

Spectrum of Hepatic Pathologies in Medicolegal Autopsies

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Abstract

Background: Silent liver disease is a major cause of morbidity and mortality in the population due to its silent progression to end stage liver disease without significant symptoms. We aim to study pattern of pathological findings and latent forms of diseases in the 100 liver autopsy specimen and to find clinicopathological correlation between clinical diagnosis and pathological diagnosis wherever possible.

Method: The present study was conducted on 100 liver autopsy specimens received in the department of Pathology, Govt. Medical College, Patiala. Sections from representative areas were submitted for processing, sectioned and stained with Hematoxylin & Eosin stain.

Results: Out of 100 specimens, 38 cases (38%) showed hepatic steatosis, followed by cirrhosis 14 cases(14%), chronic venous congestion 13 (13%) cases, portal triaditis 12 (12%) cases, normal 12 (12%) cases , hepatitis 8 (8%) cases , granulomatous/ tuberculosis pathology 2 (2%) cases and 1(1%)metastatic deposits of carcinoid tumour. Maximum cases seen in age group of 41-50 years with mean age 39.92±12.68 years. Liver disease predominated in males with male:female ratio of 6:1.

Conclusion: Silent liver diseases are not uncommon. Autopsy examination of liver is very helpful to identify silent liver diseases like hepatic steatosis, cirrhosis, venous congestion and malignant tumours.

Keywords: Autopsy, Histopathology, Liver disease, Cirrhosis

Introduction

Liver is vulnerable to wide variety of metabolic, toxic, microbial and circulatory insults. In some instances, the disease is primary while in others the hepatic involvement is secondary to cardiac decompensation, alcoholism or ‘extra hepatic infections. Quite rightly liver is, called as “The custodian of milieu interior”. Autopsy study is useful to monitor the cause of death and to plan medical strategy.^[2]

Liver diseases have been known to have diverse etiologies. Broadly they are classified into various categories namely Infectious disorders of liver, Autoimmune disorders, Drug and toxic induced liver

injury, Alcoholic liver diseases, metabolic liver diseases, cholestatic diseases, Autoimmune cholangiopathies, structural abnormalities of the biliary tree, circulatory disorders, Hepatic complications of organ or stem cell transplantation, Hepatic diseases associated with pregnancy and lastly tumors of different origins.^[1]

Alcohol abuse generally leads to three pathologically distinct liver diseases; these are fatty liver, hepatitis and alcoholic cirrhosis. Any one or all the three can occur at the same time, in the same patient.^[3] Fatty changes (steatosis) are very common finding both in biopsies and at postmortem examinations. Liver cell involvement may be focal, diffuse or zonal.^[4]

Chronic hepatitis is usually due to hepatotropic viruses, or conditions like auto immune chronic hepatitis or chronic idiosyncratic drug-induced hepatitis. ^[4]

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Material and Method

The present descriptive pattern of study was conducted on 100 liver autopsy specimens received in the department of Pathology, Govt. Medical College, Patiala over a period of 1 year 9 months. Liver specimens were received as a part of multiple viscera from mortuary for histopathological examination of medicolegal cases. In each case, important information regarding age, sex,

clinical diagnosis (wherever possible) and postmortem findings were obtained from postmortem papers. Gross examination of the liver specimen was done as regards to the weight, surface, capsule, colour, consistency, etc. Formalin fixed liver tissues stained with Hematoxylin and Eosin were examined under microscope. The findings were recorded and analysed. Autolytic specimens were excluded from the study.

Observations

During the study, 100 cases were evaluated, out of which liver diseases predominated in males 86 cases(86%) as compared to females 14 cases(14%).

TABLE-1 : DISTRIBUTION OF HISTOPATHOLOGY FINDINGS OF CASES

Histopathology Findings	No. of Cases	Percentage
Hepatic Steatosis	38	38.00
Cirrhosis	14	14.00
Hepatitis	8	8.00
Chronic Venous Congestion	13	13.00
Portal Triaditis	12	12.00
Granulomatous Pathology/Tuberculosis	2	2.00
Metastatic Deposits of Carcinoid Tumour	1	1.00
Normal	12	12.00
Total	100	100.00

On histopathological examination of 100 liver autopsy specimens, the most common finding was hepatic steatosis i.e. 38 cases (38%) followed by cirrhosis i.e. 14 cases (14%), chronic venous congestion i.e. 13 cases (13%), normal histology and portal triaditis i.e. 12 cases each (12%), hepatitis i.e. 8 cases (8%), granulomatous pathology/ tuberculosis i.e. 2 cases (2%) and metastatic deposits of carcinoid tumour i.e. 1 case (1%).

TABLE-2 : GENDER WISE DISTRIBUTION OF HISTOPATHOLOGY FINDINGS

Histopathology Findings	Male		Female	
	No. of Cases	Percentage	No. of Cases	Percentage
Hepatic Steatosis	36	41.86%	2	14.29%
Cirrhosis	13	15.12%	1	7.14%

Cont... TABLE-2 : GENDER WISE DISTRIBUTION OF HISTOPATHOLOGY FINDINGS

Hepatitis	4	4.65%	4	28.57%
Chronic Venous Congestion	12	13.95%	1	7.14%
Portal Triaditis	10	11.63%	2	14.29%
Granulomatous Pathology/Tuberculosis	1	1.16%	1	7.14%
Metastatic Deposits of Carcinoid Tumour	1	1.16%	-	0.00%
Normal	9	10.47%	3	21.43%
Total	86	100.00	14	100.00

Table 3. CLINICOPATHOLOGICAL CORRELATION BETWEEN CLINICAL DIAGNOSIS AND PATHOLOGICAL FINDINGS

Pathological Diagnosis (n=48)	Clinical Diagnosis (n=48)			
	Alcohol Liver Disease	Cancer	Jaundice with viral etiology	Tuberculosis
Hepatic Steatosis	26 (68.42%)	-	-	-
Cirrhosis	12 (31.58%)	-	2 (25.0%)	-
Hepatitis	-	-	5 (62.5%)	-
Chronic Venous Congestion	-	-	-	-
Portal Triaditis	-	-	-	-
Granulomatous Pathology/ Tuberculosis	-	-	1 (12.5%)	1 (100%)
Metastatic Deposits of Carcinoid Tumour	-	1 (100%)	-	-
Normal	-	-	-	-
Total	38 (100%)	1 (100%)	8 (100%)	1 (100%)
Mcnemar Value	3.000			
p value	0.223			

In 100 liver autopsy cases included in the present study, 48 cases had ante-mortem clinical diagnosis and 52 cases had no clinical diagnosis.

From the above table, we can conclude that there is no significance difference between the clinical diagnosis and pathology diagnosis as there $p > 0.05$ therefore both are showing correlation.

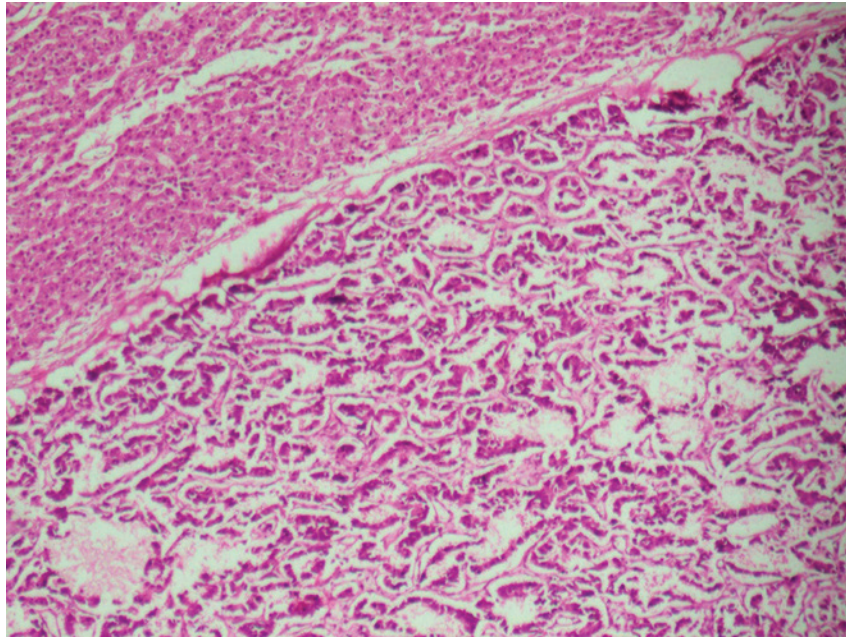


Fig 1. Histopathological Section showing interface between normal liver tissue and metastatic deposits of carcinoid tumor (H & E 40x)

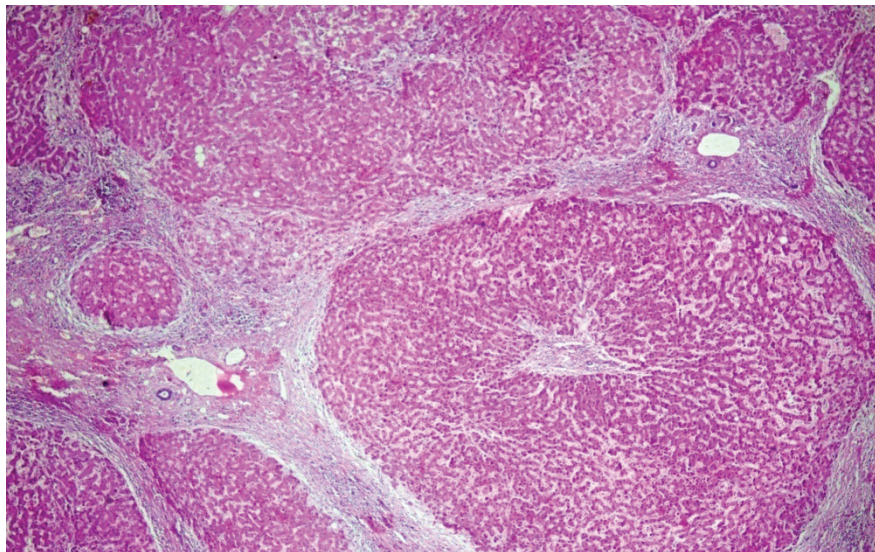


Fig. 2: Histopathological Section of hepatic cirrhosis exhibiting nodular pattern (H & E 40x)

Discussion

A wide spectrum of liver pathologies has been observed in liver autopsies and has a significant role in mortality across the globe.

. In the present study , clinical diagnosis was available in 48 cases. The age of the cases in the present study ranged from 12 years to 90 years; however, the

predominant population was in the 4th decade with a mean age of 39.92 ± 12.68 years. The results of the present study agree with the studies by Selvi et al^[6] (2012), in which the mean age was 46.9 ± 5.28 years. The decline in the number of cases beyond the age of 80 years reflects the average life span of people in our country.

Liver diseases predominated in males in the present study (86%) compared to females (14%). These findings were in close concordance with the study done by Singal et al^[5] (2017) where maximum cases predominated in males (82.8 %). This may be attributed to the fact that men are more prone to alcohol consumption.

In the present study, hepatic steatosis (38%) was the most common silent liver disease. This finding is similar to studies conducted by Bal et al^[2] (2004) showing 39% cases.

Alcoholic liver disease was the most common clinical diagnosis observed in 38 cases. Out of total 38 cases of hepatic steatosis, 26 (68.42%) cases had alcohol liver disease as a clinical diagnosis and 12 (23.08%) cases were incidental findings. This finding is similar to study conducted by Tuusov et al^[10] (2014) where association of alcohol liver disease with hepatic steatosis was found to be 60.5%.

Maximum cases of hepatic steatosis in the present study belonged to the age group of 40-49 years comprising to be 52.63%. Similarly, study conducted by Bal et al^[2] (2004) found maximum cases (53.85%) in the same age group.

In the present study, maximum cases of cirrhosis was seen in the age group of 40-49 years i.e. 6 (42.86 %) cases which is comparable to the study conducted by Devi et al^[7] (2013) with maximum cases in 40-49 years age group i.e. 10 (40 %) cases.

The frequency of cirrhosis in the present study was seen in 14 (14 %) cases which is comparable to the study conducted by Bal et al^[2] (2004) showing 14% cases of cirrhosis. Whereas, Singal et al^[5] (2017) and Konjengbam et al^[8] (2017) found cirrhosis in 11.4% and 11.8% cases respectively. In the present study, cirrhosis was predominately seen in males i.e. 13 cases (15.12%) which is in concordance with study done by Singal et al^[5] (2017) where males predominated i.e. 8 cases (13.7%). In the present study, 12 out of 14 cases (31.58%) had history of alcohol liver disease whereas other 2 cases (25%) had history of jaundice with viral etiology. In study conducted by Goncalves et al^[11] (2014), association of alcohol liver disease and cirrhosis was found to be 40.5%. In a study conducted by Nandakumar et al^[12] (2003), frequency of virus induced cirrhosis was found to 25 % which is concordant with the present study (25%).

The present study shows the frequency of hepatitis in 8 (8%) cases which is in concordance to the study conducted by Singal et al^[5] (2017) i.e. 6 (9%) cases. Similarly Konjengbam et al^[8] (2017) had 6.2 % cases. In the present study, hepatitis viral serology was not performed however, 5 out of 8 cases (62.5%) presented with clinical diagnosis of jaundice with viral etiology and 3 cases (5.77%) were incidental findings on histopathology.

The maximum cases of hepatitis is found in age group of 20-29 years i.e. 3 (37.5%) cases which is comparable to the study conducted by Devi et al^[7] (2013) where maximum cases were in 20 -29 years age group i.e. 7 (32%) cases. This could be attributed to the intravenous drug usage in younger age group in these regions. No case of fulminant hepatitis was noted.

The frequency of chronic venous congestion in the present study is 13 (13%) cases. This finding is in accordance to studies conducted by Konjengbam et al^[8] (2017) showing 11.5% cases .

In the present study, the incidence of portal triaditis is 12 % which is similar to the studies conducted by Devi et al^[7] (2013) and Konjengbam et al^[8] (2017) with 15 % and 10.9 % cases respectively.

In the present study, the frequency of granulomatous/tuberculosis pathology is 2 % which is similar to studies conducted by Konjengbam et al^[8] (2017) and Singal et al^[5] (2017) showing 2.1% and 1.5% cases respectively.

In one case of Granulomatous/Tuberculosis pathology, there was ante-mortem clinical diagnosis of tuberculosis (100%). Ziehl Neelsen stain was positive in one case of Granulomatous/tuberculosis pathology exhibiting acid fast bacilli.

In the present study, the frequency of metastatic deposits is 1 % similar to the study conducted by Selvi et al^[6] (2012) and Patel et al^[9] (2017) showing 1.9% and 0.24% cases respectively. The age of the case in the present study was 47 years. The histopathological finding in this case correlated with the positive ante-mortem clinical diagnosis of cancer (100%).

The primary origin of the metastasis is unknown in the present study however, Patel et al^[9] (2017) reported a case of metastatic carcinoma from lung adenocarcinoma in their study. In the present study, liver findings were normal in 12% cases which are comparable to studies

conducted by Singal et al^[5] (2017) and Konjengbam et al^[8] (2017) showing 13% and 14% cases respectively.

Conclusion

From the present study, we conclude that autopsy specimens of liver

helps to identify silent liver diseases. The incidence of hepatic pathology being more common in males as compared to females. Histopathological examination and clinical correlation are two most important tools for diagnosis of liver diseases.

Conflict of Interest : Nil

Source of Funding: Nil

Ethical Clearance : Taken

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