

Case report**Systemic melioidosis with prostatic abscess**FS Makeen¹, MN Pitagampola¹, S Chandrasiri¹, S Mendis¹, AM Abeygunasekera¹*Sri Lankan Journal of Infectious Diseases 2023 Vol.13 (2):E50:1-4*DOI: <https://doi.org/10.4038/sljid.v13i2.8583>**Abstract**

Melioidosis is an infectious disease caused by the Gram-negative bacteria *Burkholderia pseudomallei*. The organism is a soil saprophyte and humans acquire infection via percutaneous inoculation through a breach in the skin. Inhalation of the organism is also a probable route of transmission as evident by a high incidence during the rainy season. Outbreaks of melioidosis have also occurred due to ingestion of water contaminated with *B. pseudomallei*. Sri Lanka is an endemic country for melioidosis.

A 60-year-old male patient with hypertension presented with fever, chills, dysuria, and urinary retention. His blood culture signaled positive, and the isolate was identified as *Burkholderia pseudomallei*. He was managed for melioidosis complicated with prostatic abscess. He was successfully treated with intravenous meropenem in the intensive phase and discharged with oral co-trimoxazole during the eradication phase.

Though the patient was initially treated for a prostatitis and urosepsis, correct identification through blood culture and appropriate investigations aided us to identify the prostatic abscess and treat the *Burkholderia pseudomallei* bacteraemia accordingly.

Keywords: Melioidosis, Prostatic abscess, *Burkholderia pseudomallei*, Meropenem, Co-trimoxazole

Introduction

Melioidosis is a bacterial infection caused by *Burkholderia pseudomallei*.^{1,2} It is endemic in tropical climates as in Southeast Asia and Northern Australia.¹ *B. pseudomallei* is a soil saprophyte.³ This organism is found in soil and surface water, particularly in rice paddy fields and monsoon drains.⁴ Melioidosis is an infection of rural, agricultural communities. There is an association with occupational exposure to soil and water such as farming and rice cultivation. Isolation rates are high during the rainy monsoon season. Humans acquire infection via

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percutaneous inoculation of the organism through skin defects. Rarely, infection can also occur via inhalation and ingestion of the organism. *B. pseudomallei* is classified as Hazard Group 3.⁴

B. pseudomallei was first described by Whitmore and Krishnaswami in 1912 as the cause of an unknown septicaemic disease in morphine addicts in Rangoon, Burma. Sri Lanka described its first patient in 1927.³ Melioidosis was later seen in soldiers during World War II, and in American and French troops returning from Vietnam, giving it the colloquial name 'Vietnamese time bomb'. The number of countries that report melioidosis has increased since then, and Northern Australia, Northeastern Thailand, Singapore, and Malaysia are considered 'hyperendemic' regions.³

Infection has been reported in all ages including neonates and the elderly. Males are more affected than females. The majority of people who develop clinical disease are often immune compromised. While diabetes mellitus is the most important predisposing factor, chronic renal disease, chronic liver disease, malignancies, and chronic alcoholism are also considered as contributory factors.¹

The disease can have many clinical presentations, the most commonly involved organ being the lung, and symptoms can manifest as acute lobar/bronchopneumonia, pleural effusion, and lung abscesses. Melioidosis can also present as bacteraemia, osteomyelitis, septic arthritis, and abscesses of other organ systems.

Though the prostate gland is rarely involved, we report a patient with prostatic abscess complicated with *B. pseudomallei* bacteraemia which is an uncommon presentation.

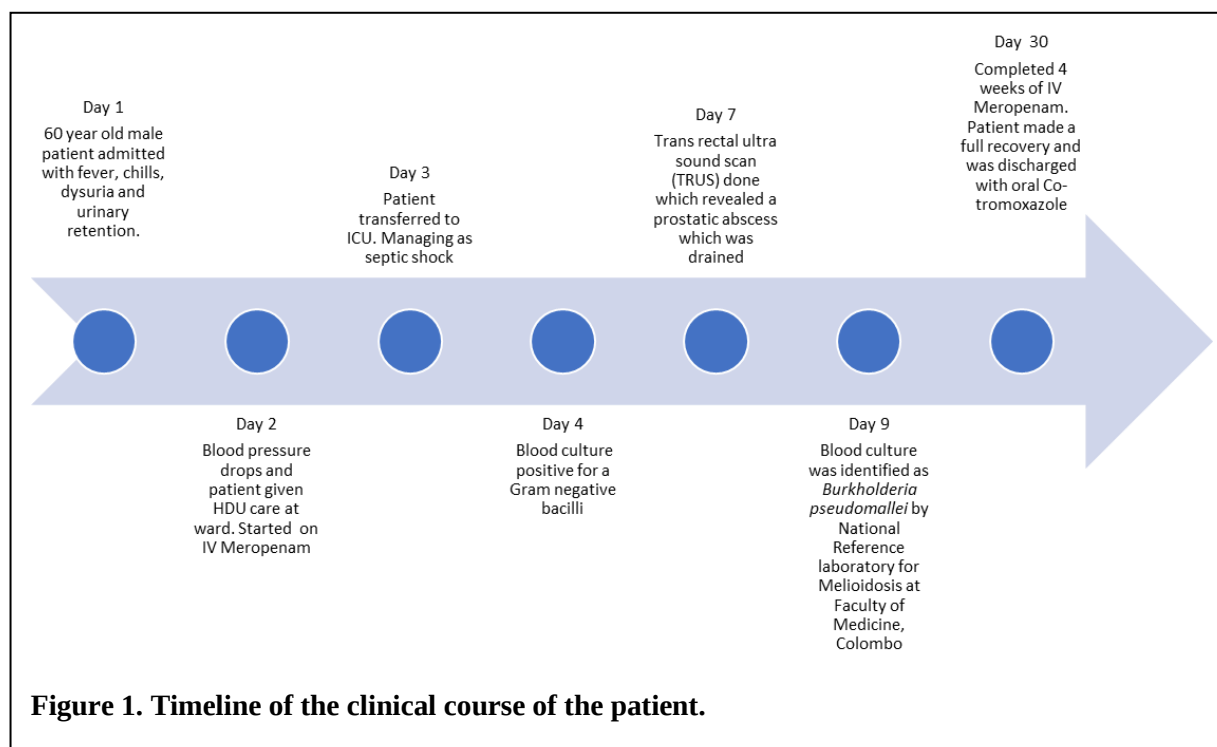
Case report

A 60-year-old male patient with hypertension presented with fever, chills, dysuria, and urinary retention to Colombo South Tertiary Care Hospital, Sri Lanka. He had been managed for prostatitis, acute urinary retention, and acute kidney injury at a local hospital two weeks prior to this admission.

On examination he had fever spikes of 100 °F, his blood pressure was 90/60mmHg, pulse rate 110bpm and oxygen saturation at room air 95%. He was managed for possible urosepsis with septic shock and started on IV meropenem. The urine full report showed 10-12 pus cells/HPF and 15-20 red cells/HPF, and his urine culture grew *Candida* species with a colony count of >10⁵ CFU/HPF. The patient was transferred to the intensive care unit for optimal care. While in the ICU, his blood culture signaled positive for a non-fermenter with a positive oxidase test. ABST of the isolate was as follows: sensitive to meropenem and resistant to amikacin, netilmicin and gentamicin. The isolate was sent to the Medical Research Institute Sri Lanka for further identification. As the fever spikes were not settling, ultrasound scan-KUB and trans rectal ultrasound scan (TRUS) was done which showed a prostate abscess which was subsequently drained.

The blood culture isolate was subsequently identified as *Burkholderia pseudomallei* by the National Reference Laboratory for Melioidosis at the Faculty of Medicine, Colombo. The patient was managed for melioidosis with IV meropenem 1g 8 hourly for 4 weeks and oral co-trimoxazole 1920mg 12 hourly was added during the 3rd week of the intensive phase. The patient clinically improved, and the eradication phase was continued with oral co-trimoxazole 1920mg bd and folic acid. He was discharged and reviewed at the clinic fortnightly.

The timeline of this patient's clinical course is given in Figure 1.



Discussion

In patients diagnosed with melioidosis, bacteraemia occurs in 40-60%, leading to septic shock in 20% of all cases.⁴ Dissemination of the bacteria to internal organs is common. Prostatic abscess is also a manifestation of systemic melioidosis and should be suspected in all male patients.¹

Melioidosis is underdiagnosed worldwide mainly because of lack of diagnostic facilities, especially in low-income rural populations where people are at highest risk of developing the infection.⁴ The diagnosis of melioidosis based on clinical evidence alone is difficult even in endemic countries due to the protean clinical manifestations, as was the case in our patient who was initially suspected to have prostatitis. Confirmation is therefore dependent on isolation of the pathogen from patient samples including blood, pus, sputum, or urine as the organism is not a part of the normal human microbiota.^{3,4} The indirect haemagglutination assay (IHA) is the most widely used serological method which detects antibodies against *Burkholderia pseudomallei*. Antibody positivity may occur due to prior exposure to the organism in endemic regions and antibodies may become negative early in the disease or due to severe immunosuppression. Serology should therefore be interpreted according to the clinical picture.

As per the standard treatment guidelines, Ceftazidime, imipenem or meropenem can be used for a minimum of 10-14 days in the intensive phase of treatment. However, a longer duration of parenteral therapy (>2 weeks) may be necessary in cases of severe disease such as septic shock, deep seated or organ abscesses, osteomyelitis, septic arthritis or neurological melioidosis. The addition of co-trimoxazole should be considered during the intensive phase of treatment for

patients with severe infection involving the brain, prostate or other privileged sites⁶. In the eradication phase oral co-trimoxazole, doxycycline or co-amoxiclav is used for a period of 3-6 months.³ Osteomyelitis, central nervous system infection and arterial infection presenting as mycotic aneurysm warrant 6 months of eradication therapy.⁶ We treated our patient with IV meropenem from day 1 onwards as he was haemodynamically unstable and was on inotropes and also septic at the time of admission.

Take home message: In endemic countries a high degree of suspicion is required to exclude melioidosis in patients presenting with abscesses and avoid misdiagnosis of this not so uncommon condition.

Declarations

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Authors' contributions: All authors have contributed. FSM and MNP: wrote the manuscript. SC and AA: supervised the manuscript writing.

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