ISOLATED LIVER ABSCESSES IN MELIOIDOSIS

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Abstract

Melioidosis is a suppurative chronic infection caused by a gram negative bacterium, *Burkholderia pseudomallei*. We report two patients who presented with isolated liver abscesses caused by this pathogen. Both patients presented with high-grade fever and abdominal pain. On examination they were toxic and had tender hepatomegaly. Investigations showed leucocytosis and a shift to the left. Early diagnosis of melioidosis was made by culture and growth of *Burkholderia pseudomallei* from aspirated pus from the abscesses and the patients were treated with ceftazidime and co-trimoxazole. Despite institution of antibiotics both the patients succumbed to their illness. Melioidosis is an emerging infection in the Indian subcontinent and can cause isolated liver abscesses.

Key words: Liver abscess, *Burkholderia pseudomallei*, melioidosis

Liver abscess is a very commonly encountered problem in clinical practice in India. Most of the patients with pyogenic liver abscess respond to standard antibiotic therapy and aspiration. This report highlights the specific problem of nonresponse to antibiotic therapy and stresses the need to be aware of *Burkholderia pseudomallei* as a potential cause of liver abscess in India.

Case Reports

**Case 1**

A 47-year-old diabetic businessman from Orissa, presented with a six-week history of mild upper abdominal discomfort and high-grade fever. A diagnosis of liver abscess was made in another hospital and he was started on antibiotics. After two weeks of antibiotics he continued to remain febrile hence he was referred to our hospital. At admission the patient was toxic with high-grade fever (101-103°F), tachypnoeic and icteric. He had a 3 cm palpable, tender hepatomegaly. Spleen tip was palpable; there was no free fluid in the abdomen. Lymph nodes were not palpable. His total WBC counts was 14000 cumm with a shift to the left. Alkaline phosphatase was 263U/L (normal-125U/L), total bilirubin 3.3 mg% and albumin of 2.2 gm%. Ultrasound showed two hypoechoic lesions in right lobe, segment 7 (10 x 8.8 x 9 cm) and segment 5 (2.4 x 2.8 x 3.2 cm). There was no intrahepatic biliary dilatation and no calculi were noted in the gall bladder or common bile duct. About 40 mL of pus was aspirated from the lesion in seventh segment and 15 mL was aspirated form the lesion in fifth segment. The pus grew gram negative bacteria, which was subsequently identified as *Burkholderia pseudomallei*. A diagnosis of melioidosis was thus confirmed and he was started on full dose ceftazidime (2 gm every six hourly). There was an initial downward trend of fever and leucocytosis after starting ceftazidime. However, blood cultures after a week on antibiotics grew the same organism. Co-trimoxazole was added on orally. Fever continued and he went into septicemic shock. He was shifted to the Medical Intensive Care Unit, intubated and initiated on inotropes and ventilatory support. He succumbed to his illness.

**Case 2**

A 45-year-old diabetic from West Bengal presented with a four-week history of fever and abdominal pain. He had been evaluated elsewhere and found to have a poorly liquefied liver abscess. He underwent ultrasonography (USG) guided aspiration of the suspected abscess. On cultures the pus grew gram negative bacteria, which was further identified as *Pseudomonas* and found to be sensitive to cefotaxime. Since fever persisted on antibiotics he was shifted to our hospital. Clinically he looked toxic, febrile (102°F) and tachypnoeic. There was no lymphadenopathy or stigmata of liver cell failure. He had a palpable, tender, hepatomegaly of 4 cm. Spleen was not palpable and there was no free fluid in the abdomen. Blood counts were 12000 cumm, with a shift to the...
left, alkaline phosphatase was 458 IU/L and albumin was 3.6 gm%. On USG examination he was found to have a small (2.3 cms) hypoechoic lesion in sixth segment of liver, there was no intra hepatic biliary dilatation and no calculi were noted in the gall bladder or common bile duct. He underwent USG guided aspiration and FNAC of the lesion. He was continued on Cefotaxime as the organism grown in his previous aspiration was sensitive to this antibiotic. Blood cultures done on admission and fine needle aspirate grew *Burkholderia pseudomallei*. He was also started on full dose intravenous ceftazidime and co-trimoxazole orally. Fever continued in spite of being on appropriate full dose of antibiotics. He went into septicaemic shock and expired despite all efforts.

**Discussion**

Melioidosis presents with a febrile illness, ranging from septicaemia to localized abscess formation.\(^5,6\) The lung is the most commonly affected organ. Abscesses in the liver and spleen are also seen. In liver abscesses due to *Entamoeba histolytica* and pyogenic bacteria, splenic involvement is very rare. Splenic involvement should therefore alert one to the possibility of melioidosis. In Thailand, 95% of splenic abscesses are due to *Burkholderia pseudomallei*.\(^6\) Both these reported patients did not have any evidence of splenic involvement. Diabetes is a known predisposing factor for melioidosis and was present in both these patients.\(^3\)

The antibiotic of choice for melioidosis is ceftazidime.\(^7\) It has been found to be more effective than other third generation cepaholsporins.\(^8\) A randomized trial found reduction in mortality on using a combination of ceftazidime and co-trimoxazole.\(^9\) The median time of resolution of fever in septicaemic patients is nine days. In patients with abscesses, the resolution can be more than a month, necessitating an initial parenteral treatment followed by oral therapy for 20 weeks.\(^6\)

Despite adequate antibiotic therapy this condition is associated with high mortality rates. The overall mortality reported from Thailand is as high as 50%.\(^6\) This case reports highlights melioidosis as an unusual cause of isolated liver abscesses and stresses the need for early diagnosis and appropriate treatment.

**References**


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