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HISTOPATHOLOGICAL SPECTRUM OF LIVER DISEASES IN AUTOPSY - A STUDY OF 500 CASES AT A TERTIARY CARE HOSPITAL- AN ORIGINAL ARTICLE

Pathology

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ABSTRACT

Introduction The liver is the site of a wide spectrum of disease, primary as well as secondary, which may be symptomatic or silent and incidentally diagnosed during the routine investigation or autopsy examination.

Aims & Objective:

1)To analyze the spectrum of histomorphological features, commonly observed in the liver in different age groups and gender in the autopsy.

2)To study any incidental findings in liver.

3)To compare the present study findings with other studies.

Material And Methods: The present study comprises of 500 liver specimens received in Autopsy Section, Pathology Department of B. J. Medical College, Civil Hospital, Ahmedabad during Jan. 2017 to June 2018.

Result: Most common histopathological pattern noted in this study was circulatory disturbances in the form of acute sinusoidal congestion and chronic venous congestion seen in 288 cases (57.6%) followed by fatty change (30%), cirrhosis (5.6%), liver necrosis (3.8%), hepatitis (0.8%), metastatic carcinoma(0.6%), abscess formation (0.4%), granulomatous lesion(0.2%) and haemangioma (0.2%), 4 cases (0.8%) show no remarkable pathology in the present study.

Conclusion: Autopsy study more frequently discloses various lesions that were undiagnosed clinically and provides valuable information for quality control of health care system.

KEYWORDS

Liver Autopsy, Congestion, Fatty Liver, Cirrhosis.

INTRODUCTION:

An autopsy on the oldest body, an Egyptian mummy 3200 years old has been reported by a team of scientists from Toronto, Detroit, Philadelphia & Cardiff. They demonstrated cysts of Trichinella spiralis, species of taenia and calcified ova of Schistosome in Liver, Kidney, large intestine & small intestine.[1] The liver is the site of a wide spectrum of disease, primary as well as secondary, which may be symptomatic or silent and incidentally diagnosed during the routine investigation or autopsy examination[2]. The major primary diseases of the liver are viral hepatitis, non-alcoholic fatty liver disease (NAFLD), alcoholic liver disease and hepatocellular carcinoma[1]. Abnormal findings in liver autopsy can be fatty change, glycogen storage disease, 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[3].

AIMS AND OBJECTIVE:

1)To analyze the spectrum of histomorphological features, commonly observed in the liver in different age groups and gender in the autopsy.

2)To study any incidental findings in liver.

3)To compare the present study findings with other studies.

MATERIAL AND METHOD:

The present study comprises of 500 liver specimens received in Autopsy Section, Pathology Department of B. J. Medical College, Civil Hospital, Ahmedabad during Jan. 2017 to June 2018. The specimens were received in autopsy section after removal of the organ during post-mortem examination. Data of post-mortem cases of all age and both gender were included in this study and liver specimens showing autolytic change were excluded. After receiving, fixation, processing, blocks & slide were prepared and staining was done.

RESULTS AND OBSERVATIONS:

Table No.1: Age And Gender Incidence

Age Group (Inyears)	Male(No./%)	Female(No./%)	No.(%)
0-10	7(1.4%)	5(1%)	12(2.4%)
11-20	14(2.8%)	5(1%)	19(3.8%)
21-30	76(15.2%)	39(7.8%)	115(23%)
31-40	94(18.8%)	18(3.6%)	112(22.4%)
41-50	87(17.4%)	22(4.4%)	109(21.8%)
51-60	82(16.4%)	9(1.8%)	91(18.2%)
61-70	26(5.2%)	4(0.8%)	30(6%)
71-80	7(1.4%)	2(0.4)	9(1.8%)
81-90	3(0.6%)	0(0%)	3(0.6%)
Total	**396(79.2%)**	**104(20.8%)**	**500(100%)**

Above data suggest maximum liver autopsies were in the age group 21-30 years (23%) followed by 31-40 years (22.4%) and Male: Female ratio in the present study was 3.8:1 showing preponderance of males.

Table No. 2: Gross Findings

Colour	Consistency	Cutsurface	No.(%)
Greyish	Firm	Smooth	294(58.8%)
Greyish	firmtohard	focalwhitearea	3(0.6%)
Greyish	Firm	sloughedoutarea	2(0.4%)
Greyish	Soft	Creamish	1(0.2%)
Yellowish	Soft	Greasy	150(30%)
yellowish green	firmtohard	Nodular	28(5.6%)
redbrown	Firm	Nutmeg	20(4%)
Brown	softtofirm	Cystic	1(0.2%)
Greenish	Firm	Smooth	1(0.2%)
			500(100%)

Most of the liver were grey color, firm in consistency and smooth cut surface (58.8 %) followed by yellow color, soft in consistency and greasy cut surface (30 %) in the present study.

Table No. 3: Histopathological Pattern

Histopathological pattern	Male (No./%)	Female (No./%)	TotalNo.(%)
Noremarkable pathology	1(0.2%)	3(0.6%)	4(0.8%)
Non-neoplastic			
Congestion	225(45%)	63(12.6%)	288(57.6%)
Fattychanges	123(24.6%)	27(5.4%)	150(30%)
Cirrhosis	26(5.2%)	2(0.4%)	28(5.6%)
Livernecrosis	14(2.8%)	5(1%)	19(3.8%)

Hepatitis	3(0.6%)	1(0.2%)	4(0.8%)
Granulomatous lesion	0	1(0.2%)	1(0.2%)
Abscessformation	2(0.4%)	0	2(0.4%)
Neoplastic			
Hemangioma	1(0.2%)	0	1(0.2%)
Metastatic carcinoma	1(0.2%)	2(0.4%)	3(0.6%)
Total	**396(79.20%)**	**104(20.8%)**	**500(100%)**

Most common histopathological pattern noted in this study was circulatory disturbances in the form of acute sinusoidal congestion and chronic venous congestion seen in 288 cases (57.6%) followed by fatty change (30%), cirrhosis (5.6%), liver necrosis (3.8%), hepatitis (0.8%), metastatic carcinoma(0.6%), abscess formation (0.4%), granulomatous lesion(0.2%) and hemangioma (0.2%), 4 cases (0.8%) show no remarkable pathology in the present study.

Table No. 4: Age And Gender Wise Incidence In Cases Of Congestion

Agegroup (Inyears)	Male (No./%)	Female (No./%)	TotalNo (%)
0-10	6(2.08%)	4(1.39%)	10(3.47%)
11-20	13(4.51%)	5(1.73%)	18(6.25%)
21-30	56(19.44%)	27(9.37%)	83(28.82%)
31-40	52(18.05%)	10(3.47%)	62(21.52%)
41-50	43(14.93%)	10(3.47%)	53(18.40%)
51-60	32(11.11%)	6(2.08%)	38(13.19%)
61-70	15(5.20%)	1(0.34%)	16(5.55%)
71-80	7(2.43%)	0	7(2.43%)
>80	1(0.34%)	0	1(0.35%)
Total	**225(78.12%)**	**63(21.87%)**	**288(100%)**

Table No. 4 shows age and gender wise incidence in cases of congestion which is most common in this study. Most common age group involved is 21-30 years of age with male predominance.

Table No. 5: Age And Gender Wise Incidence In Cases Of Fatty Change

Agegroup (Inyears)	Male (No./%)	Female (No./%)	TotalNo (%)
0-20	0	1(0.67%)	1(0.67%)
21-40	49(32.67%)	11(7.33%)	60(40%)
41-60	69(46%)	11(7.33%)	80(53.33%)
61-80	5(3.33%)	4(2.67%)	9(6%)
Total	**123(82%)**	**27(18%)**	**150(100%)**

Table No. 5 shows age and gender wise incidence of cases of fatty change which is the second most common in this study. 41-60 years age group was most common in this pattern with male predominance.

Table No. 6: Age And Gender Wise Incidence In Cases Of Cirrhosis

Age group (Inyears)	Male (No./%)	Female (No./%)	Total No (%)
21-40	8(28.57%)	0	8(28.58%)
41-60	14(50%)	2(7.14%)	16(57.14%)
61-80	2(7.14%)	0	2(7.14%)
>80	2(7.14%)	0	2(7.14%)
Total	**26(92.85%)**	**2(7.14%)**	**28(100%)**

Table No.6 shows age and sex wise incidence of cases of cirrhosis which is third most common in this study. 41-60 years age group was most common in this pattern with male predominance.

DISCUSSION:

Table No. 7: Comparison Of Age Wise Incidence With Various Studies

Age group (Inyears)	Present study	Porwal et al.[4]	Umesh BR et al.[5]
0-10	2.4%	2.05%	1.90%
11-20	3.8%	3.42%	6.70%
21-30	23%	21.91%	18.10%
31-40	22.4%	27.39%	26.70%
41-50	21.8%	22.60%	19.10%
51-60	18.2%	13.01%	15.20%
61-70	6%	5.47%	8.60%
71-80	1.8%	3.42%	3.80%
81-90	0.6%	0.68%	0%

In the present study, age varied from 0 year to 85 years and maximum cases seen in a 3rd decade while a study done by Porwal et al.[4] and Umesh BR et al.[5] show maximum cases in the 4th decade.

Table No. 8: Comparison Of Gender Wise Incidence With Various Studies.

Gender	Present study	Behera et al.[6]	Patel PR et al.[7]
Male	79.2%	82.81%	85.33%
Female	20.8%	17.18%	14.67%

In our study, there is male preponderance with 79.2 % males which is almost equal to study conducted by Behera et al.[6] and Patel PR et al.[7]

Table No. 9: Comparison Of Histopathological Patterns Of Liver.

Histologicalpattern	Present study	Porwal etal[4]	Smita etal[8]
No remarkablepathology	0.80%	6.84%	21.51%
Non-neoplastic			
Congestion	57.60%	49.31%	29.05%
Fattychange	30%	39.72%	15.52%
Cirrhosis	5.60%	3.42%	4.43%
Livernecrosis	3.80%	0.00%	0.00%
Hepatitis	0.80%	38.35%	21.29%
Granulomatouslesion	0.20%	2.05%	3.10%
Abscessformation	0.40%	0.68%	0.00%
Neoplasticlesion	**0.80%**	**0.00%**	**2.88%**

In the present study, the most common finding is congestion which is seen in 57.60% of cases, it is comparable with a study done by Powral et al[4] (49.31 %) and Smita et al.[8](29.05%).

Table No. 10: Comparison Of Age Incidence In Cases Of Fatty Change Of Liver.

Agegroup (In years)	Present study	Sheth et al.[9]	Selvi et al.[10]
0-30	15.33%	18.26%	0%
31-40	25.33%	16.52%	0%
41-50	28%	22.60%	24.13%
51-60	25.33%	25.21%	58.62%
61-70	4.67%	12.17%	17.24%
71-80	1.34%	2.60%	0%
>80	0%	2.60%	0%

In present study incidence of fatty change was higher in a 5th decade while a study conducted by Sheth et al.[9] and Selvi et al.[10] showed a higher incidence in the 6th decade.

Table No. 11: Comparison Of Age Incidence In Cases Of Cirrhosis Of Liver

Age group (In years)	Present study	Sheth et al.[9]	Selvi et al.[10]
0-30	15.33%	18.26%	0%
31-40	25.33%	16.52%	0%
41-50	28%	22.60%	24.13%
51-60	25.33%	25.21%	58.62%
61-70	4.67%	12.17%	17.24%
71-80	1.34%	2.60%	0%
>80	0%	2.60%	0%

In the present study most commonly affected age group was 51-60 years in cases of cirrhosis while 61-70 years age group was most commonly affected in a study done by Sheth et al.[9] and Selvi et al.[10]

Table No. 12: Comparison Of Incidence Of Neoplastic Lesions Of Liver.

Neoplasm	Presentstudy	Gundallietal.[11]
Primary		
Benign(hemangioma)	1(25%)	5(38.46%)
Malignant (Hepatocellular carcinoma)	0	1(7.70%)
Metastasis/Secondaries	3(75%)	7(53.84%)
Total	**4(100%)**	**13(100%)**

The above table shows that metastasis to the liver were more common than its primary tumors. In the present study, 4 cases of neoplasm were noted. Among them, metastasis was seen in 3 (75%) cases while primary neoplasms were noted in one (25%) case which was benign neoplasm and no primary malignant neoplasm was seen in this study. Gundalli et al.[11] showed metastasis in 7 (53.84%) cases while primary neoplasms were noted in six (46.16%) cases.

CONCLUSION:

Autopsy study more frequently discloses various lesions that were undiagnosed clinically and provides valuable information for quality control of health care system. Autopsy examination of the liver is very helpful to identify silent liver diseases like fatty change, cirrhosis, venous congestion and malignant tumors. The difference in frequencies of various lesions in these studies may be due to the difference in sample size, age group and patterns of study. Most of the studies are conducted on bits of liver or whole liver in forensic autopsies who are relatively young subjects and usually in better health conditions and may not reflect the actual pattern of liver diseases in the local population.

Conflicts Of Intrest: Nil

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