

Pattern of Liver Diseases at Bolan Medical Hospital, Quetta

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ABSTRACT

The object of the present study was to observe pattern of liver diseases by means of liver biopsy and ultrasound (US) and to assess the accuracy of ultrasound in comparison with biopsy. This prospective study was carried out in Radiology/ ultrasound department of Bolan medical College Hospital Quetta over a period of three years, (January 2004 to January 2007). The major diagnostic tools were ultrasound and biopsy. Histopathological data of 206 patients of all ages including 20 to 75 years was compared with the diagnostic parameters of ultrasound. After trans- abdominal ultrasound, biopsy was taken by Truct, Menghini, Hepafix needle inserted in guidance of ultrasound. The most common disorders were found to be cirrhosis 31.6%, chronic active hepatitis 30.7%, hepatocellular carcinoma 12%, metastatic carcinoma 8%, and other less common disorders.

Key words: Liver disease, needle biopsy, ultrasound, cirrhosis, pattern.

INTRODUCTION

Liver is the largest organ of the body and essentially known as the custodian of the milieu interieur. Its pathologies are most common cause of death world wide.¹. Chronic liver disease resulting in liver cirrhosis is fairly a common condition in Pakistan.². A liver biopsy is considered to be the gold standard for diagnosis of liver diseases.³ It is extremely useful in assessing the cause of hepatomegaly, liver growths, evaluation of parenchymal and familial disorders,^{1,4} while that of radiological and other laboratory investigations remains supportive⁴. It is useful in assessing the aetiological agents including viruses drugs, poisons and genetically determined biochemical abnormalities.⁵.

Ultrasound can be used as a primary imaging modality, it is excellent in diagnosis of HCC, metastasis and cirrhosis⁶ but it can not reliably distinguish between fatty changes and fibrosis and can not detect early changes of liver surface of chronic liver disease.⁷

Aim of our study is to find out the pattern of

liver disease in the patients attended at the Radiology department of Bolan Medical Hospital Quetta by mean of biopsy and ultrasound parameters.

MATERIAL AND METHODS

This study was conducted in Radiology/ Pathology department of Bolan Medical Hospital Quetta from January 2004 to January 2007. A total number of 206 subjects having age range from 20 to 75 years irrespective of occupation and socioeconomic status were included. The patients were received from Medical, Surgical and Radiotherapy departments of the hospital. After trans abdominal ultrasound most of the patients were biopsied under ultrasound guidance, by using a Truct, Menghini, Hepafix and lumen puncture needle. We analyzed the diagnostic sensitivity and accuracy of ultrasound by comparing with histologic results obtained after liver biopsy. Tissues were immediately fixed in formal saline, and after paraffin embedding process, four micron thick serial sections were made and stained properly.

RESULTS

All the patients were first diagnosed by mean of ultrasound and then these results were compared with liver biopsy reports. Ultra sound has been proved to be 78% accurate in our study. Out of 206 patients, 161 were correctly diagnosed by ultrasound, while 17 patients, 8.2% of the total could not be properly diagnosed because the ultrasonic features were not coinciding with the liver disease. Reports of the remaining 28 patients 13.6% were incorrect.

Pattern of liver disease that were found by means of biopsy which are given in descending order of frequency. Cirrhosis 31.6% (66 patients), chronic active hepatitis 30.7% (64 patients), hepatocellular carcinoma 12% (25 patients), metastatic carcinoma 8% (17 patients), hydatid cyst 3.4% (7 patients), storage disorders 2.9% (6 patients), steatosis 2.4% (5 patients), liver abscess 2% (4 patients), chronic persistent hepatitis 1.4% (3 patients), granulomatous hepatitis 1.4% (3 patients), neonatal hepatitis 1% (2 patients), venous congestion 0.5% (1 patient), drug induced hepatitis 0.5% (1 patient), and few other least common disorders.

Table 1: Rate of Common liver disease in descending orders

Disease	No. of patients	Percentage	Mean Age (Years)
Cirrhosis	66	31.6	38
Chronic Active Hepatitis	64	30.7	48
Hepatocellular Carcinoma	25	12	45
Metastatic Carcinoma	17	8	45
Hydatid Cyst	7	3.4	40
Storage Disorders	6	2.9	6
Steatosis	5	2.4	52
Liver Abscess	4	2	32
Chronic Persistent Hepatitis	3	1.4	46
Granulomatous Hepatitis	3	1.4	36
Neonatal Hepatitis	2	1	2
Venous Congestion	1	0.5	8
Drug induced Hepatitis	1	0.5	22



Fig. 1. Fatty liver, enlarge with course echogenic texture and poor acoustic transmission.

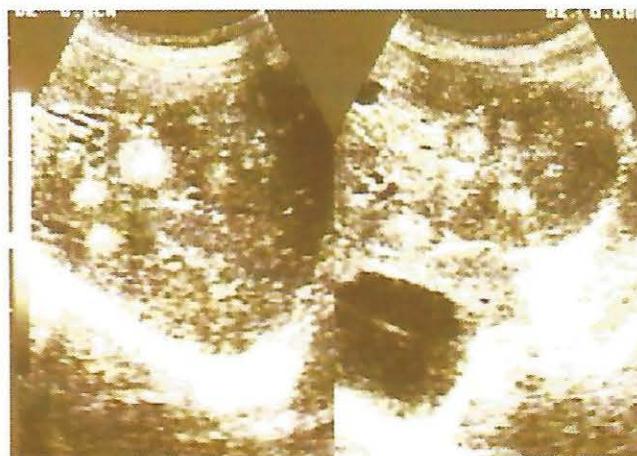


Fig. 2. Multiple echogenic & bulls eye metastatic lesions.

DISCUSSION

Cirrhosis was the most common disorder in our study and accounts for 31.6% of total cases, males were affected more commonly than the females with a ratio of 3:2 which is confirmed as same in other reports. Our study reports are significantly higher as compared with the results collected at the Shaikh Zaid Hospital Lahore⁸ Army Medical College Rawalpindi⁹ and PIMS Islamabad¹⁰. Ultrasonic features are not specific in particular type of cirrhosis, increase reflectivity of fibrous tissue and concomitant loss of definition of portal vein walls without attenuation, disturbances of echo pattern, nodularity, caudate lobe enlargement, and dilatation of portal vein are essential US features of cirrhosis.¹⁵



Fig. 3. Hydatid cyst containing several daughter cysts.

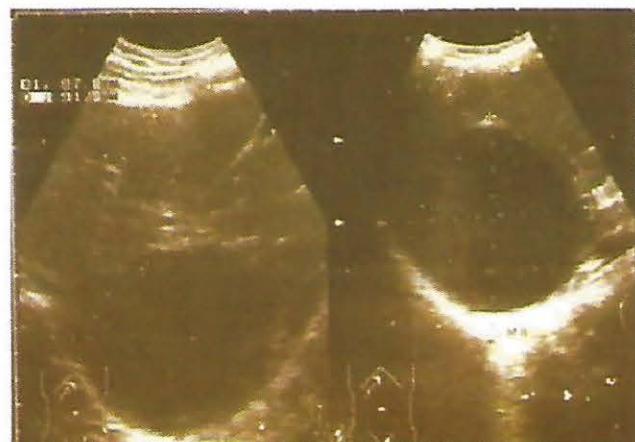


Fig. 4. Sub-phrenic liquifying abscess with good through transmission.

The second most frequent disorder in our study was chronic active hepatitis 30.7% of total patients. It indicates higher prevalence of causative viral agents responsible for cirrhosis and hepatocellular carcinoma HCC. Our study reports about chronic active hepatitis are also higher than the reports collected at Shaikh Zayed Hospital, Lahore, AMC Rawalpindi, and PIMS Islamabad. The patients with chronic active hepatitis are always at high risk of developing end stage liver disease or cirrhosis as compared to persistent hepatitis. US features are rather co insiting to that of cirrhosis.

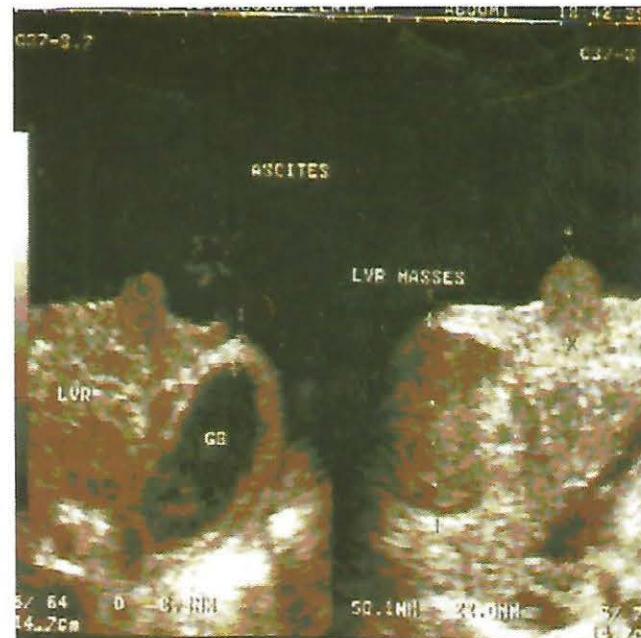


Fig. 5. Liver cirrhosis with prominent surface modularity & a large tumoral mass-HCC.



Fig. 6. Cirrhosis of liver associated with a large tumor HCC.

Hepatocellular carcinoma HCC is the most common tumor and accounts for 80% to 90% of all primary liver tumors.¹ It is prevalent world wide particularly in Africa, East Asia, Japan and China where hepatitis B virus infection is more common¹¹⁻¹²⁻¹³. This most common primary liver tumor is No 1 or No 2 cause of cancer death world wide.¹⁴ Its peak incidence is noted at 5th decade of life. Our study showed a very high incidence 12% of HCC, in

comparison of ratio at Lahore, Islamabad and AMC centers, of course a high rate of cirrhotic patients in Balochistan are at risk of developing of HCC. Ultrasound is a most important tool in screening of a liver mass. Most common US features are A large solitary mass, multiple nodular pattern and diffuse multiple small foci.

Metastatic liver disease were calculated to be common disorder 8% but less prevalent than HCC. In comparison with the results of SZH Lahore, AMC Rawalpindi, PIMS Islamabad and Agha Khan Hospital Karachi, .rate is significantly low. Exact cause could not be understand but may be geographical or racial. Ultrasound is an excellent modality in diagnosis of metastasis. Essential US features are multiple small rounded punched out echopenic/ echogenic foci noted mostly in Rt lobe of liver, some times the masses have bulls eye appearances and they are difficult to diagnose only when having echogenic texture.

Hydatid cyst was found in 3.4 % of cases with mean age of 40 years. The rate is significantly high from SZH Lahore 18) and PIMS Islamabad.¹⁰ The condition was mostly found in low socioeconomic group, indicative of its aetiology, as the cause may be cattle or poor sanitation. Typical US features are of a cystic mass with internal septa representing daughter cysts.

Storage disorders included in this list rather less common cause of liver disease in adults however it is more common in paediatric age group, up to 12 years. It was found in 2.9% of total patients with mean age 6 years. Glycogen storage disease only comprises of 55% of all cases. Our study results remain higher than that of Lahore Islamabad and Karachi centers.¹⁰ Neonatal hepatitis was comparatively less common 12%, while tuberculosis appears one of major cause of granulomatous hepatitis, comprising 42 % in our study which is again more higher rate than the other centers of Pakistan. Ratio of lipid storage disease is obviously low in this pattern.

CONCLUSION

Liver biopsy was proved to be the gold standard in diagnosis of liver diseases. Ultrasound is

cost effective, easily accessible, non invasive primary imaging modality which plays a crucial role in diagnosing the liver disease and was 78 % accurate in comparison to biopsy results. Our study reports revealed that six most common disorders, cirrhosis, CAH, HCC, metastatic carcinoma and storage disorders accounting nearly 88.6 % of total cases and their rates was found higher than that of Punjab and Sindh provinces. The cause may be geographical, socioeconomical, poor sanitation/ living status of people. Relatively high incidence of cirrhosis patients (30%) are on a risk of developing HCC. The pattern of liver disease, their diagnostic features, clinical values and incidence could not be referred as standard because our study was limited with a small sample of patients but it provides approximate values about liver diseases and better guideline for study in the future.

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