A Histopatholoical Study of Liver in Autopsy Cases

Daxa Rathod[1] , Bhavika vaghela[2] , Hansa Goswami[3]

[1]Post graduate Resident, [2]Associate Professor, [3]Professor & Head Of Department, Department of Pathology, B.J. Medical College, Ahmedabad

Abstract

Introduction: An autopsy is a magnificent learning tool in the hands of pathologists to study the histopathological spectrum of diseases which help to study the in situ disease process as well as rare incidental diagnosis.In certain cases where cause of death is unknown,histopathological examination can give us opinion regarding cause of death.Liver is one of the vital organ and main site of metabolism,as a results it also become site for large number of diseases,of which most of them are symptomatic while few liver diseases are diagnosed on autopsy.Aim of the study is to analyse various hepatic pathology in liver autopsy cases.

Materials and Method: It is a retrospective study of 100 cases of liver autopsy received during the period of two months in BJMC,Ahmedabad.

Viscera of liver(as a whole or in pieces) were received along with its clinical detail, suspected cause of death and postmortem findings.Gross and microscopic examination of liver tissue were performed in detail.

Results: Most of the specimen having normal cut surface followed by greasy surface.The most common microscopic finding was congestion(58%) followed by fatty liver (20%),cirrhosis(8%),chronic passive venous congestion(9%),Necrosis(4%),Sickle cell RBCs in congested vessel(1%).Most common age group affected was 31-40 years of age. Minimum age was 7 years and maximum was 83 years.Male accounting 66% while female only 34%.

Conclusion: Silent diseases of the liver are not uncommon. Autopsy examination of liver is very helpful to identify silent liver diseases.Most common microscopic finding observed in present study was congestion followed by fatty liver with male predominance.Most common age group affected by fatty liver was 41-60 years.

***Keywords**: Autopsy, Congestion, fatty liver, cirrhosis*

Introduction

Liver is most vulnerable and major organ in our body facing wide variety of problems like metabolic,toxic,microbial and circulatory disturbances.

Alcohol implications in more than 50% of liver related deaths and complications of alcoholism contribute to a quarter of million deaths annually.[(1)]

Alcohol abuse generally leads to pathological distinct liver diseases, in which most frequent hepatic lesions are fatty change, hepatitis[(2)] and alcoholic cirrhosis.These diseases are presently the most common chronic liver disease problem in developing country like India.[(3)]

Section cirrhosis of liver onset is between at age of 20-80 years but peak is between 40 and 50 years of age. [(4)]

Corresponding Author:
Dr. Bhavika Vaghela
Associate Professor, B. J. Medical College and Civil Hospital, Asarwa, Ahmedabad, 380016,
Gujarat, India. E-mail:daxarathod10@gmail.com
drbkv1@gmail.com, Ph: 7990743864(dr.Daxa)
7990604034 (dr.Bhavika mam)

Apart from the major three liver disease, chronic malingnancy, yellow atrophy, infarct, swelling can be seen as "silent liver disease"in histological finding.[5]

Aim and Objectives

To find the prevalence of liver disease among population in the course of medicolegal investigations of of deaths.

Materials and Method

A retrospective study on 100 cases received during the period of August 2019 to September 2019 was carried out in the autopsy section, department of pathology, B.J. Medical college, Ahmedabad.

Specimens were examined grossly as well as microscopically.Post mortems being done in our institutions are not only with criminal, suspicious, accidental and suicidal deaths, but with a wide range of deaths from natural causes. Many of these are sudden, unexpected, clinically unexplained or otherwise obscure, even though there need be no unnatural element in their causation. Whole Liver specimens or one or multiple pieces of liver were received, either as a part of examination of multiple viscera or to confirm antemortem medical illness.Mild to moderate autolytic changes are commonly seen in some specimens because of the improper preservation and delayed receiving of specimens.

Fully Autolysed specimens were not included in present study.In each case, important information regarding age, sex, clinical findings, suspected cause of death and post mortem findings were obtained from post mortem examination. Gross examination of the liver specimen was done as regards the weight, surface, capsule, colour, consistency, etc. Specimen is fixed in 10% formalin. Sections from representative area were submitted for processing. After processing tissues were sectioned and stained with H&E stain. For evaluation of liver architecture Reticulin and Masson'strichrome stains were also used whenever required. Sections were examined microscopically and findings were recorded,analyse and correlated with history and postmortem findings.

Results

During the study period of two months, total 100 cases were examined. On Histopathological examination. Cases of autolysis were excluded from the study.

Table 1: Gross findings

Color	Consistency	Cut surface	No of cases(100)	Percentage(%)
Normal	Soft	Smooth	57	57
	Soft to firm	Smooth with whitish area at places	5	5
Yellowish green	Firm	Nodular	6	6
Reddish brown with alternate pale and dark area	Soft	Nutmeg	5	5
Yellowish brown	Soft	Greasy	27	27

Table 1 suggest gross findings of liver specimens. Most of the specimen received having normal cut surface(57%) followed by greasysurface (27%). Others gross findings include nodular,nutmeg surface with alternate dark and light band and few having whitish areas.

Table 2-Age Distribution

Age	Number	Percentage(%)
0-10	1	1
11-20	3	3
21-30	20	20
31-40	29	29
41-50	22	22
51-60	16	16
61-70	6	6
71-80	2	2
81-90	1	1

Table 2 shows age wise distribution of cases.Most common age group involved is 31-40 years followed by 41-50 years. Minimum age of received specimen was 7 year and maximum age was 83 years.

Histopathological diagnosis:

Histopathological diagnosis	Male (66)	Female (34)	Total no.of cases(100)	%
Congestion	37	21	58	58%
Fatty changes	15	5	20	20%
Chronic venous congestion	6	3	9	9%
Cirrhosis	5	3	8	8%
Necrosis	3	1	4	4%
Sickle cell RBCs in congested vessels-in case of sickle cell anemia	0	1	1	1%
Total	66	34	100	100

Table 3 illustrate Microscopic findings suggesting congestion (58%) as most common finding followed by fatty liver(20%), cirrhosis (8%), chronic passive venous congestion(9%),necrosis(4%) and sickle cell RBCs in congested vessels in case of sickle cell anemia (1%). Among 100 cases 66 cases were of male and 34 cases of female showing male predominance.

Table 4-cases of congestion

Age	Male	Female	Total	%
0-20	3	2	5	5%
21-40	20	11	31	31%
41-60	11	5	16	16%
61-80	3	2	5	5%
>80	0	1	1	1%

Table 4 shows age and gender wise distribution of cases of congestion which is most common finding observed in present study.Most common age group involved is 21-40 years of age with male predominance.

Table 5- cases of fatty change

Age	Male	Female	Total	%
0-20	1	0	1	1
21-40	5	2	7	7
41-60	7	2	9	9
61-80	2	1	3	3
>80	0	0	0	0

Table 5 shows age and gender wise distribution of cases of fatty liver. Most common age group involved is 41-60 years of age with male predominance.

Table 6-comparison study

Type of Hepatic lesions	Tamil selvi(2012)	Smita Pudale(2013)	Present study
Congestion	16.7%	29.5%	58%
Fatty changes	29.9%	15.52%	20%
Chronic venous congestion	-	-	9%
Cirrhosis	7.4%	4.43%	8%
Necrosis	-	-	4%
Sickle cell RBCs in congested vessels-in case of sickle cell anemia	-	-	1%
Abscess	7.4%	-	-
Hepatitis	13.9%	21.29%	-
Granulomatous lesions	-	3.10%	-
Neoplastic lesions	1.9%	2.88	-
Other	-	2.22%	-

Table 6 illustrate comparison between present study with other study.

Discussion

Histopathological study is useful in diagnosing silent liver disease.According to study conducted by Fubara S et al, most common age group affected was 41-49 years (28%),in present study most common age group affected was 31-40(29%) years followed by 41-50 years(22%).

In present study, most common finding is venous congestion seen in 58% of cases which is slightly higher as compared to study conducted by Dr. M A Sameer et al where Circulatory disorder (CVC) is the most common finding i.e. 31.33%.[7]

Fatty change was more common in age group of 41-50 years of age years reported by Bal Ms et al [8] in their study and in present study most common age group is 41-60 years. Result of present study(20%) was comparable to study conducted by Tamil.Selvi R. et al. (26.9%)[9]

In the present study, only 8% case of cirrhosis was seen which is lower as compared to Sameer et al 7.33% cases and Tamil.Selvi R et al.7.4% [7,9]

About 9% cases shows chronic venous congestion and 4% cases show Necrotic changes.One case show sickle shaped RBCs in congested vessel of liver tissue which was known case of sickle cell anemia.

Conclusion

The use of autopsy findings in conjunction with other scientific methods and investigative techniques remains as valuable today as it was centuries ago, both in daily practice and for scientific endeavour.Silent liver disease are very common in apparently healthy individual and if not detected early some of this condition may lead to serious outcome.

Histopathology plays a vital role in medico-legal autopsy cases in which cause of death is not known.This Study was performed only on specimen collected during autopsy and may differ from the actual incidence of liver disease in the region.

Ethical Clearance: All procedures performed were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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Conflict of Interest: Nil

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