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Melioidosis – A Hidden Killer In An Endemic Area

Dr. Sivabalan, Dr. Dhanaraj, Dr. Vignesh Kumar, Dr. Anil Kumar, Dr. Sheela Devi

Department Of General Surgery, Pondicherry Institute Of Medical Sciences, Pondicherry, India
Department Of Microbiology, Pondicherry Institute Of Medical Sciences, Pondicherry, India

Abstract
Melioidosis, caused by Burkholderia pseudomallei, is an emerging but under-recognized infection in tropical and subtropical regions. It has diverse clinical manifestations and can mimic other infectious diseases, often leading to diagnostic delays and high mortality. We present the case of a 40-year-old male without comorbidities who developed multiple soft tissue abscesses involving the limbs and scrotum. The diagnosis was confirmed by culturing B. pseudomallei from wound swabs and aspirates. The patient was managed with incision and drainage, wound debridement, and appropriate antimicrobial therapy, followed by successful skin grafting. This case emphasizes the importance of early clinical suspicion, microbiological confirmation, and prompt treatment of melioidosis in endemic areas.

Keywords: *Melioidosis, Burkholderia pseudomallei, Whitmore's disease, Multiple Abscess*

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I. Introduction

Melioidosis is a pyogenic or granulomatous infection caused by *Burkholderia pseudomallei*, a motile Gram-negative bacillus found in soil and surface water. First described by Whitmore and Krishnaswami in 1912 in Burma, it is also known as Whitmore's disease.[1] The infection is endemic in Southeast Asia, India, and Northern Australia, with sporadic cases reported worldwide due to travel or importation.[2,3] Rodents and other animals serve as reservoirs, and transmission to humans occurs via inoculation through skin abrasions, inhalation, or ingestion.[4]

Clinically, melioidosis is known as the "great mimicker" because of its variable manifestations, ranging from localized cutaneous abscesses to pneumonia, septic arthritis, osteomyelitis, and fulminant septicemia.[5] Risk factors include diabetes mellitus, chronic kidney disease, alcoholism, and immune suppression, though healthy individuals are not exempt.[6]

Epidemiologically, melioidosis represents a significant but under-recognized health burden in India. Modeling studies estimate 20,000–52,500 new cases annually, with nearly 32,000 deaths per year.[7] Seroprevalence studies from southern India indicate widespread exposure, with one reporting 29% seropositivity among adults.[8] Mortality varies between 16–50% in general cases and can reach 70–90% in septicemic disease.[9]

Here, we report a case of melioidosis in a previously healthy adult male presenting with multiple abscesses, managed successfully with surgical and antimicrobial therapy

II. Case Report

A 40-year-old male presented with sudden swelling in his right leg, progressively worsening over one week and associated with severe pain. He also reported fever with chills and rigors. Over the following days, he developed multiple abscesses in the right ankle, right elbow, left elbow, and scrotal region. There was no history of prior surgeries, diabetes, or other comorbidities. Local examination revealed a 3 × 3 cm swelling over the anterior aspect of the right leg, 5 cm below the knee joint. The lesion was warm, tender, and fluctuant, with no regional lymphadenopathy.

knee X-rays showed no signs of septic arthritis. Chest X-ray and abdominal ultrasound revealed no other abscesses. KOH, Leptospira serology, scrub typhus serology, and AFB staining were all negative. Cultures from wound swabs, aspirated fluid, and tissue samples grew Burkholderia pseudomallei. *B. pseudomallei* is a Gram-negative, motile bacillus capable of surviving in aerobic and anaerobic environments.[2] Microscopic examination of pus and tissue samples demonstrated the classical "safety-pin" appearance (Figure 1). On Ashdown's selective agar, colonies appeared wrinkled and purple (Figure 2), confirming the diagnosis

The patient underwent incision and drainage followed by wound debridement under spinal anaesthesia. After granulation tissue developed, split-thickness skin grafting was performed (Figure 3), showing successful uptake of approximately 99%.

III. Discussion

Melioidosis, although uncommon, is frequently fatal if not diagnosed early. It is often misdiagnosed as tuberculosis, pyogenic bacterial infections, or septic arthritis, leading to delayed treatment and poor outcomes.[5,6] In endemic regions, clinical suspicion is essential, particularly in patients presenting with recurrent or multiple abscesses.

Culture remains the gold standard for diagnosis, with Ashdown's medium facilitating recognition.[3] Treatment involves two phases: an intensive phase with intravenous ceftazidime or meropenem for 10–14 days, followed by an eradication phase with oral trimethoprim-sulfamethoxazole for 3–6 months to prevent relapse.[9] In addition to antimicrobial therapy, surgical drainage and wound management play an important role in localized disease, as in this case.

Our patient did not have classical risk factors such as diabetes or immunosuppression, emphasizing that melioidosis can also affect immunocompetent individuals. Early diagnosis, culture confirmation, and prompt initiation of appropriate therapy allowed favorable outcomes and prevented complications.

IV. Conclusion

Melioidosis is an under-recognized but potentially fatal infection in endemic regions. This case highlights the importance of early diagnosis, surgical management, and antimicrobial therapy in improving patient outcomes. Clinicians should maintain a high index of suspicion, even in patients without comorbidities, to reduce morbidity and mortality associated with this hidden killer.

Declarations

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Conflict of interest: None declared

Ethical approval: Not required

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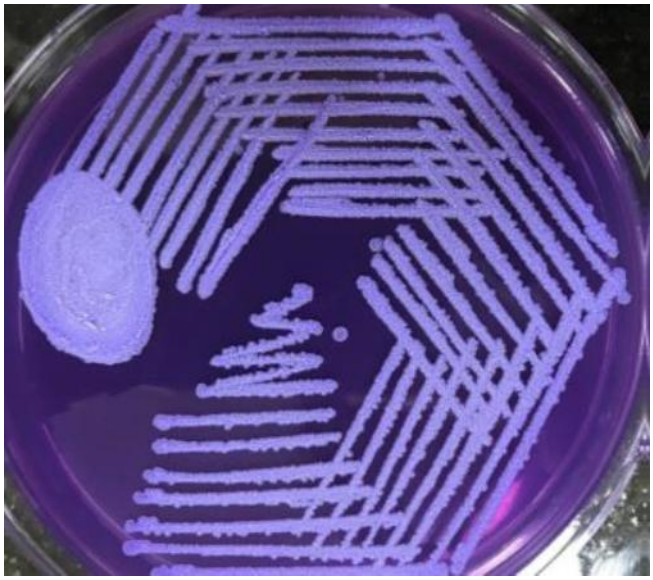

Figure 1- Colonies appeared wrinkled and purple on Ashdown's selective agar

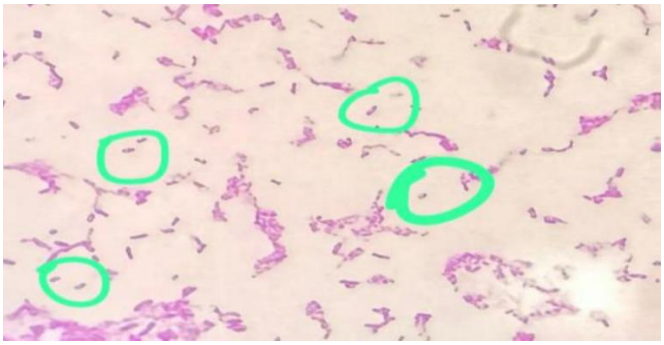

Figure 2- Gram negative bacilli with safety-pin appearance on gram stain

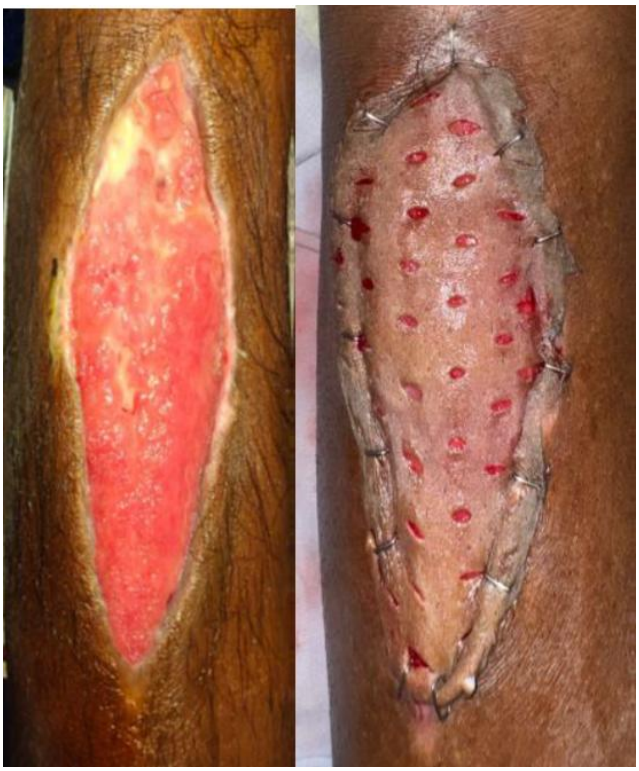

Figure 3- skin grafting with 99% uptake