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## Liver abscess in an HIV/AIDS patient. A case report

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**ABSTRACT:** An unusual case presentation of multiple liver abscess in an HIV/AIDS patient is reported in a 42 year old Nigerian who presented with features of immunosuppression and multiple liver abscesses.

**Key Words:** Liver abscess; Immunosuppression; HIV/AIDS.

### Introduction

Liver abscess is an important gastro-intestinal disorder. Liver abscesses are caused by bacterial, parasitic or fungal pathogens<sup>1</sup>. The three major forms of liver abscess, classified by aetiology, are as follows: (i) Pyogenic abscess, which is most often polymicrobial, accounts for 80% of hepatic abscess in the United States (ii) Amoebic abscess due to *Entamoeba histolytica* accounts for 10% of cases (iii) Fungal abscess, most often due to *Candida* species, accounts for less than 10% of cases. Bacteria abscess of the liver is rare. In the USA, the incidence of liver abscess has remained unchanged by both hospital and autopsy data. The frequency in hospitalized patients ranged from 8-16 cases per 100,000 persons per year<sup>2</sup>. Pyogenic abscesses account for 75% of liver abscess in developed countries<sup>1</sup>. Elsewhere, amoebic abscess are more common and worldwide, amoebae are the commonest cause<sup>1</sup>. HIV sero-positive patients show relative immunosuppression and are more susceptible to infections, including liver abscess<sup>3</sup>.

**Pathophysiology:** The liver receives blood from both the systemic and portal circulations. Increased susceptibility to infections would be expected given the increased exposure to bacteria. However, Kupffer cells lining the hepatic sinusoids clear bacteria so efficiently that infection rarely occurs. Multiple processes have been associated with the development of hepatic abscesses. Appendicitis was traditionally the major cause of liver abscess. Biliary tract disease is now the most common source of pyogenic liver abscess<sup>4</sup>. Infections in organs in the portal bed can result in a localized septic thrombophlebitis, which can lead to liver abscess. Abscesses can also form from fistula formation between local intra-abdominal infections. Microabscess formation can also be due to hematogenous dissemination of organisms in association with systemic bacteraemia, such as endocarditis and pyelonephritis. Cryptogenic causes account for a significant proportion of cases (15%)<sup>1</sup>.

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Penetrating and non-penetrating hepatic trauma may also inoculate organisms directly into the liver parenchyma, resulting in pyogenic liver abscess. Pyogenic liver abscess has been reported as a secondary infection of amoebic abscess, hydatid cystic cavities, and metastatic and primary liver tumours. It can also be a complication of liver transplantation, hepatic artery embolization, ingestion of foreign bodies. Trauma and secondarily infected liver pathology account for a small percentage of liver abscess cases.

The right hepatic lobe is affected more often than the left by a factor of 2:1. Bilateral involvement is seen in 5% of cases. There is no sexual predilection. Males have a poorer prognosis from hepatic abscess than females. Prior to the antibiotic era, persons in the fourth and fifth decades of life were most commonly affected. The demographic has now shifted toward the sixth and seventh decades of life. When hepatic abscesses are seen in children and adolescents, underlying immune deficiency or trauma frequently exist<sup>5</sup>.

The most frequent symptoms of liver abscess include the following: fever (either continuous or spiking), chills, right upper quadrant pain, anorexia, malaise, cough or hiccoughs, referred pain to the right shoulder. Other features are weight loss, anaemia of chronic disease, and fever of unknown origin (FUO) in indolent cases<sup>6</sup>. Multiple abscesses usually result in more acute presentations, with symptoms and signs of systemic toxicity. Imaging studies are the most reliable methods of diagnosing liver abscesses<sup>5</sup>.

Complications that may arise include sepsis, peritonitis, empyema thoracis or intra-pleural rupture of abscess, pericarditis and pleural effusion, endophthalmitis when an abscess is associated with *Klebsiella pneumoniae* bacteraemia<sup>7</sup>. Drainage, either percutaneous or surgical, and aspirate culture sensitive antibiotics remain the mainstay of treatment of liver abscesses<sup>1,6</sup>. If a liver abscess is left untreated the prognosis is uniformly fatal. With timely administration of antibiotics and drainage procedures, mortality currently occurs in 5-30% of cases.<sup>1,5,7</sup>

## **CASE REPORT**

A 42 year old male Nigerian welder presented at the Accident and Emergency (A&E) unit of the University of Ilorin Teaching Hospital (UIITH), Ilorin on 31<sup>st</sup> of May 2005, with a two week history of abdominal pain, fever, diarrhoea and weight loss. There was a significant history of alcohol consumption, positive history of multiple sexual partners, and blood transfusion on two different occasions. Physical examination showed a chronically ill, emaciated young man with finger clubbing, candida paronychia and florid oral thrush. There was also a tender hepatomegaly, and a wide spread septic skin lesions which had healed.

He was investigated with haematological, serum biochemical and radiological studies. He was found to be sero-positive for both HIV I and II. Abdominal ultrasound (USS) scan showed an enlarged liver with multiple intra-hepatic deposits of varying size about 70x60 mm in diameter. One of the abscess cavities was drained percutaneously with ultrasound guidance. About 6ml of pus was obtained. The patient responded to a two week course of antibiotics (ie intravenous Ciprofloxacin 200mg 12hourly for 2weeks and Metronidazole 500mg 8hourly for 2weeks). He was later worked up and commenced on highly active antiretroviral therapy (HAART)

## **Results**

ALT	23 iu /L (0-15)	Protein 76g/L (60-80)
AST	27 iu / L (0-20)	Albumin 33g/ L (35-50)
ALKPO <sub>4</sub>	47 iu /L (21-91)	Total and conjugated Bilirubin < 20 (1-20)
CD <sub>4</sub> cell count was 189cells/ml		

Fine needle aspiration cytology (FNAC) done showed blood stained purulent material, numerous clusters of benign hepatocytes, kupfer cells, polymorphs and degenerated cells. No malignant cell was seen. A diagnosis of inflammatory smear was made.

The liver aspirate culture and sensitivity showed no growth after 48 hrs of incubation. Stool microscopy showed numerous red blood cells but no isolates on culture.

A full blood count showed a packed cell volume of 26%, white blood cell count of  $7.6 \times 10^9/L$  (neutrophil of 77%; lymphocyte of 9%; monocyte, eosinophil and basophil of 14%), platelet count of  $373 \times 10^9/L$ , erythrocyte sedimentation rate (ESR) was 60mm/hr.

Serum electrolytes and urea, and urinalysis were within normal limits.

A repeat abdominal USS scan revealed a hepatomegaly with nodular surface and multiple mixed echogenic thickened-walled foci of varying sizes with areas of irregular hypoechoic zones in both lobes in keeping with abscesses with an average size of about 60x65mm. The gallbladder was not visualized postprandial but the biliary tracts were not dilated. The spleen was slightly enlarged. No other abnormalities were found. See Fig 1.



Fig 1. Ultrasound scan of the liver with multiple abscesses

## Discussion

Immunosuppression due to HIV/AIDS has enhanced susceptibility to the development of liver abscesses<sup>3</sup>. Adekanle *et al* reported a similar case but with a single large abscess cavity in an HIV seropositive patient from which 4.1L of pus was drained in Ile-ife, Nigeria<sup>8</sup>. Capote RM *et al* in Spain reported a case of liver abscess of positive amoebic aetiology in a background of HIV/AIDS<sup>9</sup>.

In a retrospective case review of 23 patients who were diagnosed as HIV seropositive with liver abscess in Bangkok, Thailand<sup>3</sup> over a period of 10 years, a high rate of amoebic liver abscess was reported and rates of positive bacterial culture of 17.4% from blood and 47.8% from pus was demonstrated.

An extensive review of the literature shows that the association of liver abscess and HIV/AIDS is not very common. There are also very few reported cases locally. This is the first documented case of a multiple liver abscess in a patient with HIV/AIDS in Ilorin, Nigeria. We recommend that patients with liver abscesses particularly when multiple should be screened for immuno-suppression especially HIV/AIDS.

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