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Original Research Article

Unveiling liver pathology in autopsy cases

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Abstract

Background: Liver constitute the site of many diseases and involved in various kinds of inflammatory, neoplastic and other lesions. Liver is the most common site for metabolic functions which is prone to get various type of injury due to exposure of chemicals, toxins and drugs. Autopsy examination serves as an important histopathological evidence to detect various changes occurring in liver and it has also helped the forensic experts to ascertain the cause of death. Histopathology of liver at autopsy thus become an important extended method to assess the liver diseases.

Materials and Methods: This is a retrospective study conducted in the Department of Pathology, Karnataka Medical College and Research Institute Hubballi. This study was conducted for the period of two years from July 2019 to June 2021. A total of 228 liver specimens were studied. Since it is a time bound study, all the specimens received during the study period were included.

Results: Among the 228 liver specimen included in the study majority of the specimen (183 out of 228) revealed abnormal liver pathology. The panorama of pathological lesions found in liver extends to wide range of histological patterns. In the present study, steatosis was the common liver abnormality which was noted in half of the specimens 93(50.82%), followed by congestion 28 (15.3%), steatohepatitis 25(13.66%), cirrhosis 23(12.57%), hepatitis 8 (4.37%) with one case of each acute injury, simple cyst, haematoma and cavernous haemangioma.

Conclusion: Liver is a vital organ which is involved in various metabolism and detoxification. Liver autopsy reveals a wide spectrum of disorders. By analysing the macroscopy and microscopy features of the liver, we can elucidate the mechanism of disease. This study enables to know about the various patterns of liver changes that occur microscopically and further establishing underlying pathogenesis and pathology.

Keywords: Steatosis, Hepatitis, Autopsy.

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1. Introduction

The liver is the largest organ of human body. The hepatocytes perform numerous and vital functions like synthesis of serum proteins, production of bile, regulation of nutrients and metabolism of drugs.[1]

Liver dysfunction arises from a variety of causes, including infections, toxins, metabolic disorders, and autoimmune diseases. These insults can lead to inflammation, damage to liver cells (hepatocytes), and eventually fibrosis (scarring) and cirrhosis.[2]

The liver's role in metabolism makes it prone to injury from various substances, including toxins, drugs, and chemicals. Liver diseases may remain asymptomatic for long periods and frequently present only in advanced stages.[2]

Pathological autopsy is carried out to diagnose the disease which has caused the mortality when antemortem efforts failed. Consequently, pathological examination of the liver during autopsies becomes a crucial avenue for detecting silent hepatic diseases. By systematically analysing gross and histological alterations, autopsy studies contribute significantly to enrich medical knowledge and assist in correlating clinical findings.[3]

Considering these facts, the present study was done to assess the prevalence of abnormal liver pathology, describe the various gross and microscopic findings and thus assessing the spectrum of histopathological patterns of liver diseases in autopsy cases.

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2. Aims and Objectives

1. To assess the spectrum of histopathological patterns of liver diseases in autopsy cases.
2. To describe the gross findings as well as microscopy in detail to establish the liver disease.
3. To assess the prevalence of abnormal liver pathology.

3. Materials and Methods

This was a retrospective study conducted in the Department of Pathology, Karnataka Medical College and Research Institute Hubballi. This study was conducted for the period of two years from July 2019 to June 2021.

3.1. Source of data

A total of 228 liver specimens were studied. All the liver samples sent for Pathological autopsy to Department of Pathology KMCRI, Hubballi was considered. Majority of the sample were sent by Forensic medicine KMCRI, Hubballi after Postmortem analysis and few of them were sent by District and Taluk hospitals from the surrounding regions of Hubballi.

The medico-legal autopsy cases irrespective of age, sex satisfying selection criterion were included in the study. The liver specimen were examined grossly and microscopically. Special stains of RT were used wherever required.

4. Results

All the 228 liver specimens were grossed and H and E sections were studied. The gross specimen and H and E slides were examined for the morphological changes. The results studied in this study is classified under the following headings:

4.1. Age distribution

In this study majority of the specimens (23.25%) belonged to the patients who were aged from 41 to 50 years followed by 50 to 60 years(21.05%) indicating that liver disease are more common in the middle age and elderly. However, 2.19% and 0.44% of the specimens belonged to the patients who were aged 1 to 10 and 71 to 80 years. The **Table 1** show the age wise distribution noted in the present study.

Table 1: Age wise distribution in the present study

Age group (Years)	Distribution (n=228)	
	Number	Percentage
1 to 10	5	2.19
11 to 20	12	5.27
21 to 30	41	17.98
31 to 40	43	18.86
41 to 50	53	23.25
51 to 60	48	21.05
61 to 70	25	10.96
71 to 80	1	0.44
Total	**228**	**100.00**

4.2. Sex distribution

In the present study there was a male preponderance (74.12%) compared to females (25.88%) with a male to female ratio of 2.86:1.

4.3. Specimen type

The autopsy specimens were sent as either a complete liver or a part of liver. In the present study 209 samples (91.67%) were sent as partial specimens and 19(8.33%) as complete specimens. The largest specimen was complete specimen of liver weighing about 1750gm.

4.4. Gross findings

All the 228 specimens were examined and all the gross findings were noted. It was seen that in this study 91.67% of the liver had smooth surface, while rest of the specimen had nodular surface. Nodular pattern comprised of micronodular (5.26%), macronodular (1.32%) and combined micro and macronodular (1.75%) (**Figure 1** A)

Majority (61.40%) of the specimen were firm in consistency (**Figure 1** B) while 38.60% cases had soft consistency. On cut surface- majority (51.32%) specimens were grey yellow in colour with maintained liver architecture. Other findings noted were nutmeg (3.07%), hematoma, simple cyst and haemorrhage.

4.5. Histomorphological patterns

The detailed histomorphological study was done on all the 228 cases in the present study**.** The architectural pattern and cellular features were studied by H and E slides and diagnosis was made. The distribution of microscopic patterns were analysed and is categorised as shown in **Table 2**.

Table 2:

Microscopic patterns	Distribution (n=183)	
	Number	Percentage
Steatosis	93	50.82
Congestion	28	15.3
Steatohepatitis	25	13.66
Cirrhosis	17	9.29
Hepatitis	8	4.37
Early cirrhosis	6	3.28
Acute injury	1	0.55
Sickling	1	0.55
Simple cyst	1	0.55
Non-Hodgkin's lymphoma deposits	1	0.55
Hematoma	1	0.55
Cavernous haemangioma	1	0.55
Total	**183**	**100.00**

In this study, steatosis was noted in 50.82% of the specimens followed by congestion and steatohepatitis in 15.30% and 13.66% respectively.

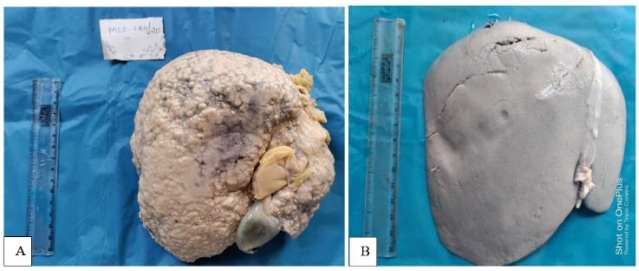

Figure 1: **A)**: Gross image of mixed cirrhosis; **B)**: Gross image of CVC liver (Nutmeg Liver)

4.6. Steatosis

The most common finding found in this study was steatosis comprising 50.82% of the cases. It was most commonly seen in the age group of 31-40, with 29.03% of cases, followed by 21-30 years age group with 24.73% of cases. It showed a male predominance having 69 cases (79.57%) of males and 19 cases (20.43%) of females with male to female ratio of 3.89:1.

Steatosis (fatty change) refers to the accumulation of triglycerides in the cytoplasm of hepatocytes. Microvesicular steatosis is characterized by very small, fine fat globules in the hepatocyte that do not displace the nucleus and is said to occur as a result of mitochondrial injury. In contrast macrovesicular (**Figure 2**) steatosis is seen when the nucleus is displaced to the periphery.

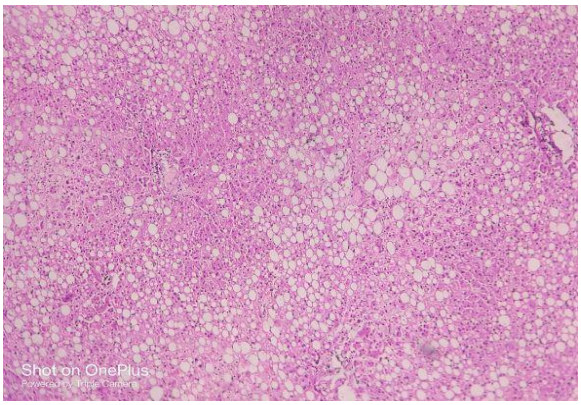

Figure 2: Microscopy of macrovesicular steatosis (H&E, 100x)

4.7. Congestion

In the present study, congestion in the liver was the second common abnormal liver pathology noted in 28(15.3%) cases, among which 7 cases were CVC. It is seen commonly in the age group of 51-60years. It was found more in males 17 cases (60.71%**)** compared to females with 11 cases (39.29%). Microscopically, sinusoids were dilated and congested. Centrilobular necrosis and congested sinusoids (**Figure 5**) were noted in cases which were diagnosed as chronic venous congestion.

4.8. Steatohepatitis

Steatohepatitis was commonly seen in sixth decade. Among 25 cases of steatohepatitis 10 cases (40%) were in the age group of 60-70 followed by fifth decade with 7 cases (28%). Steatohepatitis also showed male predominance with male to female ratio of (3:4). Microscopically, neutrophilic infiltrate was seen between the hepatocytes in the lobules accompanied by steatosis (**Figure 3** B).

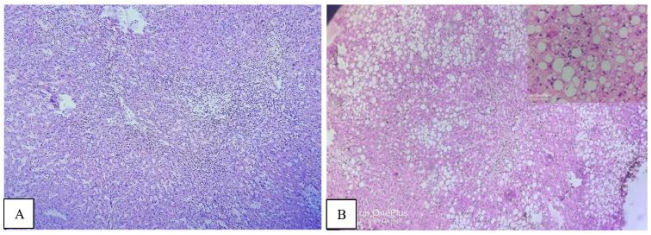

Figure 3: **A)**: Microscopy of lobular hepatitis (H&E, 100x); **B)**: Microscopy of steatohepatitis (H&E, 100x). Inset showing inflammatory cells destroying hepatocytes (H&E, 400x)

4.9. Cirrhosis

In the present study, cirrhosis was seen in 12.57% (23 cases). Out of which 6 cases showed features of early cirrhosis. Micronodular cirrhosis was seen in 12 (52.17%) cases, macro nodular in 3(13.04%) case and mixed nodular cirrhosis in 8(34.78%) cases of cirrhosis. On microscopy, liver architecture was distorted and regenerative nodules were seen. The hepatocytes in these nodules showed round to oval nucleus prominent nucleoli and granular eosinophilic cytoplasm (**Figure 8**). Portal fibrosis was seen in 17(73.92%) and bridging fibrosis in 6(26.08%) of cases. Some of the cases showed bile duct proliferation.

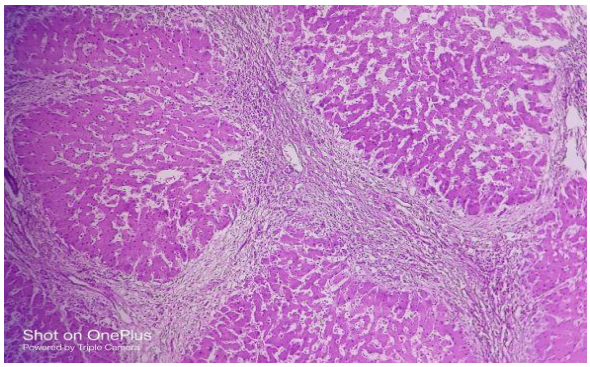

Figure 4: Microscopy of Cirrhosis (H and E, 100x)

4.10. Hepatitis

In the present study, hepatitis was seen in 33 cases (16.94%), among which steatohepatitis was seen in 25 cases (13.66%) and hepatitis in 8 cases (4.37%). Microscopically, periportal inflammation by mixed inflammatory cells comprising of neutrophils, lymphocytes and plasma cells with limiting plate destruction was seen in seven cases and one case of lobular infection destroying the hepatocytes was seen (**Figure 3** A).

4.11. Others

In the present study, other than above cases, we saw each case of simple liver cyst with steatosis, acute liver injury, hematoma with congestion, cavernous haemangioma along with features of steatosis and early cirrhosis, Non-Hodgkin's lymphoma deposits and also a case of sickling with congestion which showed sickle shaped red blood cells in sinusoids (**Figure 8**).

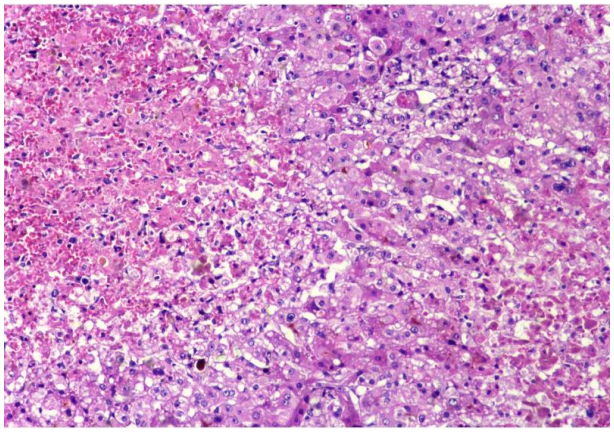

Figure 5: Microscopy of CVC liver (Hand E, 100x)

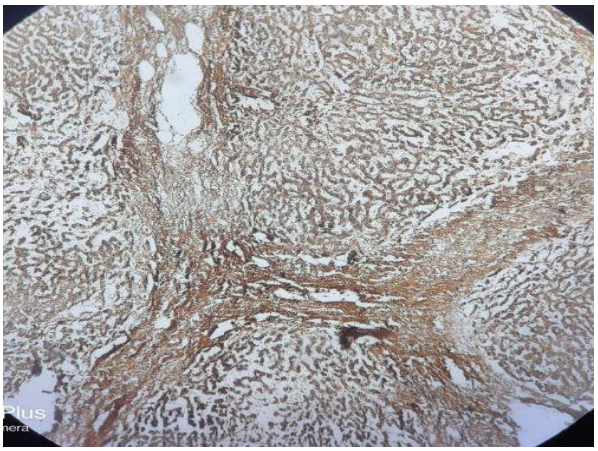

Figure 6: Microscopy of bridging fibrosis in cirrhosis (Reticulin stain 100X)

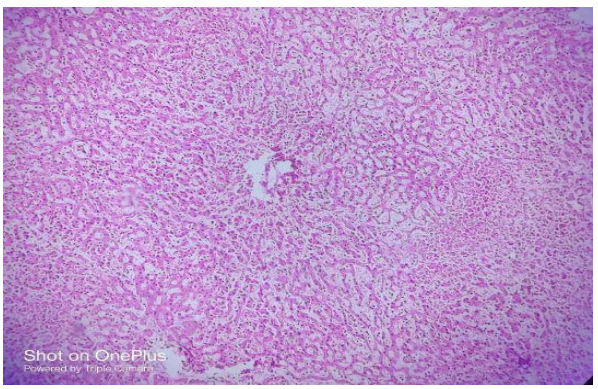

Figure 7: Microscopy of acute liver injury in dengue fever (H&E, 100x)

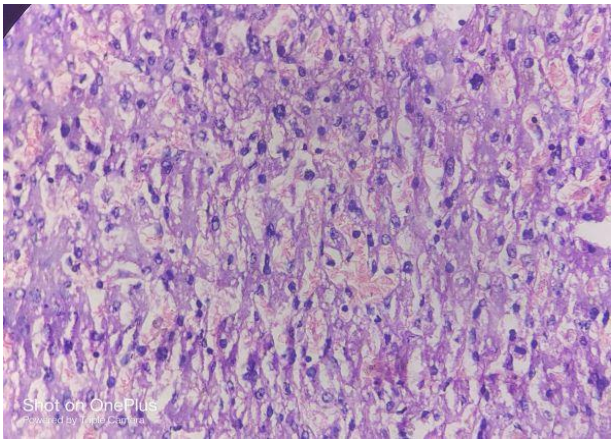

Figure 8: Microscopy of sickled RBC's in sinusoids (H&E, 400x)

5. Discussion

The liver is one of the most vital organs in the body and is vulnerable to a wide variety of problems, including metabolic, toxic, microbial, and circulatory disturbances. The underlying causes of chronic liver diseases vary across different parts of the world and are influenced by factors such as age, sex, socioeconomic status, food habits, lifestyle, locality, and associated infections.[1]

Alcohol abuse often leads to distinct pathological liver diseases, the most common hepatic lesions being fatty change, hepatitis, and alcoholic cirrhosis. Currently, these are some of the most frequent chronic liver diseases seen in Western countries as well as developing nations like India. It is hypothesized that the onset of liver cirrhosis occurs between the ages of 20 and 80 years, with the peak incidence between 40 and 50 years. Quite rightly, the liver has been referred to as "the custodian of milieu intérieur."[13]

Autopsy studies play an essential role in monitoring causes of death and planning medical strategies. They are also an excellent educational tool in pathology, helping to evaluate the histopathological spectrum of diseases. Many liver diseases, especially non-neoplastic ones, are often silent and diagnosed incidentally or sometimes only discovered during autopsy.[5]

The present study highlights the importance of pathological autopsy findings of the liver. Such findings are invaluable in identifying insidious liver diseases that might have either directly caused death or contributed as morbidity factors leading to death. Autopsy-based studies help in estimating the prevalence of liver diseases that often remain asymptomatic until late in their course.

The study included samples from patients who died due to medico-legal causes such as poisoning, snakebite, drowning, and similar circumstances.

This study provides additional diagnostic insights into liver pathology that may have directly or indirectly contributed to patient mortality.

It was a hospital-based prospective study conducted over two years, from July 2019 to June 2021, involving 228 liver autopsy specimens. These specimens, received either as whole livers or liver sections, were analysed at the Department of Pathology, Karnataka Institute of Medical Science, Hubballi.

In the present study, majority of the liver specimen 183 (80.26%) out of 228 revealed abnormal liver pathology suggesting higher incidence of liver abnormalities in the study area. The comparison of abnormal liver pathology noted in the present study with other studies is as shown in **Table 3**.

In the present study, 209(91.66%) part of liver specimen and 19(8.33%) complete liver specimen sent for pathological autopsy was studied. The specimens weighed between 15 to 1750 g. The mean and median weight of the specimen were 295.74±286.02 and 220.00 (IQR 157.50) g. respectively. On gross examination, majority of the specimen had smooth surface in 209(91.67%) cases. Further, Micro nodular, macro nodular and mixed nodular surface is seen in 5.26%, 1.32% and 1.75% respectively. Also, firm consistency was noted in majority of the specimens that is 140(61.40%) cases.

On gross cut surface examination, slightly more than half of the specimens, 117(51.32%) had grey yellow colour followed by normal red brown colour in 104 cases(45.61%) and features of nutmeg liver in 7(3.07%) cases. The other gross findings noted were hematoma, simple cyst and haemorrhage in one case each, that is, 0.43% each.

The panorama of pathological lesions found in liver extends to wide range of histological patterns. In the present study, steatosis was the common liver abnormality which was noted in half of the specimens 93(50.82%), followed by congestion 28 (15.3%), steatohepatitis 25(13.66%) and cirrhosis 23(12.57%). The comparison of common abnormal liver pathology noted in the present study with other studies is as shown in **Table 4**.

5.1. Steatosis

Steatosis refers to the accumulation of triglycerides within the cytoplasm of hepatocytes. Prolonged hepatic lipid storage can lead to liver metabolic dysfunction, inflammation, and progression to more advanced forms of non-alcoholic fatty liver disease (NAFLD). Non-alcoholic hepatic steatosis is commonly associated with alcohol consumption, obesity, type 2 diabetes mellitus, and dyslipidaemia. Several mechanisms contribute to the intrahepatic fat accumulation, including increased fatty acid flux to the liver, enhanced de novo lipogenesis, and/or reduced clearance through β-oxidation or very-low-density lipoprotein (VLDL) secretion.[13]

Microscopically, steatosis may present as microvesicular steatosis, characterized by a foamy cytoplasmic appearance in hepatocytes. In the early stages, steatosis is most prominent in zone 3 of the hepatic acinus, but with disease progression, the fat deposition may either spread uniformly throughout the acinus or become irregularly distributed.

Table 3: Comparison of cases of abnormal liver pathology with other studies

Studies	Year	Abnormal liver pathology	
		Number of cases (n)	Distribution (%)
Thamil Selvi R. et al.[5]	2012	80	74.10
Umesh Babu R. et al.[6]	2015	100	95.30
Simon KA et al.[10]	2020	162	59.26
Kataria SP. et al.[11]	2021	91	91.00
Present study	2022	183	80.26

Table 4: Comparison of histomorphological pattern with other studies

Histomorphological Pattern	Thamil Selvi R. et al.[5] (2011) n=108	Umesh BR et al.[6] (2015) n=105	Choudhury S et al[8] (2017) n=291	Sameer M A et al.[9] (2017) n=150	Kulkarni MP et al.[3] (2020) n=260	Present study (2022) n=183
Steatosis	29(26.9%)	24 (22.8%)	61(20.96%)	30(20%)	78 (30.0%)	93(50.82%)
Congestion	18 (16.7%)	10 (9.52%)	-	47(31.33%)	43(16.5%)	28(15.3%)
Steatohepatitis	—	37 (32.2%)	15(5.5%)	17(11.33%)	17 (6.5%)	25(13.66%)
Cirrhosis	8 (7.4%)	2 (1.9%)	41(14.08%)	11(7.33%)	10 (4.0%)	23(12.57%)
Hepatitis	15 (13.9%)	22 (20.9%)	33(11.34%)	-	20 (7.8%)	8(4.37%)
Miscellaneous	10(9.3%)	5(4.76%)	-	2(1.33%)	19 (7.2%)	6(3.3%)

In the present study, among specimens showing steatosis, microvesicular changes were observed in 24 cases (25.80%), macrovesicular changes in 28 cases (30.10%), and mixed (micro- and macrovesicular) changes in 41 cases (44.08%). Thus, mixed steatosis was the most common pattern noted. Steatosis was also associated with ballooning degeneration in the majority of cases—74 cases (79.57%).

These findings are consistent with previous studies. Devi M et al.[12] reported microvesicular steatosis in 5 cases (29.41%), macrovesicular steatosis in 1 case (5.88%), and mixed vesicular steatosis in 11 cases (67.70%). Kulkarni MP et al.[3] reported that 78% of their cases exhibited macrovesicular fatty changes.

It is important to note that morphological changes in the liver do not occur suddenly; rather, they develop insidiously over time. Steatosis is often the earliest histopathological change, preceding more advanced forms of liver disease. This observation was also confirmed in the present study.

5.2. Congestion

Hepatocyte function and survival can be secondarily affected by vascular injury. Circulatory compromise leads to venous congestion, a common hepatic manifestation observed particularly at autopsy, as there is often an element of pre-terminal circulatory failure in virtually every death. Chronic venous congestion (CVC) and centrilobular necrosis are frequent findings 13.

Right-sided cardiac decompensation results in passive liver congestion, causing the liver to become slightly enlarged, tense, and cyanotic, often with rounded edges. Grossly, the liver exhibits a variegated mottled appearance, traditionally described as a "Nutmeg Liver." Microscopically, congestion of the centrilobular sinusoids is evident.

In contrast, left-sided cardiac failure or systemic shock can cause hepatic hypoperfusion and hypoxia. Hepatocytes in the central zone of the hepatic lobule undergo ischemic necrosis, leading to centrilobular necrosis. Microscopically, this is seen as a clear demarcation between viable periportal hepatocytes and necrotic centrilobular hepatocytes.[13]

In the present study, congestion was identified as the second most common liver pathology, observed in 28 cases (15.3%), including 7 cases of chronic venous congestion (CVC). Congestion was more frequently seen in males (17 cases, 60.71%) compared to females (11 cases, 39.29%).

Microscopically, the findings included dilated and congested sinusoids, along with centrilobular necrosis in cases diagnosed as CVC. Notably, steatosis associated with congestion was observed in five cases. Grossly, the liver appeared slightly enlarged, tense, cyanotic, and had roughened edges.

The observations of the present study are consistent with those of Kulkarni MP et al. who reported congestion as the second most common liver abnormality in 43 cases (16.5%).

5.3. Hepatitis

In the present study, hepatitis was observed in 33 cases (16.94%), among which steatohepatitis accounted for 25 cases (13.66%) and chronic hepatitis for 8 cases (4.37%). Steatohepatitis emerged as the third most common histopathological pattern noted.

Steatohepatitis was most frequently seen in the sixth decade of life with 10 cases (40%), followed by the fifth decade with 7 cases (28%). It was also found to be more common among males (19 cases, 76%) compared to females (6 cases, 24%).

Microscopically, mixed vesicular steatosis was the most common finding, along with a characteristic neutrophilic infiltrate scattered between hepatocytes within the lobules.

Chronic hepatitis, on the other hand, is usually attributed to hepatotropic viral infections, autoimmune hepatitis, or chronic idiosyncratic drug-induced hepatitis, with plasma cells predominating in the inflammatory infiltrate.[13]

In chronic hepatitis cases observed in this study:

1. Portal inflammation was prominent, with dense inflammatory infiltrates composed mainly of lymphocytes and plasma cells involving the portal tracts.
2. Scattered macrophages, neutrophils, and eosinophils were present in 7 cases.
3. One case showed lobular inflammation leading to hepatocyte destruction.
4. Lymphoid follicles and germinal centres were occasionally noted.
5. A bile duct reaction at the periphery of the portal tracts was seen.

Interface hepatitis (piecemeal necrosis/periportal necrosis) was a key finding, characterized by lymphocytes and plasma cells infiltrating the limiting plate, causing degeneration of periportal hepatocytes. In these areas hepatocytes displayed ballooning degeneration, appearing pale and swollen with cytoplasmic clumping. Apoptotic bodies were observed in zones of active interface hepatitis.

5.4. Cirrhosis

Liver cirrhosis is a common end-stage liver disease characterized by diffuse hepatic fibrosis, replacing the normal lobular architecture with parenchymal nodules separated by fibrous tissue bands. Morphologically, cirrhosis is classified into three types:

1. Micronodular cirrhosis (nodules < 3 mm),
2. Macronodular cirrhosis (nodules > 3 mm),
3. Mixed cirrhosis (presence of both small and large nodules).

Table 5: Comparison of age distribution of cirrhosis with other studies

Studies	Thamil Selvi R. et al.[5] n=8	Devi M et al.[12] n=25	Sameer MA et al.[9] n=11	Choudhury S et al[8] n=41	Present study (2022) n=23
≤ 20	-	-	-	-	-
21 to 30	-	3(12%)	-	2(4.87%)	1(4.35%)
31 to 40	-	3(12%)	1(9.09%)	12(29.26%)	-
41 to 50	1(12.5%)	10(40%)	4(36.36%)	16(39.02%)	7(30.44%)
51 to 60	1(12.5%)	7(28%)	6(54.54%)	9(21.95%)	11(47.82%)
61 to 70	6(75%)	2(8%)	-	1(2.43%)	4(17.39%)
71 to 80	-	-	-	1(2.43%)	-

In the present study, cirrhosis was identified in 23 cases (12.57%), out of which 6 cases (26%) showed features of early cirrhosis. A comparison of age distribution of cirrhosis with other studies is presented in **Table 5**.

In this study Cirrhosis was most common in the sixth decade of life (11 cases, 47.82%) with a male preponderance (20 cases, 86.96%). This finding is consistent with the study by Kulkarni MP et al. 3(2019), who reported 10 cases of cirrhosis, with 7 males and 3 females.

Distribution of cirrhosis types in the present study was Micronodular cirrhosis: 12 cases (52.17%), Macronodular cirrhosis: 3 cases (13.04%) and Mixed cirrhosis: 8 cases (34.78%).

Microscopic findings included: Distortion of normal liver architecture with the presence of regenerative nodules. Hepatocytes within nodules showed round to oval nuclei, prominent nucleoli, and granular eosinophilic cytoplasm. Portal fibrosis was noted in 17 cases (73.92%) and bridging fibrosis in 6 cases (26.08%) Bile duct proliferation was observed in a few cases.

Reticulin staining was performed in four cases to better demonstrate bridging fibrosis and portal fibrosis.(**Figure 6**)

Choudhary S. et al. reported that cirrhosis was in 41 cases (14.08%) of total cases, which is comparable with the present study.[8] Sameer MA et al. observed cirrhosis mostly in the age group of 51-60 years a finding consistent with the present study.[9] In contrast, Thamil Selvi R. et al. and Choudhury S. et al. noted cirrhosis commonly during seventh and fifth decade of life, respectively.[5,8] High incidence of cirrhosis and fatty liver in younger age group compared to other studies can be explained by indulge into alcohol consumption or higher incidence of viral hepatitis at young age, which progress to cirrhosis.

5.5. Miscellaneous lesions

In the present study, apart from steatosis, congestion, and steatohepatitis, several uncommon liver abnormalities were observed. These included:

1. Simple liver cyst with steatosis,
2. Acute liver injury,
3. Hematoma with congestion,
4. Cavernous haemangioma along with features of steatosis and early cirrhosis,
5. Non-Hodgkin's lymphoma deposits from the spleen,
6. Sickling with congestion.

A case of acute liver injury was observed in a 12-year-old girl with a history of dengue fever. Microscopically, the liver architecture was preserved, and hepatocytes exhibited round to oval nuclei, fine chromatin, and a moderate amount of granular eosinophilic cytoplasm, with centrivenular necrosis noted.

In the case of sickling, a 50-year-old female with a history of accidental burns was found to have sickle-shaped red blood cells within the sinusoids of the liver. Sickled RBCs were also observed in the lungs and spleen, indicating systemic involvement.

In the case of Non-Hodgkins lymphoma an incidental finding was noted during the postmortem done by Forensic department where there was a lesion in the liver and for academic purpose the sample was sent for pathological examination. After hand E slides were analysed the diagnosis was proven to be Non Hodgkins Lymphoma.

6. Conclusion

1. During the present study of 228 cases of liver autopsy specimens, it was found that the number of abnormal liver pathology was almost same in this region when compared with previous data.
2. Based on the results of this study it may be concluded that, liver diseases are common in study area especially among males than females and during fifth decade of life. The reason because of the high alcohol consumption in the study area and the liver disease has progressed over years to lead to morphological changes. Steatosis is the common microscopic pattern followed by congestion and steatohepatitis.

Histopathological analysis of the organs done during clinical autopsy aids us in understanding the pathogenesis that are unnoticed during the survival of the deceased and also provides an information which might have led to the cause of death.

This study helps in analysing the importance of clinical autopsy where the correlation between the clinical parameters and cause of death is not well established.

7. Source of Funding

None.

8. Conflict of Interest

None.

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