

Splenic abscess due to chronic melioidosis in a patient previously misdiagnosed as tuberculosis

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Abstract

Melioidosis is endemic in Southeast Asia and Northern Australia. Sporadic cases have been reported from many parts of the world where it has an epidemic potential with high-rate fatality cases. In non-endemic areas, melioidosis may be misdiagnosed with common diseases and this may prove fatal. Sporadic cases of melioidosis are mistaken for tuberculosis in India. We report a case of splenic abscess due to chronic melioidosis who was earlier misdiagnosed as tuberculosis and underwent anti-tuberculosis therapy. Following treatment of melioidosis his symptoms subsided. This case is reported because of the rarity of the disease and to highlight the importance of looking for melioidosis in patients with splenic abscess even in non-endemic areas.

Keywords Splenic abscess, melioidosis, *Burkholderia pseudomallei*

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Introduction

Burkholderia pseudomallei is endemic in Southeast Asia and North Australia. Sporadic case reports from other areas suggest that there may be hitherto unrecognized foci of infection in many parts of the world [1]. In non-endemic areas it has the risk of developing into an epidemic with high-rate fatality cases [2]. Melioidosis can have variable clinical presentations like pneumonia, arthritis, encephalomyelitis and multiple visceral abscesses. This can lead to misdiagnosis in non-endemic areas which may prove fatal. In India, sporadic cases of melioidosis are mistaken for tuberculosis (TB), which is endemic in India [3]. We report a case of melioidosis presenting with lung fibrosis, small joint arthritis and splenic abscess, misdiagnosed as TB.

Case report

A 47-year-old Indian male, presented with high-grade fever and left-sided pleuritic chest pain of 3-week duration.

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Conflict of Interest: None

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He complained of anorexia and significant weight loss of 6 kg in the last 1 month. There were no other respiratory symptoms, jaundice or bowel symptoms. The patient was diagnosed with diabetes and was on insulin therapy for the past 5 years. Two years ago, the patient was evaluated for hemoptysis, diagnosed as sputum-negative pulmonary TB on the basis of X-ray finding suggestive of right upper lobe fibrosis. He was treated with Isoniazid (H), Rifampicin (R), and Pyrazinamide (Z) for 2 months and with H, R and Z for 4 months. He was treated for small joint arthritis for 3 months prior to presentation. There was no history of recent exposure to pulmonary TB. There was no history of malignancies in the family. He is a reformed smoker and a chronic alcoholic. No history of recent travel to North Australia or Southeast Asia. There is no history of exposure to soil. There was no history of sexual promiscuity.

On examination his vitals were stable and he had a body mass index of 17.8 kg/m². Abdominal examination revealed tenderness in the left hypochondrium and moderate hepatosplenomegaly. Per rectal examination did not reveal bleeding or deposits. On chest examination, there were fine crepitations and diminished air entry in the right upper chest. Examination of other systems was within normal limits.

His hemogram showed polymorphonuclear leukocytosis and an erythrocyte sedimentation rate of 70 mm/h. He had a fasting blood sugar value of 236 mg/dL and a postprandial value of 300 mg/dL with a urine sugar of 2%. His renal function and electrolytes were normal. His liver function tests and prothrombin time were within normal limits (WNL). His amylase and lipase levels were WNL. His chest X-ray showed right upper zone fibrosis. His upper and lower gastrointestinal endoscopies were normal. Ultrasonography of the abdomen showed a collection of heterogeneous echogenicity near the

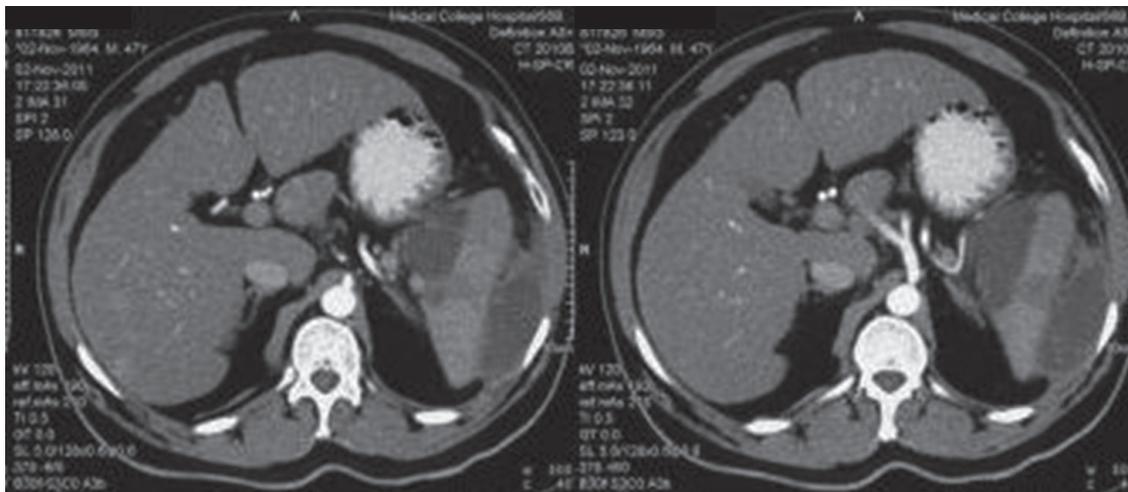


Figure 1 Splenic abscess with peri-splenic extension

inferior pole of spleen suggestive of a perisplenic abscess. Contrast-enhanced CT scan of the abdomen revealed a splenic abscess with a breach in the capsule and extension of abscess into the perisplenic area (Fig. 1). His viral serology was negative for hepatitis B, C and human immunodeficiency virus.

The possibilities considered in this middle-aged gentleman presenting with fever, weight loss and arthritis with evidence of right upper lobe fibrosis, hepatosplenomegaly and perisplenic abscess were TB, brucellosis, melioidosis, lymphoma, salmonellosis and connective tissue disorders. His sputum was negative for acid-fast bacillus. Infectious screen was negative for enteric fever, malaria and brucella serology. He had positive rheumatoid factor and anti-cyclic citrullinated protein was negative. Anti-nuclear antibodies were absent and tumor markers were WNL. Trepine biopsy of the bone marrow was normal. The aspirate from the abscess revealed catalase- and oxidase-positive, gram-negative bacillus with bipolar staining and violet colonies with central umbonation in Ashdown's selective agar (Fig. 2), diagnostic of *Burkholderia pseudomallei*. Polymerase chain reaction for TB was negative in the aspirate. Blood, sputum and urine cultures were sterile.

The patient was diagnosed as melioidosis and treated with 2 weeks of parenteral ceftazidime (2 g t.i.d.) followed by oral co-trimoxazole (160/800 mg t.i.d.) for 12 weeks upon which he became symptom-free. His fever and arthritis subsided and follow-up ultrasound showed resolution of abscess. Chest X-ray showed improvement in the right upper lobe lesion. The response to the therapy confirmed our diagnosis of melioidosis.

Discussion

Melioidosis is considered as chronic when the duration of symptoms is more than 2 months. It is rare and is seen

only in 10% of patients with melioidosis usually presenting with chronic pneumonia or skin lesions [4]. This closely mimics TB and was commonly seen among the veterans of the Vietnamese war [5]. It usually presents in patients with immunosuppression with uncontrolled diabetes being the most common cause as in our patient. Visceral abscess, most commonly splenic abscess, occurs in many patients with melioidosis. Incidence varies among various countries. An abdominal ultrasound-based study in an endemic area showed splenic lesions in 74% and liver lesions in 46% of patients [6]. Melioidosis can present with isolated splenic abscess in less than one fourth of the cases in endemic areas. However, even in non-endemic areas, the presence of splenic abscess with poor treatment response in diabetic patients should raise the suspicion of melioidosis [7].

Musculoskeletal manifestations are rare in melioidosis with the most common manifestation being septic arthritis, followed by osteomyelitis, pyomyositis, and soft tissue abscesses [8]. However, in our case, the patient had features suggestive



Figure 2 Central umbonation of colonies in Ashdown's selective agar

of small joint arthritis which is extremely rare. Rheumatoid factor is found to be falsely positive in patients with melioidosis [9]. The disappearance of arthritis following antibiotic therapy further supports melioidosis as the etiology.

The organism is variably sensitive to antibiotics. Hence the therapy requires either ceftazidime (40 mg/kg t.i.d.) and co-trimoxazole (10/50 mg/kg) b.i.d. for 2-4 weeks, or meropenem (25 mg/kg t.i.d. for ≥ 2 weeks) followed by co-trimoxazole for 12-20 weeks [10]. This case is reported because of the rarity of the disease and to highlight the importance of looking for melioidosis in patients with splenic abscess even in non-endemic areas.

In conclusion, melioidosis is one of the rare causes of splenic abscess. Poor treatment response in a diabetic patient with splenic abscess should raise the suspicion of melioidosis, even in non-endemic areas.

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