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Assessment of focal hepatic lesions by using ultrasound technique

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Abstract
Focal liver lesions have been a leading cause of morbidity and mortality in the general population. Before the advent of ultrasound, radiology played a minor role in the diagnosis and management of focal liver lesions. The advent and use of diagnostic ultrasound changed the spectrum of diagnostic approach to focal liver lesions. Abdominal ultrasound today forms the primary examination mode in the evaluation of focal liver lesions.

The total 50 patients identified with the focal hepatic lesions were included in the study. The study is conducted in Anugrah Narayan Magadh Medical College and Hospital in Radiology department. The approval of ethical committee had been taken along with the consent from the patients were also taken. Total 50 patients having are group of 20-60 year were enrolled in to the study.

Ultrasound by virtue of non-invasiveness, lack of radiation hazard and by ability to demonstrate structural changes in organ is investigation of choice in liver pathology. From the present study it can be concluded that there is a significant association between USG findings and CT diagnosis. Ultrasound is non-hazardous, non-invasive, radiation free, can be quickly performed and is relatively cheaper, so it is first line of imaging modality.

Keywords: ultrasound, focal liver lesions, liver abscess, metastasis

Introduction

Focal liver lesions have been a leading cause of morbidity and mortality in the general population. Before the advent of ultrasound, radiology played a minor role in the diagnosis and management of focal liver lesions. The advent and use of diagnostic ultrasound changed the spectrum of diagnostic approach to focal liver lesions. Abdominal ultrasound today forms the primary examination mode in the evaluation of focal liver lesions. It provides the physician/ surgeon the necessary information to plan out the right therapeutic approach required in the given situation. Hence, ultrasound has become a mandatory examination in the approach to the management of focal liver lesions.

Focal liver/hepatic lesions (FLLs) are a common reason for consultation to a heap to biliary service, they often need further work up, and investigations. They are often discovered in patients with a cirrhotic liver or colorectal cancer but can be found incidentally during work up for abdominal pain and sometimes in the trauma setting. Incidental liver lesions are being found more commonly due to advancement in imaging modalities. In some reports, incidental FLLs were found in up to 33% of radiological studies. In autopsy cases, it reached more than 50%.

Unfortunately, there is no clear pathway for work up and with a wide differential diagnosis; these lesions may need multiple imaging modalities to characterize whether they are benign or malignant.

A cornerstone in evaluating these patients is history and physical examination. A differential diagnosis of metastasis vshepatoce Liver disease is any disturbance of liver function that causes illness. The liver is responsible for many critical functions within the body and should it become diseased or injured, the loss of those functions can cause significant damage to the body. Liver disease is also referred to as hepatic disease. Liver disease is a broad term that covers all the potential problems that cause the liver to fail to perform its designated functions. Usually, more than 75% or three quarters of liver tissue needs to be affected before a decrease in function occurs [1].

It is important to consider not only malignant liver lesions, but also benign solid and cystic liver lesions such as hemangioma, focal nodular hyperplasia, hepatocellular adenoma, and hepatic cysts, in the differential diagnosis. Focal lesions are circumscribed areas of injury to brain tissue following brain injury. Such lesions may be created when an object penetrates the skull and directly injures an area of the brain. A variety of lesions occur in the normal liver. This review will describe the most common benign, malignant, and infectious lesions. Illustration will be made of the magnetic resonance imaging (MRI) appearance of the most common of these. Lesions can be categorized according to whether or not they are caused by cancer. A benign lesion is non-cancerous whereas a malignant lesion is cancerous. For example, a biopsy of a skin lesion may prove it to be benign or malignant, or evolving into a malignant lesion (called a premalignant lesion).Benign lesions, as cyst, hemangioma, focal nodular hyperplasia, FNH or adenoma, can be distinguished from malignant lesions. In a non-cirrhotic liver, the most common malignant lesions are metastases which may be hypovascular or hypervascular.

Benign hepatic tumours include abroad-spectrum of pathologies ranging from regenerative nodules to true neoplastic processes. The diagnosis of solid tumours was a dilemma in recent past, but thanks to advances in imaging studies such as contrast enhanced computed tomography (CECT) and magnetic resonance imaging (MRI) as well as progress in immunohistochemistry (IHC), accurate diagnosis

can be made in a large percentage of patients without laparotomy or resection. These tumours have specific features in various imaging studies. The most common solid benign hepatic tumours include caver nous haemangioma, focal nodular hyperplasia, hepatic adenoma and nodular regenerative hyperplasia and cystic lesions like Simple liver cyst, pyogenic liver abscess, amoebic liver abscess and hydatid cyst. In the majority of cases of benign hepatic tumours, patients are asymptomatic and no treatment is indicated initially. The main indication for treatment is the presence of significant clinical symptoms or suspicion of malignancy or fear of malignant transformation.

Liver tumors or hepatic tumors are tumors or growths on or in the liver (medical terms pertaining to the liver often start in hepatic -or hepatic from the Greek word for liver, hepar). Several distinct types of tumors can develop in the liver because the liver is made up of various cell types. These growths can be benign or malignant (cancerous). They may be discovered on medical imaging (even for a different reason than the cancer itself), or may be present in patients as an abdominal mass, hepatomegaly, abdominal pain, jaundice, or some other liver dysfunction.

Focal liver lesions (FLLs) are a common reason for consultation to a hepatobiliary service, they often need further work up, and investigations. They are often discovered in patients with a cirrhotic liver or colorectal cancer but can be found incidentally during work up for abdominal pain and sometimes in the trauma setting [2].

Liver is usually associated with malignant tumours that could be primary, or metastatic deposits from primary elsewhere in the body. With increased use of ultrasonography (USG) and other imaging modalities, benign lesions of liver are being increasingly diagnosed. The other advantage is that infective lesions are being diagnosed in earlier stages and are thus amenable to non-invasive management. They may be detected on imaging studies incidentally, or during investigation of abnormal liver function tests or abdominal pain.

The aim of the present study is to evaluate the role of ultrasound in evaluation of focal hepatic lesions. Also to study the relative prevalence of different focal hepatic lesions detected by ultrasound during the study period.

Methodology

The total 50 patients identified with the focal hepatic lesions were included in the study. The study is conducted in Anugrah Narayan Magadh Medical College and Hospital in Radiology department. The approval of ethical committee had been taken along with the consent from the patients were also taken. Total 50 patients having are group of 20-60 year were enrolled in to the study. Liver was scanned in various planes. Various Ultrasonographic features of focal liver lesions were observed. The Inclusion criteria decided is cases of focal hepatic lesions detected by ultrasound during the study period. The patients with diffuse fatty infiltration, Storage disorders, Cirrhosis of liver and diffuse infiltrative malignancies, lymphoma and leukemia were excluded from the present study.

Results & discussion

The patients identified with the focal hepatic lesions were undergone the present study. The study was planned to collect the data from the 50 patients. The focal liver lesions studied by ultrasound technique.

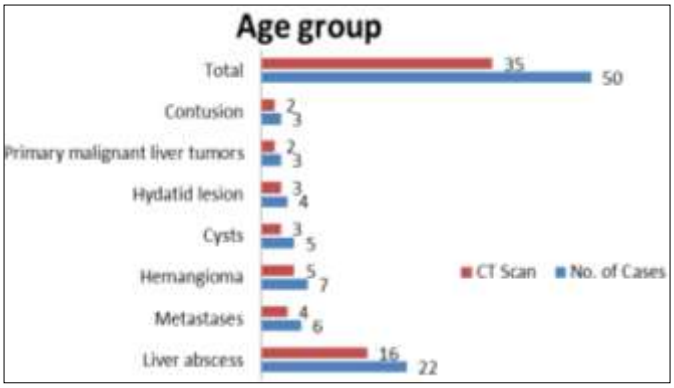

Fig 1: Distribution of Cases diagnosed by Ultrasound with CT scan

The maximum ultrasound diagnoses were confirmed by the CT scan. The age group in the enrolled study groups were ranging from20-65 years.

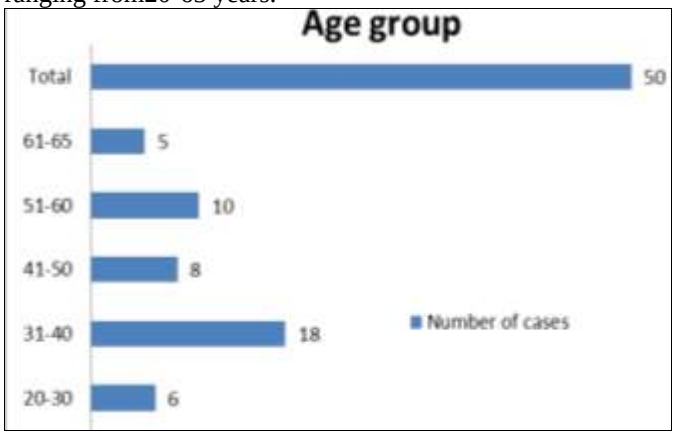

Fig 2: Age distribution of focal liver lesion

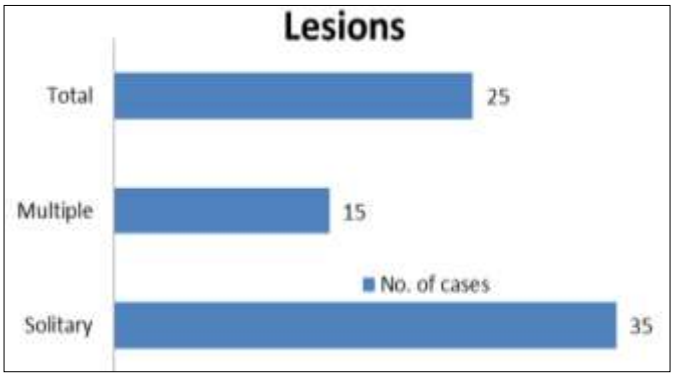

Fig 3: Distribution of cases based on number of focal lesions

There are total 15 solitary type and 10 multiple type of focal lesions were observed. According to distribution of the lob there are 14 cases of right, 4 cases of left and 7 cases of both sides were reported.

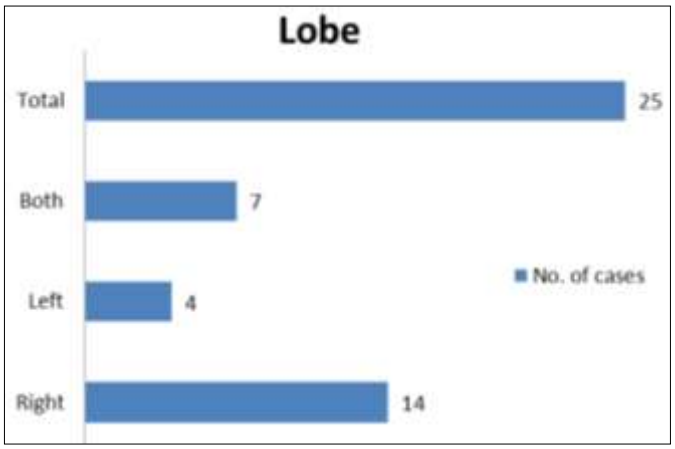

Fig 4: Distribution of cases based on lobar involvement

Ultrasonography has been an accepted method for the diagnosis of focal liver lesions because of its rapidity of diagnosis and its high sensitivity. Ultrasound features of focal liver lesions were studied and diagnosis was confirmed by fine needle aspiration cytology or CT scan. The various focal liver lesions encountered in the study were liver abscess, metastasis, primary malignant liver tumors, haemangiomas, cystic and hydatid lesions, Liver contusions and lacerations [3-5].

Ultrasound is a safe and effective method of detecting focal liver lesion. Its flexibility, easyavailabilityand lack of dependence on organ function makes it most ideal for imaging the liver and also serves as an object of defining therapeutic decision quickly. Ultrasonography when adopted a san initial imaging modality was seen as a method which reduced the cost and time to arrive at a diagnosis [6-8]. By this rapid method, even small lesions with subtle difference in reflectivity can be detected. The liver can be scanned in multiple planes enabling us to know the exact location of lesions and study their echo pattern. Apart from detecting lesion, other valuable information like ascites, vessel involvement, primary source of malignancy in abdomen and pelvis can be easily obtained.

Conclusion

Ultrasound by virtue of non-invasiveness, lack of radiation hazard and by ability to demonstrate structural changes in organ is investigation of choice in liver pathology. From the present study it can be concluded that there is a significant association between USG findings and CT diagnosis. Ultrasound is non-hazardous, non-invasive, radiation free, can be quickly performed and is relatively cheaper, so it is first line of imaging modality.

References

1. http://www.webmd.com/digestive-disorders/digestive-diseases-liver-failure.
2. www.medicinenet.com/liver_disease/article
3. Kuligowska E, Noble J. Sonographic features of hepatic abscess. Semin Ultrasound. 1983; 4:102-116.
4. Gossin KB. Intrahepatic focal liver lesions –Differential diagnosis. Am J Roentgenol. 1981; 137:763-767.
5. Edmonston HA, Peters RL. Tumors of the liver – Pathological features. Seminars in Roentgenology. 1983; 18(2):75-83.
6. Gaines PA, Sampson MA. The prevalence and characterisation of simple hepatic cysts by ultrasound examination. Br. J Radiol. 1989; 62:335-7.
7. Liang P, Cao B, Wang Y, Yu X, Yu D, Dong B. Differential diagnosis of hepatic cystic lesions with grey-scale and colour Doppler sonography. J Clin Ultrasound. 2005; 33(3):100-5.
8. TareqSinan, Mehraj Sheik, Abdulla Behbdoni, Fayaz A Chisti, Zafar Sheik, Hira PR, *et al*. Diagnosis of abdominal hydatid cyst: The role of ultrasound and ultrasound guided fine needle aspiration cytology. International Journal of Medical Principles and Practice, 2002, 11(04).