



HISTOPATHOLOGICAL FINDINGS IN LIVER AUTOPSIES; A REVIEW OF 70 CASES IN A TERTIARY CARE CENTER.

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ABSTRACT

Introduction : Liver is a very important organ for many diseases . They could be either primary or secondary diseases. The most common secondary involvement of liver maybe due to cardiac, metabolic and social problems like alcoholism. In addition, drug toxicity , injudicious use of topical applications, herbal remedies and environmental exposures also play a major role in the causation of liver diseases.

Aims and Objectives:

1. This study aims at finding out the prevalence of liver diseases in random autopsy specimens..
2. It also gives an idea about the various diseases involving the liver and the nature of their severity.

Materials and Methods: This study was conducted in the Department of Pathology; Victoria hospital, Bangalore Medical College and Research Institute, Bangalore. The autopsy specimens were sent by the Department of Forensic Medicine of the same Institute. It is a randomized study choosing a month of each year between 2013 to 2017. A total of 70 cases were included in this study. Tissue sections were made and stained with Hematoxylin & Eosin stain and Masson's Trichome stain.

Results: The total number of cases were 70. Liver diseases were predominant in males. The number of cases in males were 59(84%) and females were 11(16%). Male to female ratio was 5:1. Mean age was 35 years. The most common age group involved was 21-30 years with 24(34.28%) cases. Followed by the age group of 31-40 years 14 cases(24.28%). 1 case (1.42%) each was noted in the age group of 71-80 years and 81-90 years respectively. The most common histopathological finding was steatosis 25(35.7%) cases, followed by congestion 19(27.14%) cases. 11(15.7%) cases of Steatohepatitis, 4(5.71%) cases of Chronic Venous Congestion, 3(4.28%) cases of Cirrhosis. 1 each (1.42%) of Cavernous Hemangioma, Hepatocellular carcinoma, military tuberculosis and Leukemia/lymphoma infiltration were noted. 4(5.71%) cases were unremarkable.

Conclusion: Autopsy plays a very significant role in finding out the cause of death. It also contributes to the macro and histopathological findings and clinical information.

KEYWORDS : Histopathology, autopsy, steatosis.

INTRODUCTION: Liver is the most important and vulnerable major organ in our body¹. The involvement of liver by the diseases could either be primary while in others the hepatic involvement is secondary to cardiac decompensation, alcoholism or extrahepatic infections¹. The main purpose of autopsy study is to know the exact cause of death². Liver is also the frequent site for metastatic spread of primary malignancies such as that of gastrointestinal tract².

The study aims at the prevalence of silent liver diseases and its correlation with age, sex, life style and other risk factors³. Quite rightly liver is called the custodian of milieu interior⁴. To list a few of the abnormal findings in liver autopsy are fatty change, heparlobatum, glycogen storage diseases, acute phosphorus poisoning, hemosiderosis, actinomycosis, infarcts, cloudy swelling, Tuberculosis, acute passive hyperemia, chronic passive hyperemia, amyloidosis, abscess, hydatid cyst, malignancy, cirrhosis and acute yellow atrophy. Alcohol abuse leads to 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 patient⁵.

MATERIALS AND METHODS: This study was carried out in the Department of Pathology, Victoria Hospital, Bangalore Medical College and Research Institute, Bangalore. These specimens were sent from the Department of Forensic Medicine of the same institute. This is a randomized study choosing a month of the year between 2013 to 2017. A total of 70 cases were included in this study. Liver specimens were received as a part of examination of multiple viscera taken out during autopsy for examination.

Following recording of history and thorough post mortem examination, gross examination of the liver specimen was done as regards to the weight, surface, capsule, color, consistency etc. After fixation in 10% formalin, paraffin blocks were made. Sections were cut and stained with Hematoxylin and Eosin Stain and were examined under the microscope. The finding of the examination were recorded and analysed.

RESULTS: In this study out of 70 cases: Males were 59(84%) cases, while females were 11(16%) cases. The male to female ratio was

5:1. The mean age is 35 years.

TABLE-I

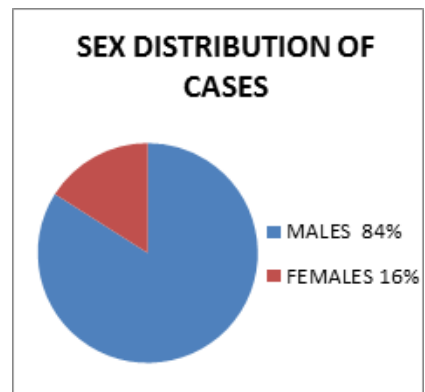


TABLE-II Age and sex distribution of cases (n=70 cases):

Age (years)	Male	Female	Total	Percentage
0-10	04	01	05	7.14%
11-20	01	01	02	2.85%
21-30	22	02	24	34.28%
31-40	14	03	17	24.28%
41-50	08	02	10	14.2%
51-60	06	00	06	8.5%
61-70	03	01	04	5.71%
71-80	00	01	01	1.42%
81-90	01	00	01	1.42%
	59	11	70	100%

59 (84%) cases were males and 11 (16%) cases were females.

As per table II males dominated in this study when compared to females. The most common age group involved was 21-30 years i.e. 4th decade of life with 24(34.28%) of cases. Followed by 17(24.28%)

cases in the age group of 31-40 years i.e 5th decade of life. 1(1.42%) case each in the age group of 71-80 years and 81-90 years.

TABLE-III Histopathological findings along with sex wise distribution of cases (n=70 cases):

Histopathologic findings	Male	Female	Total	Percentage
Congestion	13	06	19	27.14 %
Chronic venous congestion	03	01	04	5.71 %
Steatosis	23	02	25	35.7 %
Cirrhosis	03	00	03	4.28 %
Steatohepatitis	10	01	11	15.7 %
Unremarkable	03	01	04	5.71 %
Cavernous hemangioma	01	00	01	1.42 %
Hepatocellular carcinoma	01	00	01	1.42 %
Miliary tuberculosis	01	00	01	1.42 %
Leukemia/lymphoma infiltrates	01	00	01	1.42 %
	59	11	70	100 %

The most common histopathological findings were of steatosis-25(35.7%) cases, followed by congestion- 19(27.1%) cases. 11(15.7%) cases of steatohepatitis, 4(5.71%) cases each of chronic venous congestion. 4(5.71%) cases were unremarkable. 3(4.28%) cases of cirrhosis. Lastly, 1(1.42 %) case each of cavernous hemangioma, hepatocellular carcinoma, miliary tuberculosis and leukemia/lymphoma infiltrates.

DISCUSSION:

The number of cases involving males 59(84%) and females 11(16%) cases. Male to female ratio was 5:1. A study conducted by Poonam Singhal et al⁵ showed 70 cases wherein 58(83%) cases were males and 12(17%)cases were females. Male to female ratio was 5:1. M.S.Bal⁶ et al also reported 100 cases of liver specimens wherein males were 83% and females 17%. Male to female ratio was 5:1. Behera A et al⁷ studied 64 cases. Out of which 53(82.81%) were males and 11(11.78%) were females. Male to female ratio was 5:1. On analysis of the above studies it is noted that there is male predominance. This may be attributed to the fact that men are more prone to alcohol consumption and smoking. In the present study the most common age group involved was 21-30 years i.e 4th decade followed by 31-40 years i.e 5th decade of life. 1 case each in the age group of 71-80 years and 81-90 years of life was reported. The present study coincides with Behera et al⁷ findings. 4th decade of life involvement of liver disease was reported by the following authors^{2,3,4}.

In this study the most common histopathological finding was steatosis 25 (35.7%) cases followed by congestion 19 (27.14%) cases, steato hepatitis 11(15.7%) cases, 4(5.71%) cases of Chronic venous congestion liver, 3 (4.28%)cases of Cirrhosis, 4 cases of normal histology. 1case each of Cavernous Hemangioma, Hepatocellular Carcinoma, Miliary Tuberculosis and Leukemia/Lymphoma infiltrate.

Histopathological study is of great value in diagnosing liver diseases. Some may remain silent and diagnosed only at autopsy. The commonest lesion seen was Steatosis (Fatty Liver).

Studies done by various authors

Authors	Number of cases of Steatosis	Percentage
Poonam Singal et al ⁵	24	34%
M.S.Bal et al ⁶	39	39%
Rasoul Sotoudehmanesh et al ⁸	283	31.6%
Nidhi Sheth et al ¹¹	115	32.95%
Prashanth R. Patel et al ¹³	146	35.66%
Present study	23	35.7%

The above studies give a comparative analysis of the same. This proves the fact that males are more addicted to alcohol consumption. Alcohol is the major cause of fatty liver. Regular intake of alcohol between 40-

80 grams increases the liver weight and frequency of fatty change in liver.

Fatty liver may be due to alcoholic or non alcoholic causes. Etiologies which can coincide with or lead to necroinflammation and fibrosis⁷. Non alcoholic fatty liver diseases can be diagnosed by the evidence of fatty change in the liver in the absence of a history of excessive alcohol consumption. The histologic spectrum of Non Alcoholic Fatty Liver Disease spans from generally benign, bland steatosis to steatosis with evidence of hepatocellular inflammation and damage (Non Alcoholic Steato Hepatitis or NASH) which maybe complicated by progressive fibrosis and cirrhosis. NAFLD can be primary or secondary depending upon the cause⁹. NAFLD is more frequent among people with diabetes(50%) and obesity(76%) and it is almost universal among diabetic people who are morbidly obese⁹. Obesity, diabetes and the metabolic syndrome are also risk factors for NASH and for advanced fibrosis⁹. Prevalence increases with age from 2.5% among children to 26% among people 40-59 years old⁹.

The second most common histopathological finding was congestion with 19 (27.14%) cases. The findings of A.Behera et al⁷ showed 13(20.31%) cases. Nidhi Sheth et al¹¹ also showed 66(18.91%) of cases. The above two studies have similar findings to this study.

In the present study there were 11(15.7%) cases of steato hepatitis. These findings were in concordance with M.A.Sameer et al² and Madhubala Devi et al³ with 17(11.33%) and 17(17%) cases respectively.

Chronic venous congestion of the liver constituted 4(5.71%) cases in our study. This is in comparison with the studies of Madhubala Devi et al³ and M.S Bal et al⁶ with 5(5%) cases and 9(9%) cases respectively. Venous congestion of the liver is terminal end stage of the death seen in most of the liver autopsies⁶.

3(4.28%) cases of Cirrhosis were diagnosed in this study.

Cirrhosis is defined as diffuse process characterized by fibrosis and the conversion of normal liver parenchyma into structurally abnormal nodules. Cirrhosis is among top 10 cases of death.¹⁴

Cirrhosis usually is an end stage process that may have multiple causes. The most frequent are Chronic Hepatitis B and C and alcoholic and non alcoholic steatohepatitis. Less frequent causes are autoimmune and biliary diseases and metabolic conditions such as Hemochromatosis. The main complications of cirrhosis are related to decreased liver functions, portal hypertension and increased risk for development of Hepatocellular Carcinoma¹⁴.

Study done by various authors

STUDY	NO. OF CASES OF CIRRHOSIS	PERCENTAGE
Sameer et al ²	11	7.33%
Smitha S Pudale et al ¹⁰	20	4.43%
Nidhi Seth et al ¹¹	19	5.44%
R.Thamil Selvi et al ¹²	08	7.4%
present Study	03	4.28%

1 case(1.42%) of Miliary Tuberculosis was diagnosed in this study.

Poonam Singhal et al⁵, Prashant et al¹³ and Monika Garg et al¹⁵ also reported 1 case each with 1.5%, 0.24% respectively.

Among the neoplasms there was 1 (1.42%) case of Cavernous Hemangioma, followed by 1(1.42%) case of Hepatocellular Carcinoma and 1(1.42%) case of Leukemia/Lymphoma infiltrates.

Rasoul Sodoudeh Manesh, Masoud Sotoudeh, Ali Ali – Asghari et al⁸ also reported 1 case each of Haemangioma and Hepatocellular carcinoma. V. Selvam, R.Thamil Selvi et al¹ reported 1.9% cases.

1(1.42%) case of leukaemia/ lymphoma infiltrates was reported. Similarly Prashant R. Patel et al¹³ also reported 1(0.24%) case. 4(5.71%) cases showed no significant pathology.

Pattern and frequency of common diseases of the liver are almost similar to other studies. Silent Liver diseases are very common

amongst apparently healthy individuals.

CONCLUSION :

Autopsy is a magnificent learning tool in the hands of pathologists to study the histo pathological spectrum of diseases which help to study the in situ process as well as to study the rare incidental findings.

In our study the commonest lesion was Steatosis followed by congestion. The age group was in the 4th to 5th decade of life. The incidence of liver diseases is more common in males compared to females. Since Non Alcoholic Fatty Liver Disease and Non Alcoholic Steato hepatitis are common and may lead to serious clinical emergencies, they should seriously be considered as an important threat to the health of the general population.

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