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Original Article

Pathology Section

Common Silent Liver Disease In and Around of Salem Population: An Autopsy Study

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ABSTRACT

Introduction: We aim to determine the prevalence of silent liver diseases and to correlate it with age, sex, life style and its other risk factors. Histopathology is an important and most useful way to find out the conditions of internal visceral organs and the unique method for diagnosis of liver diseases because the liver is the site of many diseases, of which become symptomatic while some are diagnosed only on autopsy. Histopathology study is conducted in 120 cases in VMKV. Medical College Hospital, in the department of Pathology Salem, Tamil Nadu, India.

Methods: The study was conducted over a period of two years (2009-2011) as elective and prospective study. We collected samples from 120 cases for histopathology study. Samples from the right and left lobe and one in the centre of the liver as well as other morphological findings was observed and recorded. Tissue sections were made and stained with Haematoxylin and eosin were evaluated.

Results: Of the 120 cases were studied, 12 cases were excluded due to autolysis. 108 cases have analysed for study, the cases ranging from 6 years to 80years. Among 108 cases, Males were 82 & Females were 26, with the mean age of 46+/-9.52 years. Fatty changes were found in 26.9% followed by normal 25.9%, congestion 16.7%, hepatitis 13.9%, cirrhosis & abscess 7.4% and malignancy 1.9%. Causes of death were RTA -51, poisoning-15, hanging-15, suspecious-11, myocardial infarction-5, drowning-4, burns and electrocution each 3 and 1 in railway.

Conclusion: From this study, the most common findings were fatty changes were more prone in the age of 50 – 70 years and starts with 40 years of age due to chronic consumption of alcohol in the Population of Salem district, Tamil Nadu.

Key Words: Autopsy, Liver disease, Fatty changes, Cirrhosis, Histopathology

INTRODUCTION

The importance of silent liver disease in the overall perspective of pathology and clinical medicine cannot be overemphasized. Liver is the most vulnerable and major organ in our body facing wide variety of problems like metabolic, toxic, microbial and circulatory disturbances. In some instances the disease is primary while in others the hepatic involvement is secondary to cardiac de-compensation, alcoholism or extra hepatic infections. Most of the chronic liver diseases even in advanced stages may cause no prominent clinical signs and symptoms. They either go undiagnosed or are found incidentally during general checkups, investigation for other diseases or surgery. Hence, the underlying causes of such chronic liver diseases vary in different parts of the world and are based on various factors such as age, sex, socio-economic status, food habit, life style, locality and associated infections.

So the circumstances in often consuming alcohol existing in salem and also one of the leading a liquor selling district in Tamil Nadu. In America more than 10 million people are alcoholics and alcohol causes 200,000 deaths annually [1]. Alcohol abuse generally leads to the pathological distinct liver diseases; in which the most frequent hepatic lesions are fatty change, hepatitis [2] and alcoholic cirrhosis. Person may have any one or all three can occur at the same time [3]. These diseases are presently the most common chronic liver disease problem in western and developing countries like India [4]. Short time ingestion of up to 8 gm of Alcohol generally produce mild to severe hepatic changes such as fatty liver, ingestion increase upto 160 gm or more per day for more than 20 years [5]. Cirrhosis of liver onset is between at the age of 20–80 years but peak incidence is between 40 and 50 years of age [6]. Apart from the major three liver diseases, chronic congestion, abscess and malignancy, yellow atrophy, infarcts, swelling and cyst can be seen as “silent liver disease” in the histological findings [7].

MATERIALS AND METHODS

Liver specimens were collected from 120 cases, over a period of two years from 2009 – 2011 as elective and prospective study. The histopathological examination conducted in the department of Pathology VMKV Medical College Hospital, Salem, Twelve cases were excluded due to autolysis & 108 cases were taken for study. We had collected information of age, sex, marital status, place, food habit, alcoholic usage and previous history of any disease such as liver disease etc., from the first degree of the deceased, police and accident register report during autopsy.

Wedge necropsies (6x6x6cm) from the right, left lobes and one middle lobe of the same size from deeper areas of the parenchyma were obtained in each cases. All the specimens were fixed in 10% formalin & processed, sectioned and stained with Haematoxylin and Eosin after standard procedures.

STATISTICAL ANALYSIS

Patterns of liver disease were expressed as frequencies and percentages. The linear exact test was used to compare the frequency of histological type and patterns of liver disease and charts, graphs were used in Chi-square and pie charts. *P* values smaller than 0.05

were considered statistical significant. We used SPSS, software version 16.00 for all statistical tests.

RESULT

The study conducted gross and histopathology examination on 108 cases were assessed and 12 cases were discarded due to autolysis. Causes of death were RTA 51, poisoning 15, hanging 15, suspicious death 11, Myocardial infarction 5, drowning 4, burns and electrocution each 3 and 1 in railway while causes of death did not show any correlation with silent liver diseases.

Observation were recorded from 108 liver specimen by gross examination based on the colour and its cut surface; yellow green 31, yellow brown 24, red brown 5, swollen 2, cystic lesion 18 and normal liver 28 [Table/Fig-1] and under microscopic examination were majority of the cases had Fatty changes 26.9% [Table/Fig -2], followed by Normal liver 25.9%, Congestion 16.7%, Hepatitis 13.9% [Table/Fig-3], Cirrhosis [Table/Fig-4] & Abscess of liver each 7.4% , Benign tumour [Table/Fig-5] and Malignancy 1.9% [Table/Fig-4 & 5]. Malignancy found in the age of 60 years and above.

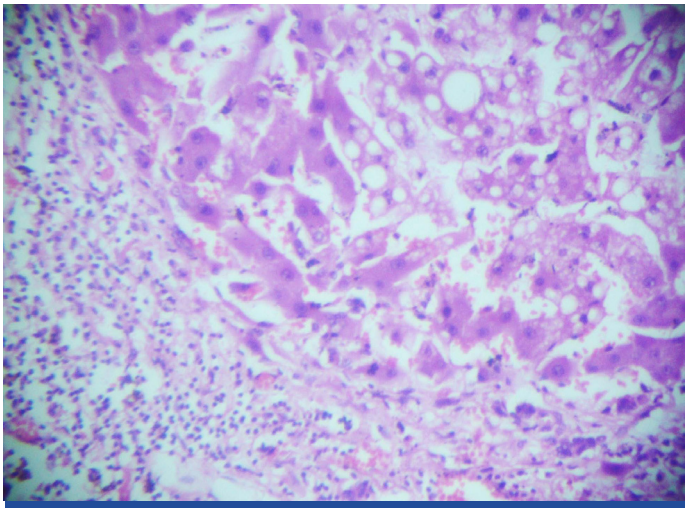
Age is playing a significant role in silent liver disease along alcoholic consumption and diet. The age ranging from 6 years to 80 years. The fatty changes were seen more characteristically at the age of 40 years and above, logistic regression analysis (percentage of error) p value is *p<0.009*.

Out of 108 cases studied 76.6% were males, females 23.4% with a mean age of 46.9+/-5.28 years. Male population is more predominant than female in this study [Table/Fig-6].

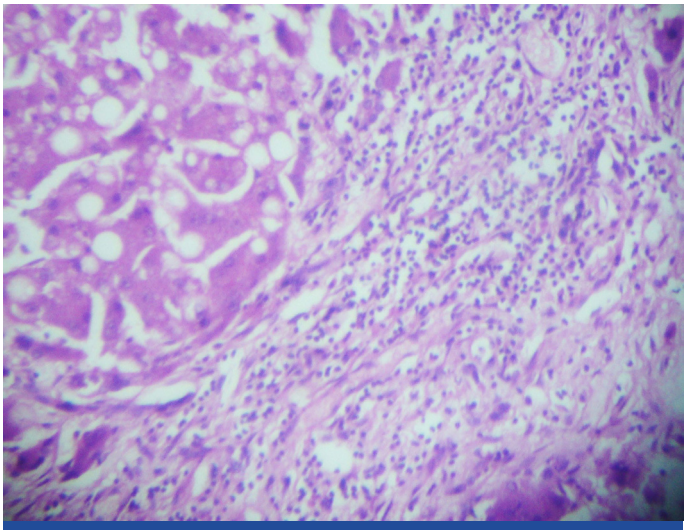
In our study observed all the findings are close similar to the previous studies, more cases were from urban 66, rural 42, [Table/Fig-7] occupation and food habit playing important role because of life style and changes in the diet, non-vegetarian 95, vegetarian 13 and married 92 & unmarried were 16. Maximum cases of fatty changes in the liver can be attributed to more alcohol consumption in and around of Salem population, Tamil Nadu. Since fatty changes in liver were common in the age of 40 years and above which may lead to serious clinical consequences it should seriously be considered as an important threat to the health of the general population. The pathology of liver

External Surface	Nos.	Cut surface	Nos.
Yellow green	31	Nodular	07
Yellow brown	24	Greasy	46
Red brown	05	Nutmeg	19
Swollen	02	Greenish	06
Cystic lesion	18	Fluid	05
Normal	28	Normal	25
Total	108	Total	108

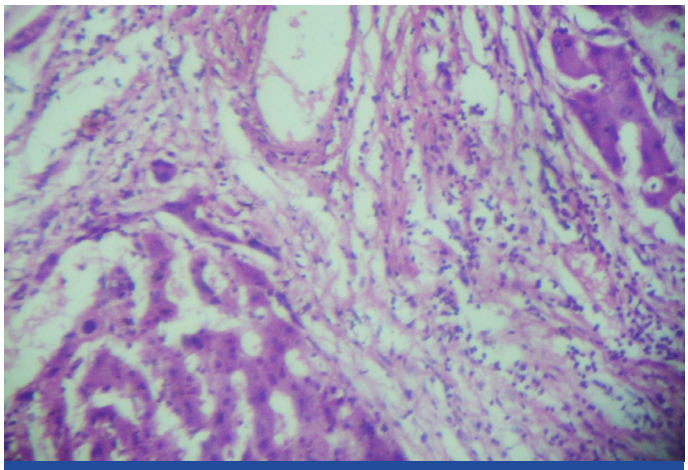
[Table/Fig-1]: Gross findings



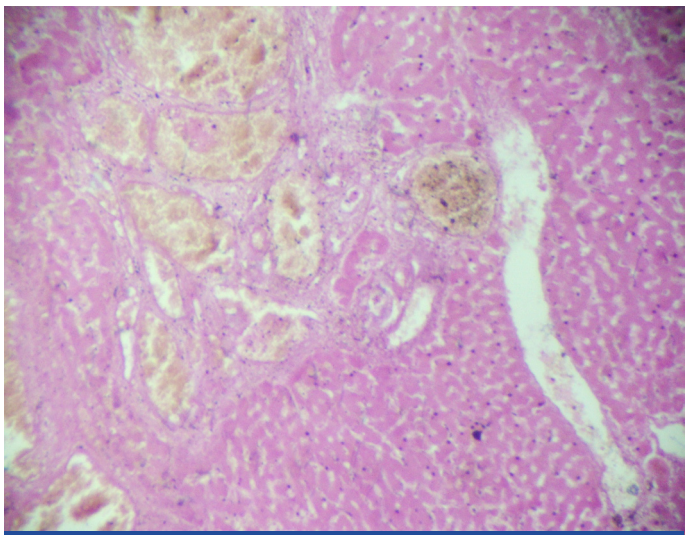
[Table/Fig-2]: Hepatocytes showing Fatty change. (H&E-20X)



[Table/Fig-3]: Hepatocytes with inflammatory cells in the septa.(H&E-20X)



[Table/Fig-4]: Nodules of hepatocytes separated by broad fibrous septa (H&E-20X)



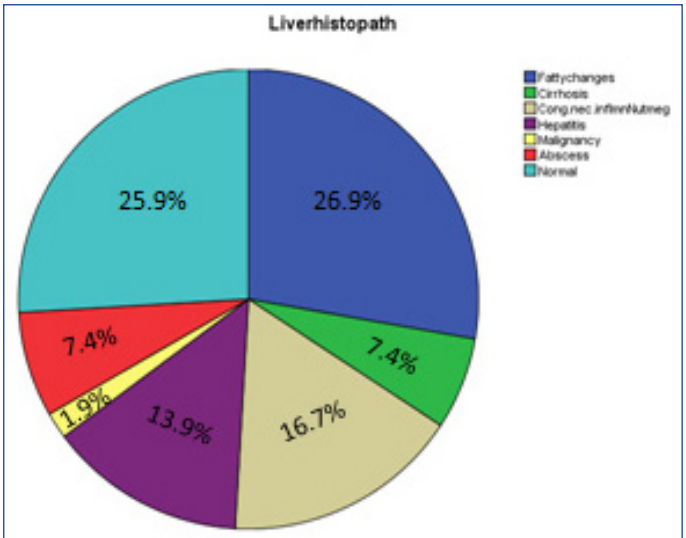
[Table/Fig-5]: Arrays of hepatocytes with adjacent Haemangioma (H&E-20X)

Age	Histopathological Findings																				
	Fatty Changes			Cirrhosis			Congestion			Hepatitis			Abscess			Malignancy			Normal		
	M	F	T	Ma	F	T	Ma	F	T	Ma	F	T	Ma	F	T	Ma	F	T	Ma	F	T
0-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	6	24
31-40	0	0	0	0	0	0	1	1	2	0	0	0	2	1	3	0	0	0	1	2	3
41-50	5	2	7	1	0	1	8	2	10	0	0	0	3	2	5	0	0	0	0	0	0
51-60	14	3	17	1	0	1	4	1	5	2	1	3	0	0	0	0	0	0	1	0	1
61-70	4	1	5	6	0	6	0	1	1	7	1	8	0	0	0	2	0	2	0	0	0
71-80	0	0	0	0	0	0	0	0	0	3	1	4	0	0	0	0	0	0	0	0	0
Total	23	6	29	8	0	8	13	5	18	12	3	15	5	3	8	2	0	2	20	8	28
	26.9%			7.4%			16.7%			13.9%			7.4%			1.9%			25.9%		

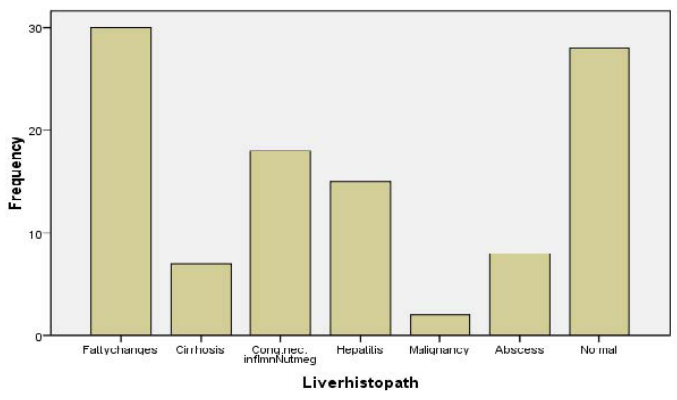
[Table/Fig-6]. Age correlated with silent liver disease
M: Male; F: Female and T: Total

Sex	Food habit		Total	Place		Total	Marital status		Total
	Veg.	Non-Veg.		Urban	Rural		Married	Unmarried	
Male	05	77	82	51	31	82	71	11	82
Female	08	18	26	15	11	26	21	05	26
Total	13 (12%)	95 (87.9%)	108 (100%)	66 (61.1%)	42 (38.8%)	108 (100%)	92 (85.1%)	16 (14.8%)	108 (100%)

[Table/Fig-7]: Distribution of various factors for Liver diseases



[Table/Fig-8]: Percentage of various liver diseases



[Table/Fig-9]: Frequency of liver diseases

disease related age group observed in the study tells us regular consumption of alcohol leads to liver disorders. From this study we can infer the following facts, fatty changes were predominant above the age of 40 years in regular alcoholics. The associated life style factors are play for causing these common pathological diseases. Further studies to assess the aetiology and natural history of these lesions are certainly warranted.

DISCUSSION

Histopathological study is a great value in improving the vision and diagnostic setup for clinical assessment. In these prospective study found that common disease of liver in the population of Salem, Tamil Nadu. In this study, incidences were higher in 4th & 6th decades of life. Of 108 cases, Males were 82 & Females were 26 cases similar to Akhilesh Pathak & Mangal H.M [8], observed age & sex wise distribution of cases shows that the incidences were higher in 3rd & 4th decades of life. Men were more prone to death by diseases 63.3% as compared to women 36.6% the reason being that as men were bread earners and women usually doing household work, which makes the men more alcohol consumption was reported in majority of the cases in male population, vulnerable to exposing risk factor on their respective occupation. Also men more indulge themselves in smoking and alcoholism etc.

Present study was observed urban 66 and rural 42 cases that rapidly increased in day-to-day life, is one of the social get together. The state government trading alcohol more than a decade since lifted the prohibition in the year of 1973. So the people of middle and lower class more frequently consuming the alcohol past 30 years, this habit had shown dramatic changes in similar to the industrialized places, so the male population of Salem consuming alcohol increased than in female in the recent years.

Regular intake of alcohol between 40-80 gm increase the liver weight and frequency of fatty change liver (Savolai 1993). One study in Iran (2006) 945 cases were assessed, forty nine cases were excluded due to autolysis. Out of 896 cases 777 (86.7%) cases were male and 119 (13.2%) female with mean age of 43.8 ± 19.7 years. Most of the cases were reported by RTA

35% as causes of deaths and microscopic examination fatty changes 31.6% normal findings 52.1% hepatitis 5%, male gender was predominant, asymptomatic fatty liver might be the most common silent liver disease among the general population in Tehran, Iran [9]. Shakoori reviewed the report of histology of 4025 liver specimens during a 5- year period, he found a 6.8% prevalence rate of chronic hepatitis [10]. There are two studies were conducted by Shiratori et al., Poovorawn et al. found hepatitis was predominant in Japan and other Asian countries [11,12]. Ratziu V et al.; Kochar N et al. and Azimi K et al. [13,14] found that cases are developed significant fibrosis, cirrhosis and hepatocellular carcinoma on follow-up and viral hepatitis is the most common cause of cirrhosis in Iran [15]. 200 fold increased in risk factor for hepatocellular carcinoma by adulthood [16] and molecular origin of hepatocellular carcinoma remain unclear [17]. Bal M.S, et al. [18] study was conducted in Patiala (Punjab) observed that out of 100 cases of liver specimens fatty liver 39%, normal 30%, cirrhosis 14%, congestion 9%, hepatitis and malignancy each 3% and chronic abscess 2%; male were predominate 83% and female 17%; fatty liver seen between 41-60 years of age.

CONCLUSION

From this study, the most common findings were fatty changes were more prone in age of 50–70 years and starts with 40 years of age due to chronic consumption of alcohol in the Population of Salem district, Tamil Nadu. Incidence of common silent liver diseases are very high in this part of state. The incidence of liver diseases are more in males as compared to females.

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