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Original Research

Histopathological analysis of Liver Lesions in 136 biopsy specimens

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***ABSTRACT*:**
Background: Liver biopsy serves an important role in the definitive diagnosis of liver diseases, determining the grade and stage of the disease and also in evaluating the effect of therapy. It is particularly useful in the diagnosis of biliary atresia. The present study was conducted to assess hepatic lesions.
Materials & Methods: 136 liver biopsies were stained with Hematoxylin and Eosin (H&E) and were examined under the microscope.
Results: Age group 0-10 years had 1, 11-20 had 12, 21-30 had 20, 31-40 had 25 and >40 years had 10 hepatic lesions. The difference was significant (P< 0.05). Histopathological diagnosis were primary Hepatic Tumour in 5, hepatic Secondaries in11, Cirrhosis in 10, Secondary Biliary Cirrhosis in 4, Viral Hepatitis in 15, Alcoholic Hepatitis in 6, Glycogen Storage Disease in 2, Fatty liver in 14 and Cystic Hydatid Disease in 1 case. The difference was significant (P< 0.05).
Conclusion: Histopathological examination of liver biopsy helps to diagnose and assess the severity of various hepatic diseases.
Key words: biopsy, Histopathological, liver

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Introduction

Erlich is credited with the first liver aspiration in 1883 and subsequently first percutaneous liver biopsy for diagnostic purposes was reported in 1923. The technique has been modified since then and proved to be a revolution in the field of hepatology. Liver is a primary organ for various metabolic activities of the body. It is exposed to various metabolic, toxic, infectious and neoplastic insults. Thus, a spectrum of various primary as well as secondary diseases can affect liver.[1] The common primary liver diseases are hepatitis, nonalcoholic fatty liver disease (NAFLD), alcoholic liver disease (ALD) and hepatocellular carcinoma (HCC). Secondary hepatic involvement can be due to alcoholism, extrahepatic infections or metastatic spread of various primary malignancies.[2]

Cysts of the hepatobiliary tree are a group of heterogeneous lesions with regard to the pathogenesis, clinical presentation, diagnostic findings, and therapeutic management.[3] Most of them are asymptomatic and incidentally detected on abdominal imaging such as ultrasonography (USG), computed tomography (CT), and magnetic resonance imaging (MRI).[4] A few of them, however, may be symptomatic, and rarely associated with serious morbidity and mortality.[5] The latter, are the larger cysts, which cause complications such as spontaneous hemorrhage, rupture into the peritoneal cavity or bile duct, infection and compression of adjacent biliary tree. Rarely, the ruptured cyst content can cause further complications, as anaphylactic shock.[6] The spectrum of the hepatobiliary cystic lesions might vary in different geographical regions, due to differences in etiological factors in different climatic conditions. The present study was conducted to assess hepatic lesions.

Materials & Methods

The present study was conducted among 136 liver biopsies obtained in the department of pathology. The clinical and radiological findings with LFT results were noted in all the cases. Formalin fixed liver biopsy tissues were processed routinely. These tissues were dehydrated with ascending grades of alcohol, cleared with xylene, and embedded in paraffin to prepare blocks. The blocks were then cut

into sections of 2-5 micrometre thickness using a microtome. These sections were stained with Haematoxylin and Eosin (H&E) and were examined under the microscope. Some special stains like Reticulin, Periodic Acid Schiff (PAS), Masson Trichrome (MT), Prussian blue (Perl's) were used in selected cases. The findings were recorded and studied. P value less than 0.05 was considered significant (P< 0.05).

Results

Table I Distribution of hepatic lesions

Age group (years)	Number	P value
0-10	2	0.01
11-20	24	
21-30	40	
31-40	50	
>40	20	

Table I shows that age group 0-10 years had 1, 11-20 had 12, 21-30 had 20, 31-40 had 25 and >40 years had 10 hepatic lesions. The difference was significant (P< 0.05).

Table II Histopathological diagnosis of lesions

Histopathological diagnosis	Number	P value
Primary Hepatic Tumour	10	0.02
Hepatic Secondaries	22	
Cirrhosis	20	
Secondary Biliary Cirrhosis	8	
Viral Hepatitis	30	
Alcoholic Hepatitis	12	
Glycogen Storage Disease	4	
Fatty liver	28	
Cystic Hydatid Disease	2	

Table II shows that histopathological diagnosis were primary Hepatic Tumour in 10, hepatic Secondaries in2 2, Cirrhosis in 20, Secondary Biliary Cirrhosis in 8, Viral Hepatitis in 30, Alcoholic Hepatitis in 12, Glycogen Storage Disease in 4, Fatty liver in 28 and Cystic Hydatid Disease in 2 case. The difference was significant (P< 0.05).

Discussion

Patients who suffer from hepatosplenomegaly and present with an abnormal liver function test or unexplained jaundice, a liver biopsy is the best and the only way to attain the correct diagnosis.

The value of liver biopsy is not merely to determine the degree of fibrosis, rather it draws a detailed map for many important histological findings such as the degree of inflammation, nature of inflammatory cells, distribution of inflammation, status of bile ducts, vasculature, presence of steatosis and deposition and infiltration of liver with different materials like iron, copper, etc.[7] Undoubtedly, this otherwise unobtainable information regarding the structural integrity of liver parenchyma, degree and type of injury and the host response, has a clear impact on the diagnosis, prognosis and response to treatment.[8] The ease and low mortality and relatively low morbidity of this procedure has made it to be widely used. Thus, liver biopsy been considered as the gold standard method for assessing liver histology.[9] The present study was conducted to assess hepatic lesions.

In present study age group 0-10 years had 1, 11-20 had 12, 21-30 had 20, 31-40 had 25 and >40 years had 10 hepatic lesions. Agrawal et al[10] conducted a prospective study which included 65 liver biopsies. The sections were examined and the histopathological findings were recorded. Out of 65 liver biopsies, 4.6% were inadequate for histopathological study. The various histopathological findings included secondary tumour deposits (40.0%), primary hepatic tumours (12.3%), hepatitis (16.9%), cirrhosis (12.3%), extrahepatic biliary atresia (6.15%), secondary biliary cirrhosis (3.0%), glycogen storage disease (1.5%), cystic hydatid disease (1.5%) and fatty liver (1.5%).

We observed that histopathological diagnosis were primary Hepatic Tumour in 10, hepatic Secondaries in2 2, Cirrhosis in 20, Secondary Biliary Cirrhosis in 8, Viral Hepatitis in 30, Alcoholic Hepatitis in 12, Glycogen Storage Disease in 4, Fatty liver in 28 and Cystic Hydatid Disease in 2 case.

Hepatic metastasis can be seen either by direct spread or due to the dual nature of blood supply of liver from portal and systemic circulation. The

common sites of primary tumours that frequently metastasizes to liver include lung, breast, gall bladder, stomach, pancreas, and large intestine. Gall et al[11] has found the incidence of cirrhosis to be 6%. The incidence was common among females. This is most probably due to increased alcohol intake among females. Majority of cases showed interface hepatitis. Various other causes included hepatitis B infection, Wilson's disease and malnutrition. Two cases with secondary biliary cirrhosis were observed.

Kulkarni, et al[12] conducted a study on 80 percutaneous liver biopsy specimens and correlated with biochemical investigations and clinical features. 59 out of 80 cases were neoplasms with 35 metastatic tumors, 22 hepatocellular carcinomas and one case each of non Hodgkin lymphoma and hemangioma. Out of 35 metastatic tumors, 28 were adenocarcinomas along with two cases each of gastrointestinal stromal tumors and squamous cell carcinoma and one case each of malignant melanoma, adenosquamous carcinoma and malignant small round cell tumor. Non neoplastic lesions included seven cases of cirrhosis and four congenital lesions consisting of three cases of biliary atresia and one case of neonatal hepatitis. Authors concluded that hepatic tumors are the most common lesions encountered on liver biopsy. Metastatic tumors especially adenocarcinomas are much more frequent than primary hepatic tumors. Biopsy of the liver is considered gold standard for histopathological characterization of congenital lesions like biliary atresia and storage disorders.

The limitation of the study is small sample size.

Conclusion

Microscopic examination of liver biopsy yields a diverse range of pathological findings. It is most important

investigation in reaching accurate diagnosis, detect cause & severity of liver diseases and in providing better treatment options.

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