

Research Article

Incidental findings in autopsy examination of liver: a study at tertiary care hospital

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ABSTRACT

Background: Liver is the site of many diseases, many of which become symptomatic while some are diagnosed only on autopsy examination. We aimed to determine the prevalence of silent liver diseases in autopsy examination.

Methods: Liver specimens were collected from 450 cases as a part of examination of multiple viscera, over a period of one year from January 2013 to December 2013. Sections from representative area were submitted for processing. After processing tissues were sectioned and stained with H&E stain. For evaluation of liver architecture special stains were also used whenever required.

Results: Total 409 from 450 liver specimens were evaluated for autopsy examination. 233 (56.97%) cases had no remarkable pathology. Most common salient liver disease found in our study was fatty change, 146 (35.69%) cases, followed by cirrhosis of liver 10 (2.44%) cases. Maximum cases of fatty change were found in age group of 31-40 years (30.13%). Other important liver diseases found were hepatitis (0.98%), chronic venous congestion (1.22%), liver necrosis (1.22%), granulomatous lesions (0.49%) and malignant lesions (0.48%).

Conclusions: Silent diseases of the liver are not uncommon. Autopsy examination of liver is very helpful to identify silent liver diseases like fatty change, cirrhosis, venous congestion and malignant tumours.

Keywords: Liver autopsy, Fatty change, Cirrhosis of liver

INTRODUCTION

Most of the chronic liver diseases, even in advanced stages, may cause no prominent clinical signs or symptoms. They either go undiagnosed or are found incidentally during general health check-ups, investigations for other diseases, surgery, or at autopsy. The underlying causes of chronic liver diseases vary in different geographic areas and are based on various factors such as socioeconomic status, life style, diet, local or regional infections, and other endemic diseases.¹

Liver is vulnerable to a variety of metabolic, toxic, microbial and circulatory insults. Sometimes, the disease is primary while in others the hepatic involvement is

secondary to cardiac de-compensation, alcoholism or extrahepatic infections. Quite rightly liver is, called as “the custodian of milieu interior” autopsy study is useful to monitor the cause of death and to plan medical strategy.²

Abnormal findings in liver can be congenital malformation, fatty change, hepatitis, cirrhosis, biliary cirrhosis, storage diseases, acute phosphorus poisoning, hemosiderosis, syphilis, actinomycosis, infarcts, cloudy swelling, tuberculosis, acute passive hyperemia, chronic passive hyperemia, amyloidosis, abscesses, hydatid cyst and primary or secondary malignancy.³ These diseases can be seen as “silent liver disease” in the histological findings during autopsy.

METHODS

Liver specimens were collected from 450 cases as a part of examination of multiple viscera, over a period of one year from January 2013 to December 2013. The histopathological examination conducted in the department of pathology, Government Medical College, Surat. Autolysed specimens were not included in present study. 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's trichrome stains were also used whenever required.

In fatty liver degree of steatosis was graded as:

- I. When micro and macrovesicular steatosis affected 5 - 25% of the liver parenchyma;
- II. When 26 - 50% of the parenchyma was affected;
- III. When 51 - 75% was affected; and
- IV. When more than 75% of the parenchyma was involved.

Different pathological findings of all cases were analysed and expressed as frequencies and percentage.

RESULTS

During the study period, 450 cases were assessed. Forty-one cases were excluded because of moderate to severe autolysis in liver and 409 cases were enrolled in the study including 349 males and 60 females. Major pathologic findings are shown in Table 1. Table 2 shows grading of fatty change.

Table 1: Pathological diagnosis.

Sr. no	Diagnosis	Male	Female	Total
1	Fatty Change	126	20	146 (35.69%)
2	Cirrhosis	8	2	10 (2.44%)
3	Liver Necrosis	4	1	5 (1.22%)
4	Chronic venous congestion	4	1	5 (1.22%)
5	Hepatitis	4	0	4 (0.98%)
6	Granulomatous lesions	2	0	2 (0.49%)
7	Biliary cirrhosis	1	0	1 (0.24%)
8	Tuberculosis	1	0	1 (0.24%)
9	Metastatic tumour	1	0	1 (0.24%)
10	Leukemic infiltrate	1	0	1 (0.24%)
11	No remarkable pathology	197	36	233 (56.97%)
Total		349	60	409 (100%)

Table 2: Grading of fatty change.

Sr. No	Grading	No. of cases
1	I	55 (37.67%)
2	II	54 (36.98%)
3	III	19 (13.02%)
4	IV	18 (12.33%)

Table 3: Age wise incidence of fatty liver.

Sr. No.	Age group in years	No. of cases	Percentage
1	<30	21	14.83%
2	31-40	44	30.13%
3	41-50	36	24.65%
4	51-60	29	19.86%
5	>61	12	8.21%

DISCUSSION

Present study showed that fatty change is the most common silent liver disease. Alcohol consumption is major causative factor for developing fatty change. Regular intake of alcohol between 40-80 gm increases the liver weight and frequency of fatty changes in liver. Majority of cases (74.65%) had grade I & II fatty change in hepatocytes. Similar observation were found in study of Rasoul S with 82.9% cases had grade I & II Fatty change.

Fatty change was more common in age group of 50-70 years of age as reported by R. Thamil in their study but in present study age group of 31- 40 years showed higher cases of fatty change which comprised 30.13% followed by age group of 41-50 years 24.65% of total cases.⁴

Silent cirrhosis in our study was found in 2.44% of cases. Bethke and Schubert showed that in a fifty-year autopsy series on 22000 cases, 0.4 - 7.2% of cases had cirrhosis.⁵ M.S. Bal from Patiala showed 14% cases having cirrhosis which was higher than present study which indicate a lower prevalence of silent cirrhosis in present study demographic region.⁶

Venous congestion of liver is terminal end stage of the death seen in most of the liver autopsies. Copeland et al reported congestion with fatty change in 3.4% of liver autopsies of alcoholics who died suddenly and M.S. Bal reported congestion with fatty change in 9% of cases. The present study revealed congestion in 1.22% cases, slightly less as compared to Copeland's findings.^{6,7}

Hepatitis was found in 4 cases (0.98%) in present study. In study by R. Thamil reported 13.9% of cases having hepatitis, while in study of M. S. Bal hepatitis found in 3% cases.^{5,7}

Granulomas are frequently encountered in liver biopsies and their existence will capture the attention of clinicians

and pathologists.⁸ In the study by Cunningham, et al they have detected granuloma in 2 - 10% of liver biopsies in large series.⁹ Granulomas are found in virtually all patients with disseminated tuberculosis.¹⁰ In present study 3 cases of granulomatous lesions out of which one case was diagnosed as tuberculosis and two cases were diagnosed as granulomatous lesion.

Both benign and malignant or epithelial and mesenchymal neoplasms arise in liver. Of the malignant tumors, metastatic are more common than the primary cancers, rarely a mesenchymal hamartomatous lesion can arise in the liver. In present study one case of metastatic carcinoma was observed from adenocarcinoma lung and one case showed infiltration by leukemic cells.

In summary, asymptomatic fatty liver might be the most common silent liver disease among the general population of this region followed by cirrhosis of liver, hepatitis and chronic venous congestion.

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 endeavor. Autopsy examination of liver is very helpful to identify silent liver diseases like fatty change, cirrhosis, venous congestion and malignant tumours.

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