

# Sonographic Study in Diagnosis of Intrahepatic Space Occupying Lesions: in a Tertiary Care Hospital

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## ABSTRACT

**Introduction:** Intrahepatic space occupying lesions are frequently encountered in clinical practice and often pose difficult problems in diagnosis. It is a common problem seen in all age groups. Sonography can provide information regarding the nature of the lesion, particularly useful in distinguishing solid lesions from cystic ones. Aim and objective: The present study was done to study the role of sonography in the diagnosis of intrahepatic space occupying lesions.

**Material and methods:** Patients for study was taken from Department of Radiology in Patna Medical College during January 2015 to December 2015. They were having right upper quadrant pain. After clinical examination they were sent for ultrasonography.

**Result:** 40 patients had amoebic liver abscess and eighteen had malignant tumours of liver.

**Conclusion:** Sonography is considered the most cost effective and non invasive investigation of choice in diagnosing intrahepatic space occupying lesion.

**Keywords:** Sonographic Study, Intrahepatic Space Occupying Lesions

## INTRODUCTION

Intrahepatic space occupying lesions are frequently encountered in clinical practice, remains asymptomatic in early stages but are responsible for a variable degree of non-specific symptoms such as fever, malaise, nausea, anorexia, weight loss, abdominal discomfort, awareness of lump in abdomen etc.<sup>1,2</sup>

Liver is the largest organ in the abdomen and lies in the right upper quadrant of abdomen. Space occupying lesions of the liver can be classified into developmental, neoplastic, inflammatory and miscellaneous.<sup>3,4</sup> Two techniques which may have considerable application in the diagnosis of intra hepatic space occupying lesions are scintiscanning and ultrasonography. While scintiscanning only gives information regarding the presence or absence of such lesion, ultrasonography can provide information regarding the nature of the lesion also.<sup>5,6</sup> It particularly useful in distinguishing solid lesions from cystic ones.<sup>7</sup> Needle biopsies fail to detect existing liver metastases in at least 25% of cases.<sup>8</sup> More than 18 percent of liver metastasis are missed even at laparotomy<sup>9</sup> with improved imaging, antibiotic and surgical therapy, intensive care monitoring and percutaneous radiologic drainage techniques, the morbidity and mortality rates associated with hepatic abscess have been dramatically decreased.<sup>10,11</sup>

So this study was done to know the role of sonography in the diagnosis of intrahepatic space occupying lesions.

## MATERIAL AND METHODS

The present study was conducted in the Department of Radio diagnosis of Patna Medical College Hospital during January

2015 to December 2015 on 70 patients. The material for the study consisted of patients from department of medicine and surgery of this hospital with a provisional diagnosis of space occupying lesion of the liver were included in the study. The criteria for initial selection of patients was the presence of one or more of the following features i.e. fever, pain in region of the liver, malaise, weight loss, anorexia, fullness in the region of liver etc. Patients with no lump or no pain in the region of liver were excluded in our study. After clinical examination such as icterus, oedema, blood pressure, history of weight loss, presence of lump etc they were sent for Ultrasonography. Any alteration in echo pattern indicative of a space occupying lesions was noted. The results were read as positives and negatives depending on whether or not a space – occupying lesion was detected. All patients had provisional diagnosis of space occupying lesion of the liver.

## STATISTICAL ANALYSIS

Data was analyzed by using simple statistical method with the help of MS- Office software.

## RESULTS

Data was analysed by using simple statistical method with the help of MS- Office software.

The study comprised of 70 patients with a probable diagnosis of intrahepatic space occupying lesion. They were studied by Ultrasound.

40 patients had amoebic liver abscess. Eighteen had malignant tumours of the liver. (Thirteen being cases of metastatic liver disease and five of hepatoma). There are nine cases of hydatid cyst of liver while, two patients had polycystic disease of liver and one had simple cyst of liver (table 1).

The age of 70 patients ranged from 22 years to 78 years. We found that the highest incidence was found in age group 31-40 (35.71%), 51-60 (14.29%), 61-70 (10.70%) and 70 years (1.43%) (table 2). Our series of seventy patients included fifty five males and fifteen females.

## DISCUSSION

The diagnosis of intrahepatic space occupying lesions is

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Sr. No.	diagnosis	No of patients
1	Amoebic liver abscess	40
2	Metastases	13
3	Hepatoma	5
4	Hydatid cyst	9
5	Polycystic Liver	2
6	Simple cyst	1
Total		70

**Table-1:** Distribution of patients According to the diagnosis.

Age in years	No of patients	Percentage
21-30	15	21.43%
31-40	25	35.71%
41-50	12	17.14%
51-60	10	14.29%
61-70	7	10.00%
>70 Years	1	1.43%
Total	70	100%

**Table-2:** Distribution of Patients according to age.

often difficult because of the frequent non-specific results of the clinical examination and test of liver function in patients with such lesions. Hepatic ultrasonography is a technique with important application in such lesions.

35.71% cases were 31-40 age groups. The peak incidences of the cases was third and fourth decade, since the patient with amoebic liver abscess comprised a large group was considerably influenced by this group. This was confirmed by earlier reports.<sup>12,13</sup>

The male to female ratio in our series of 70 patients was 3.66:1<sup>14</sup> The predominance in adult males cannot be explained on the basis of a difference in rate of exposure to infection alone. Ochsner suggested that the sex difference may be consequent to higher alcohol consumption by males.<sup>15</sup> Gupta has suggested a possible preventable role of oestrogen against amoebic liver invasion in females.<sup>11</sup>

Ultrasonography was successful in confirming space occupying lesion. 40 patients were detected as amoebic liver abscess.<sup>11,16</sup>

Our series of 18 patients with malignant tumours of the liver 13 of these patients had metastatic liver disease. Scheible et al studied 76 patients with metastatic liver disease. 37 percent of these patients had single or multiple echo-dense foci while 90 percent of the had hypochoic lesions.<sup>17</sup> Our series included 5 patients with hepatomas. The ultrasonographic appearance were those of a combination of hypochoic and hyperechoic lesions. Other workers have also proved.<sup>18-20</sup>

Study included 9 patients with hydatid cyst of the liver. In all these patients ultrasonography successfully demonstrated the space occupying lesions. Two of our patients had solitary cyst while in seven multiple cyst were present. The cyst appeared as anechoic area with no internal echoes, features which have been described with uncomplicated hydatid cysts. Niron et al have described 65 hydatid cysts in his study<sup>21</sup> 2 cases had polycystic liver disease.<sup>22</sup>

## CONCLUSION

It is concluded that ultrasonography is useful and non-invasive technique with a high degree of sensitivity in the detection of intrahepatic space-occupying lesions.

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