Case Report

Melioidosis: The great mimicker of diseases: A case report

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ABSTRACT

Melioidosis, caused by *Burkholderia pseudomallei*, is endemic in parts of South India and can be difficult to diagnose due to its varied clinical presentations. Lack of awareness and persistent fever despite treatment may further delay diagnosis. We report the case of a 47-year-old man with diabetes mellitus and a history of farming who presented with intermittent fever, multiple joint pains, and sepsis. During the course of illness, he developed a soft-tissue abscess. Melioidosis was diagnosed based on the isolation of *B. pseudomallei* from blood and pus cultures. The patient was successfully treated with intravenous antibiotics during the intensive phase, followed by oral antibiotics during the eradication phase. Because treatment is prolonged, patient education and adherence are essential for successful management and prevention of relapse.

Key words: *Burkholderia pseudomallei*, Diabetes mellitus, Melioidosis, Sepsis

Melioidosis is caused by *Burkholderia pseudomallei* [1]. It is more common during the rainy season, as the bacterium is found in soil and water. Infection commonly occurs through percutaneous inoculation or through ingestion or aspiration of contaminated water [2]. In India, cases have been reported predominantly from southern and coastal regions and the northeastern states [3-5]. Major risk factors include diabetes mellitus, alcohol use, chronic lung, liver, or kidney disease, malignancy, and immunosuppressive therapy [6].

CASE REPORT

A 47-year-old man, a farmer by occupation, with a 5-year history of diabetes mellitus on medication presented with fever for 2 days associated with myalgia. On clinical examination and laboratory investigation, he was initially diagnosed with dengue fever with thrombocytopenia and was treated accordingly. His symptoms improved, platelet count recovered, and he was discharged.

Three days after discharge, on the 8th day of illness, he presented to the emergency department with fatigue, intermittent fever, jaundice, and hypotension. He was stabilized in the emergency department, and investigations were performed (Table 1). He was diagnosed with sepsis with septic shock and was started on intravenous antibiotics while awaiting blood culture results.

Four days later, on the 12th day of illness, the blood culture showed no growth; however, fever persisted and antibiotics were continued. On the 16th day of illness, he developed severe pain over the right ankle joint. Computed tomography of the ankle demonstrated severe osteoarthritic changes without an effusion. On the 18th day of illness, a small abscess developed over the right ankle (Fig. 1). Under aseptic precautions, incision and drainage were performed, and pus was sent for culture along with a blood culture.

Both pus and blood cultures grew *B. pseudomallei* (Fig. 2). The patient was subsequently started on intravenous ceftazidime 2 g every 6 h along with oral cotrimoxazole (trimethoprim/sulfamethoxazole 320/1600 mg every 12 h) in a graded dosage regimen. This treatment was continued for 1 month as the intensive phase according to standard guidelines [7].

On the 25th day of illness, the patient developed pain in the anal region. Local ultrasonography suggested a perianal abscess, which was drained and sent for culture. The culture also grew *B. pseudomallei*, further supporting the diagnosis of melioidosis. His fever episodes gradually decreased, and he became afebrile on the 30th day of illness. Tenderness over the ankle joint also improved, and his overall clinical condition improved. He was continued on cotrimoxazole double-strength tablets twice daily for 3 months as the eradication phase [7].

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Table 1: Clinical and laboratory findings during the course of illness

Day of illness	Investigations/findings
2	Hb 12 g/dL; total leukocyte count 5,200 cells/mm^3; platelet count 1.3 lakh/mm^3; dengue rapid antigen card test positive.
8	Hb 11.4 g/dL; total leukocyte count 19,000 cells/mm^3; platelet count 2 lakh/mm^3; total bilirubin 5 mg/dL; AST 76 U/L; ALT 80 U/L; serum creatinine 1.8 mg/dL. Fever profile (dengue, malaria, rickettsia, leptospirosis, typhoid, and tuberculosis) negative. Ultrasonography of the abdomen and pelvis and chest radiography were normal. Blood culture showed no growth.
16–18	Hb 12 g/dL; total leukocyte count 17,000 cells/mm^3; platelet count 2.2 lakh/mm^3; serum creatinine 1.0 mg/dL; liver function tests normal. CT of the right ankle showed severe osteoarthritic changes without effusion. Blood and pus cultures subsequently grew *B. pseudomallei.*
25	Local ultrasonography of the anal region showed a perianal abscess. Pus culture from the abscess grew *B. pseudomallei.*
30	Hb 12 g/dL; total leukocyte count 9,000 cells/mm^3; platelet count 2.3 lakh/mm^3; liver and renal function tests normal.

Hb: Hemoglobin, TC: Total leukocyte count, Plt: Platelet count, USG: Ultrasonography, *B. pseudomallei: Burkholderia pseudomallei*, c/s: Culture and sensitivity, CT: Computed tomography, TB: Total bilirubin, S creatinine: Serum creatinine, AST: Aspartate aminotransferase, ALT: Alanine aminotransferase, RFT: Renal function tests, LFT: Liver function tests, TB: Tuberculosis

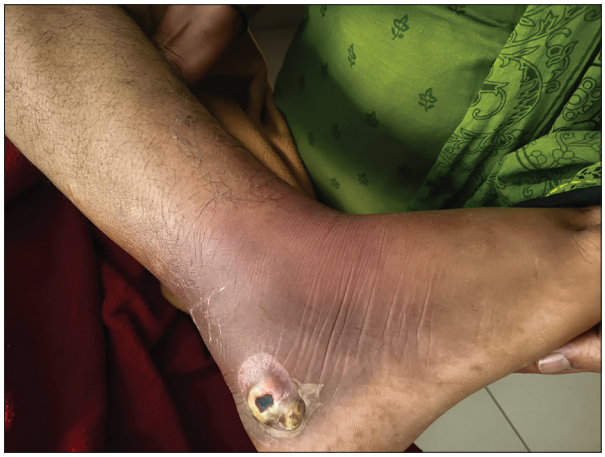

Figure 1: Small abscess over the right ankle

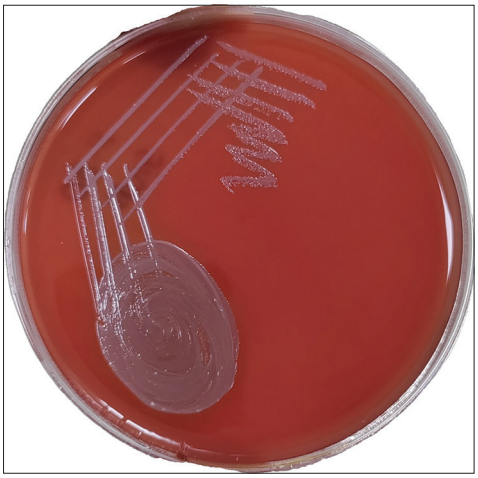

Figure 2: Small, grayish-white, non-lactose-fermenting colonies of *Burkholderia pseudomallei*

DISCUSSION

Melioidosis is caused by *B. pseudomallei* [1]. It has a wide range of clinical presentations, including bacteremia without an identifiable focus, sepsis, pneumonia, brain abscess, soft-tissue abscess, septic arthritis, and osteomyelitis. This diverse clinical spectrum has led to its description as the "great mimicker of diseases" and may contribute to misdiagnosis [7]. More than 50% of patients may have bacteremia at presentation, approximately 20% may develop septic shock, and pneumonia is a common manifestation. Other reported manifestations include abscesses of the spleen, prostate, liver, or kidneys; bone and joint involvement; and dermatological and neurological manifestations [3].

Due to this diverse clinical spectrum, melioidosis may be misdiagnosed, resulting in inappropriate or incomplete treatment. Diagnosis is primarily established by isolation of the organism from an appropriate clinical specimen, such as blood, pus, or sputum [8]. Once diagnosed, treatment consists of an intensive phase with intravenous antibiotics followed by an eradication phase with oral antibiotics [9]. Patient awareness of the disease and its prolonged treatment course is important because adherence to therapy and regular follow-up are essential. Non-adherence may increase the risk of relapse [10].

Treatment requires a prolonged course, consisting of an intensive phase with intravenous ceftazidime or meropenem for several weeks, or until clinical and microbiological response is achieved, followed by an eradication phase with oral cotrimoxazole [7]. Patient counseling and education are particularly important because treatment is prolonged and adherence is essential to reduce the risk of relapse.

In the present case, the patient initially presented with fever and was diagnosed with dengue fever. He subsequently developed sepsis with septic shock, severe ankle pain, an ankle abscess, and a perianal abscess. Isolation of *B. pseudomallei* from blood and pus cultures established the diagnosis of melioidosis. The patient's symptoms resolved following appropriate antimicrobial therapy and source control. This case highlights the importance of considering melioidosis in patients with risk factors such as diabetes and occupational exposure to soil, particularly when there is persistent or recurrent fever and multiple infective foci.

CONCLUSION

Melioidosis can present with diverse clinical manifestations and may mimic other infectious diseases. A high index of suspicion is required in patients with risk factors such as diabetes and occupational exposure to soil, particularly when fever persists or

multiple abscesses or musculoskeletal manifestations develop. Early microbiological diagnosis, appropriate antimicrobial therapy, source control, patient education, and adherence to the prolonged treatment regimen are essential for successful management.

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