liver is the commonest infected organ in the body.

The other hepatic pathology was chronic hepatitis seen in a male in fourth decade of life. This can be attributed to increased alcohol intake and hepatotropic viral infection. This also showed concurrent cirrhosis. It was characterized by inflammatory infiltrate confined to portal tracts with intact margins. (3) Our study incidence of chronic hepatitis is comparable to study done by Masoud Sotoudeh et al.

The spectrum of hepatic lesions varied from males to females in various studies.

In our study highest incidence was seen in fifth decade of life with equal preponderance in males and females.

## CONCLUSION

Histopathological examination of liver biopsy plays a pivotal role to diagnose and assess the severity of various hepatic diseases and often drives therapeutic management. Hence, liver biopsy is an essential tool for accurate diagnosis and management of liver diseases.

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