

Cryptogenic hepatocellular carcinoma (HCC) and amoebic liver abscess: use of CT scan to differentiate two mimicking presentation

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Abstract

Aim: To use computed tomography (CT) scan in differentiating mimicking condition of amoebic liver abscess and hepatocellular carcinoma (HCC) conditions

Background: The clinical and imaging technique ultrasonography (USG) presentation of amoebic liver abscess may mimic that of Hepatocellular carcinoma (HCC). Amoebic liver abscess being common diseases in Pakistan can have variable presentations which can be differentiated from hepatocellular carcinoma by using computed tomography (CT) scan, as the above mentioned two condition mimic with each other, otherwise are difficult to be distinguish from one another.

Material and Methods: This present study carried out in the department of Medicine Unit.I, Jinnah Postgraduate Medical Centre (JPMC), Karachi, carried out from 1st January 2014 till 31st January 2014

Results: A total of 79 patients with suspected liver abscess were studied, out of which 53 (67%) were found to have HCC and 26 (32.9%) were confirmed to have amoebic liver abscess while there was no case of pyogenic abscess.

Conclusion: CT Scan has emerged an important and reliable tool in differentiating between amoebic liver abscess and HCC, two common conditions which may have similar clinical and ultrasonography (USG) presentation.

Keywords: amoebic liver abscess, hepatocellular carcinoma, abdominal ultrasound, CT scan of abdomen

Introduction:

Infection of the liver by *Entamoeba histolytica* may lead to liver abscess. The parasite commonly localizes in the right lobe of the liver. Liver abscess usually presents clinically as high grade fever with chills rigors and excruciating pain in the right hypochondrium (RHC). Ultrasound studies usually show a single complex lesion in the liver.¹⁻⁴ Hepatocellular carcinoma (HCC) is considered to be the most common primary tumor of the liver.⁵ There has been a recent surge in the incidence of HCC in Pakistan owing to increased incidence hepatitis B and C viral infection.^{6,7}

The clinical and ultrasonographic presentation of the amoebic live abscesses and hepatocellular

carcinoma are often similar^{8,9} and in most cases it is difficult to distinguish between the two. Present study revealed that computed tomography (CT) scan can be used as a specialized non invasive imaging technique for reliably differentiating between hepatic abscess and HCC. Sensitivity and specificity of ultrasonography in this scenario is not well established and depends on expertise,^{10,11} however, in the present study 79 patients admitted to Medical Unit.I, Jinnah Postgraduate Medical Centre (JPMC), Karachi from 1st January 2014 till 21st December 2014. After detail history and clinical examination all the patient were examined using abdominal ultrasound and Computerized Tomogram (CT abdomen) and the results were compared.

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Material & Methods:

All the patients were above 13 years of age, patients were admitted with clinical diagnosis of amoebic liver abscess, patients with short clinical history of fever with chills, pain in right hypochondrium and jaundice and ultrasonographic evidence of a single mass in the liver admitted from 1st January 2014 till 31st December 2014 were included in the study. All patients underwent CT scan abdomen with contrast. The Patients with multiple lesions in liver and prolonged history of disease were excluded from the study.

Results:

A total of 79 patients with a clinical diagnosis of liver abscess admitted in the Medical Unit.I, JPMC, Karachi, from 1st January 2014 till 31st December 2014 were included in the study. Computerized Tomograph (CT Scan abdomen), showed that 53 (67.08%) patients were found to have hepatocellular carcinoma (HCC) while 26 have amoebic liver abscess. There was no case of pyogenic abscess. Out of 26 (69.2%) patients with amoebic abscess, 15 (57.69%) had a history of multiple hospital admissions. It was also found that 18 (69.2%) out of 26 amoebic abscess were localized to the right lobe of the liver. Incidence of both conditions was common in young age group. Mean age was $26 \pm$ years. Out of 26 patients 24(92.30%) were male and 2 (8%) were female. Out of 53 patients, with HCC 44 (83.01%) were male and 9 (16.98%) were female.

Discussion:

The study demonstrate that middle-aged patients are usual victims of liver abscess (mean age 40). The disease is predominant in males. Similar results were also described by Lee et al. and Sharma et al.¹²⁻¹⁴ Ultrasound remained a standard for diagnosis which is now reduced to screening tool.^{14,15,16} Present study revealed that classical presentation of amoebic liver abscess may be representing underlying HCC.^{17,18} Thus occult HCC mimicking of amoebic liver abscess may be now more common than actual amoebic liver abscess.^{12,19}

Radiological findings of hepatocellular carcinoma are well described in literature, and range from a well circumscribed cystic lesion with enhancing rim to a heterogeneous mass like lesion which is almost indistinguishable from amoebic liver abscess. In our study the main concern was that most patients had presented with a very short duration of clinical signs and symptoms.

Amoebic liver abscesses can also show variable imaging findings depending upon the degree of maturation and the internal contents (echoes). Early arterial enhancement, fast washout and delayed tibrone capsule enhancement as well as well demarcated hypodense areas with peripheral enhancement can be seen gas shadow may be prevail.

The study is not meant for minute description and detail of amoebic liver abscess and HCC. It is only to highlighting the fact that patient presenting as liver abscess may be by harboring HCC which is one of presentation of HCC. Here the USG is not of much help and CT scan comes in play to differentiate and settle diagnostic issue. Awareness of this fact is critical for diagnosis and management of both these condition making CT scan essential part of investigation.^{20,21}

Conclusion:

Our study conclude that CT scan abdomen is a reliable method to differnetiate between hepatocellur carcinoma and amoebic liver abscess. It is important to differentiate between HCC and liver abscess caused by *E. histolytica*. Ultrasound findings may be vague but CT scan can be used to resolve the problem definitely. Recently incidence of HCC is increasing and patients may have variable clinical presentation. In the present study all patients were admitted with the clinical diagnosis of ameibic liver abscess but the majority were determined to have HCC. CT scan abdomen is a very useful investigation and high specificity and high sensitivity for amoebic liver abscess and hepatocellular carcinoma.

Limitations:

- Our circumstances did not allow MRI studies in our study group.
- We also did not take help of blood test like alfa fetoprotein.
- HCC generally has variable presentation from hardly visible to gross metastatic HCC.
- Metastasis to liver is more common than primary HCC and former is generally multiple.
- No biopsy performed.

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Dr. M. Rasheed Durrani, MCPS, FCPS Associate Professor of Medicine at Medical unit II Jinnah Post Graduate Medical Centre, Karachi, conceive the idea and write down the initial write up and critically review the article.

Dr. Sumaira Tabassum, MBBS, FCPS (Radiology), Assistant professor of radiology department at Jinnah Post Graduate Medical Centre, Karachi, helped in collecting the data and references and helped in writing the discussion and result

Dr. Sarah Khan, MBBS Resident of Medicine at Medical unit II Jinnah Post Graduate Medical Centre, Karachi, collected the data and helped in initial writeup of the article

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