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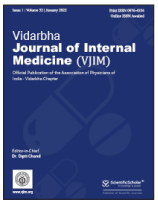

Case Report

Septicemic Melioidosis: In a Immunocompetent Host: A Case Report

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ABSTRACT

Melioidosis is endemic and underreported in nearly 45 countries worldwide. South Asian region contributes 44% of total global burden of melioidosis. It mainly affects people of poor socioeconomic strata. About 32.9% mortality and 7.0% relapses have been reported. Up to 45% of people are diabetics and only 2% have no identifiable risk factors. Here, we report a case of melioidosis with severe septic shock in a immunocompetent host.

Keywords: Melioidosis, Septicemic, *Burkholderia Pseudomallei*, Type 1 respiratory failure, Thrombocytopenia

INTRODUCTION

Melioidosis is an opportunistic infection with a varied spectrum of clinical presentations and severity. It is caused by a Gram-negative soil saprophyte *Burkholderia pseudomallei*, mainly in monsoon. It is clinically presented as pneumonia, septic arthritis or septic shock. High index of clinical suspicion is required to identify the organism on culture and Gram stain, since it can easily be confused with other Gram-negative rods such as pseudomonas and *Escherichia coli*.[1] This is a case of melioidosis in a healthy host presented with severe sepsis with septic shock.

CASE REPORT

A 28-year-male student from rural area with no history of diabetes mellitus, hypertension, bronchial asthma, tuberculosis, arthritis, smoking and alcohol or sexual contact came with complaints of high-grade fever with chills and joint swelling with pain (predominantly in knee, ankle, elbow and wrist joints) since 25–30 days and recent onset breathlessness since 8–10 days, also developed abscess on extensor aspect of the right thigh which was aspirated at a primary centre and showed *E. coli* on pus culture. Gradually, he developed moderate to severe pleural effusion which was tapped and Gram-negative bacteria were seen on Gram stain. Hence, the patient was treated for Gram-negative septicaemia with reactive arthritis. However, the patient condition continued to deteriorate further with shock and type-I respiratory failure. Hence, the patient was shifted to Alexis Hospital for further management.

On examination, his pulse was 120/min and feeble, blood pressure was 90/60 mmHg, respiratory rate 40/min and oxygen saturation 88% on room air. Knee, ankle and wrist joints are swollen and tender with redness. Air entry absent in bilateral lower lobes on auscultation with generalized distension of abdomen on examination. Differential diagnosis of connective tissue disorder versus septic arthritis and septicaemia with pleural effusion was considered.

Investigations showed total leucocyte count – 17600, haemoglobin – 6.6, platelets – 59000, procalcitonin – 25, total bilirubin – 2.9, albumin – 2.5, ESR – 74 and C-reactive protein – 269. CT thorax with abdomen was suggestive of multiple splenic and liver microabscesses. HIV was negative. Blood culture grew *B. pseudomallei* [Figure 1]. Antinuclear antibody was also negative. The patient was started on Injection Meropenem 2 Gram TDS and Injection Cotrimoxazole BD and supportive management. Despite medications, the patient continued to have thrombocytopenia. Bone marrow examination showed hypercellular marrow with adequate megakaryocytes and foci of dysmegakaryopoiesis. The patient was started on steroids. Gradually, he showed signs of clinical recovery and was discharged in stable condition with oral Cotrimoxazole for 3 months after 14 days of Injectable antibiotics.

DISCUSSION

Melioidosis is also known as 'Remarkable imitator' 'Whitmore's disease' or 'Pseudoglanders'. It is one of the infectious diseases which are springing up mostly in western coastal region and central India.[1] *B. pseudomallei* is the causative organism of the disease found most commonly in soil and water with predominant evidence during monsoon in agricultural

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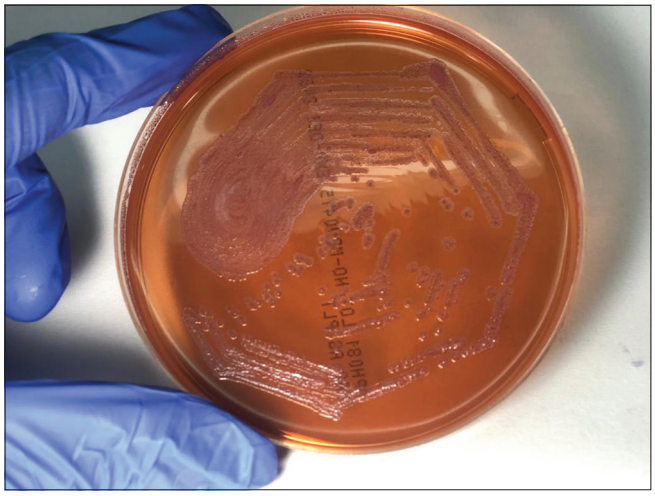

Figure 1: Growth of *Burkholderia pseudomallei* on McConkey's Agar.

populations.[2] It is a level-3 pathogen with laboratory contaminants and can easily grow in hospital settings.[3]

It is acquired through direct contact or cuts or abrasions on skin, inhalation, ingestion or inoculation. Diabetic population is the most frequently involved group along with other immunosuppressive conditions such as renal disease, alcoholism, cirrhosis, chronic lung disease, cystic fibrosis, haematological disorders, splenectomy, malnutrition or neutropenia. Melioidosis is rarely (2%) seen in immunocompetent individuals as is seen in our case. It can present with symptoms ranging from febrile illness (from 6 days to 2 months) to severe sepsis with septic shock and can form multiple abscesses in spleen, liver, kidneys, lungs, skeletal muscles and rarely brain. Septic arthritis, osteomyelitis and effusion can also be the presentation.[4]

Clinicians need to be highly suspicious to diagnose melioidosis. Blood culture or body fluids with isolation of Gram-negative bacilli with characteristic biochemical features is the confirmatory method of diagnosis. Gram stain usually shows Gram-negative bacilli with bipolar staining, called as Safety Pin appearance. It can easily be confused with other organisms like pseudomonas or *E. coli*. They are relatively slow lactose fermenters and produce grey lytic colonies in McConkey's Agar (also called late lactose fermenters – after 48 h) [Figure 1]. Timely communication between the clinical and microbiological teams could potentially improve the diagnostic yield of *B. pseudomallei*.[1-4]

Earlier cotrimoxazole (trimethoprim – 8 mg/kg/day and sulfamethoxazole – 40 mg/kg/day) used to be the drug of choice. However, recently newer antibiotics such as meropenem (1 g 8 hourly), imipenem and ceftazidime (2-g 8 hourly) are combined with cotrimoxazole for first 2 weeks as intensive therapy followed by oral cotrimoxazole, along with doxycycline for 20 weeks. Drug of choice in pregnant females where cotrimoxazole is contraindicated is amoxicillin-clavulanic acid. More than 80% of patients also require symptomatic management for effusion and abscesses.[1-4]

The prolonged fever or fever of unknown origin is always a diagnostic dilemma for a physician or intensivist. Melioidosis is a disease of soil saprophyte *B. pseudomallei*, a rare differential diagnosis should always be kept in mind in case of prolonged fever. This case highlights the diagnostic approach and treatment in case of melioidosis.

CONCLUSION

Amongst the commonest under-diagnosed diseases, Melioidosis sits on top due to high infectivity, especially in patients with coomorbidities like diabetes mellitus, HIV and immunosuppressed status, minimum diagnostic availabilities, lack of awareness and low suspicion. This makes the patient vulnerable to severe sepsis, particularly in peripheral parts of the country. Appropriately and quick diagnosis and antibiotics can reduce the progression of disease to fulminant sepsis. The need of the hour is to have proper diagnostic tests, adequate research and increased awareness among physicians in depth of melioidosis.

Declaration of patient consent

Patient's consent not required as patients identity is not disclosed or compromised.

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Conflicts of interest

There are no conflicts of interest.

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