


Case Report

First case report of melioidosis in Jammu and Kashmir, India: A rare presentation

Ali Imran¹, Insha Altaf², Muhammad Haseeb Gani³, Shazia Salam¹, Pradeep Bharti⁴, Jan Mohammad Beigh⁵Departments of ¹Critical Care, ²Microbiology, ³Orthopedics, Paras Health, Srinagar, Jammu and Kashmir, ⁴Department of Microbiology, Paras Health, Gurgaon, Haryana, ⁵Department of Cardiology, Paras Health, Srinagar, Jammu and Kashmir, India.**ABSTRACT**

This is the first case of melioidosis presenting as acute osteomyelitis with septic shock in Jammu and Kashmir, India. A 53-year-old policeman presented with cough and fever for 1 month, along with purulent discharge from the right tibia for 15 days. He was diagnosed as type 2 diabetes mellitus (1st time) with glycated hemoglobin 14.3% with septic shock and multiple organ dysfunction syndrome. *Burkholderia pseudomallei* grew from pus and blood culture. The patient was treated for 6 weeks with meropenem and later ceftazidime after stabilization. He was discharged in stable condition and advised strict follow-up to complete the eradication phase with oral cotrimoxazole.

Keywords: *Burkholderia pseudomallei*, India, Jammu and Kashmir, Melioidosis, Sepsis

INTRODUCTION

Melioidosis, caused by *Burkholderia pseudomallei*, is endemic to northern Australia and Southeast Asian countries such as Thailand, Malaysia, and Vietnam. Recent prediction suggests that South Asia carries 44% burden of the disease, and India is the “hot spot,” having more than 50,000 cases and 30,000 deaths annually. It is usually acquired by contaminated water or soil through ingestion, inhalation, or percutaneous exposure.^[1] It causes protean manifestations such as pneumonia, sepsis, arthritis, and organ abscesses, with pneumonia being the most common presentation. Melioidosis can present with a wide array of manifestations; hence, it is called a great mimicker.^[2] Most of the melioidosis cases in India are diagnosed in the southern States such as Kerala and Tamil Nadu and recently from eastern, central, and north-eastern States.^[3,4] However, it has hardly ever been diagnosed in the hilly regions of north and north-western India. The occurrence of a melioidosis case in Jammu and Kashmir carries significant public health implications, highlighting the need for increased vigilance and awareness. It may suggest a potential shift in the disease's geographical distribution, underscoring the importance of broadening the geographical scope of melioidosis surveillance. It may also necessitate increased awareness among health-care professionals in Jammu and Kashmir.

CASE REPORT

A 53-year-old policeman from the Poonch district of Jammu and Kashmir, India, with travel history to Madhya Pradesh, India, presented to a local hospital with a history of intermittent, high-grade fever, associated with chills for the past 1 month, shortness of breath, cough and swelling of the right tibia with pus discharge for past 15 days. His baseline investigations were within normal limits, cultures were sterile, and the 2D echo was normal with no evidence of vegetation. Tropical infection workup was negative for malaria, dengue, and typhoid. Brucella serology was negative. High-resolution computed tomography of the chest showed right lower lobe nodules, a cavitary lesion with mediastinal lymphadenopathy. Fiberoptic bronchoscopy with bronchoalveolar lavage was done, and it was negative for acid-fast bacilli and cartridge-based nucleic acid amplification test (GeneXpert *Mycobacterium tuberculosis*). He was diagnosed with uncontrolled type 2 diabetes mellitus (T2DM) on admission (glycated hemoglobin 14.3%). Magnetic resonance imaging of the right lower limb showed tibial marrow and anterior cortex edema with surrounding soft-tissue thickening and edema suggestive of acute tibial osteomyelitis.

Given the worsening clinical parameters, the patient was empirically started on anti-tubercular treatment (ATT) and

*Corresponding author: Insha Altaf, Department of Microbiology, Paras Health, Srinagar, Jammu and Kashmir, India. inshaltaf86@gmail.com

Received: 26 April 2025 Accepted: 08 September 2025 Epub ahead of print: 04 December 2025 Published: 17 March 2026 DOI: 10.25259/IJMS_129_2025

This is an open-access article distributed under the terms of the Creative Commons Attribution-Non Commercial-Share Alike 4.0 License, which allows others to remix, transform, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms. ©2026 Published by Scientific Scholar on behalf of Indian Journal of Medical Sciences

referred to our hospital. On arrival at our hospital, after 25 days of admission in a local hospital, he was in shock with a heart rate of 112/min and blood pressure 82/52 mmHg. The patient was irritable and disoriented; pupils were normal reacting to light, no focal neurological deficit, and no meningeal signs. His respiratory rate was 38/min, SPO₂ 91% with O₂ at 10 L/min (by face mask) with accessory muscle use. Chest auscultation revealed bilateral basal crepitations. Abdominal examination was unremarkable. Local examination showed a 2 cm open incision wound over the right mid-shin, exuding pus with surrounding edema. The patient was admitted to the intensive care unit (ICU). 2D echo showed left ventricular global hypokinesia with ejection fraction (EF) = 30%. Ultrasound abdomen showed bilateral renal cortical echogenicity raised, with no evidence of abscess anywhere. Non-contrast computed tomography of the head was normal. During the ICU stay, the patient was managed with intravenous antibiotics (meropenem and linezolid), non-invasive ventilation (NIV) support, vasopressor/inotropic support, and insulin infusion. The patient had recurrent ventricular tachycardia (VT) in the ICU, which was managed by cardioversion and antiarrhythmics. The patient was managed along the lines of septic and cardiogenic shock, multiple organ dysfunction syndrome (MODS) (acute kidney injury, coagulopathy, encephalopathy, and type 1 respiratory failure), acute liver injury (drug-induced liver injury/ischemic hepatitis), septic cardiomyopathy with heart failure with reduced EF, recurrent VT, and septic encephalopathy. The patient was taken for debridement of osteomyelitis under regional block on day 2 of ICU admission. The wound was debrided, and the entire interior of the tibia was cleaned through windows in the shaft, upper, and lower ends.

Direct microscopy of pus revealed Gram-negative bacilli. On blood agar and Mac-Conkey agar, Gram-negative, non-lactose fermenting colonies with metallic sheen were grown, which were oxidase positive. For identification and antimicrobial susceptibility testing, the VITEK-2 Compact system was used, which identified the isolate as *B. pseudomallei* sensitive to meropenem, ceftazidime, and cotrimoxazole and resistant to polymyxin B. The blood culture also grew *B. pseudomallei*. The diagnosis was reconfirmed by matrix-assisted laser desorption/ionization time-of-flight (MALDI-TOF) from another laboratory.

After culture reports, ATT was stopped, and meropenem was started. After stabilization, meropenem was switched to ceftazidime to complete the intensive phase for 6 weeks. Over the next 72 h, vasopressors and NIV support were weaned off. He was discharged in stable condition on day 17 and advised injection of ceftazidime for the next 4 weeks to complete the intensive phase. The patient was advised strict follow-up for completion of the eradication phase with oral cotrimoxazole. On follow-up after 1 week and after completion of treatment at 6 months, the patient has recovered with a healed wound over the tibial region. The patient did not have any obvious

history of contact with soil and contaminated water, and the source of the organism could not be further detected.

DISCUSSION

Melioidosis is a potentially fatal disease caused by the Gram-negative bacterium *B. pseudomallei*.^[5,6] It is extensively distributed in environments such as soil and water.^[7] The major risk factors are diabetes mellitus, chronic renal disease, long-term steroid use, and chronic alcohol intake. Most of the patients have a history of contact with soil and water as a part of their occupation or for recreational activities. Vidyalakshmi *et al.*^[8] found a correlation between 76% of diabetes and melioidosis. The usual incubation period usually ranges from 1 to 21 days.^[9] It may present as an acute or chronic infection or remain latent in a dormant state. On direct microscopy, *B. pseudomallei* may exhibit a bipolar or safety pin appearance. Colonies on culture are typically rough and corrugated. Species identification can be done by automated methods such as VITEK 2 Compact and MALDI-TOF.^[10]

Due to a lack of adequate diagnostic facilities and a low index of suspicion, melioidosis is underreported.^[11] This disease poses many diagnostic challenges. Any oxidase-positive Gram-negative non-fermenter bacteria are usually reported as *Pseudomonas* spp. The wrinkled colonies of *B. pseudomallei* also resemble aerobic spore-bearing bacteria, which are common laboratory contaminants and are likely to be discarded. Even VITEK-2 and MALDI-TOF are not reliable enough to identify *B. pseudomallei*, especially with inexperienced operators.^[12]

Melioidosis can present with non-specific signs and symptoms, having overlapping manifestations with other diseases, including tuberculosis, hence called a great mimicker.^[2] Melioidosis mimics tuberculosis and other tropical diseases in India due to overlapping clinical presentations. Both can cause pneumonia, fever, and pulmonary nodules. Limited diagnostic resources, particularly in rural areas, hinder accurate differentiation. Clinicians may rely on clinical symptoms and chest X-rays, leading to misdiagnosis. *B. pseudomallei* culture, the gold standard, is not widely available. Lack of awareness about melioidosis among health-care providers further contributes to misdiagnosis, especially in regions where it is considered less common. The disease's diverse manifestations, ranging from localized abscesses to septicemia, complicate diagnosis. Bone involvement has been reported in 16% of cases by Mukhopadhyay *et al.*^[13] Our case was the first diagnosed case from Jammu and Kashmir, presented with acute osteomyelitis and septic shock along with MODS in a patient with uncontrolled T2DM. It will be an eye-opener to the microbiologists and clinicians who may never consider melioidosis as a differential diagnosis in a similar clinical presentation. Treatment of melioidosis is

challenging as it consists of an intensive phase (2–6 weeks) with ceftazidime or meropenem and an eradication phase (3–6 months) with oral cotrimoxazole or doxycycline to prevent relapse.^[14] *B. pseudomallei* is intrinsically resistant to penicillin, ertapenem, and polymyxins.^[15]

CONCLUSION

The detection of melioidosis in Jammu and Kashmir serves as a crucial reminder that this neglected tropical disease may be more widespread than previously thought, demanding a proactive public health response. The disease's diverse clinical presentations and the potential for misdiagnosis, especially as tuberculosis, necessitate increased awareness among health-care professionals in Jammu and Kashmir. It calls for improved access to diagnostic facilities capable of accurately identifying *B. pseudomallei*. The finding necessitates the development of public health strategies to mitigate the risk of melioidosis in the region. This includes educating the public about risk factors, promoting preventive measures, and establishing protocols for early detection and treatment. The discovery of a case raises the possibility that other cases may have gone undiagnosed or unreported in the region. It emphasizes the need for enhanced surveillance systems to accurately assess the true burden of melioidosis.

Acknowledgment: The work was supported by a microbiology laboratory technician, Mir Farhad ul Mushtaq.

Ethical approval: Institutional Review Board approval is not required.

Declaration of patient consent: The authors certify that they have obtained all appropriate patient consent forms. In the form, the patients have given their consent for their clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship: Nil.

Conflicts of interest: Dr. Insha Altaf is on the Editorial Board of the Journal.

Use of artificial intelligence (AI)-assisted technology for manuscript preparation: The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript, and no images were manipulated using AI.

REFERENCES

1. Cheng AC, Currie BJ. Melioidosis: Epidemiology, Pathophysiology, and Management. *Clin Microbiol Rev* 2005;18:383-416.
2. Khakhum N, Chapartegui-González I, Torres AG. Combating

the Great Mimicker: Latest Progress in the Development of *Burkholderia pseudomallei* Vaccines. *Expert Rev Vaccines* 2020;19:653-60.

3. Birnie E, Virk HS, Savelkoel J, Spijker R, Bertherat E, Dance DA, *et al.* Global burden of Melioidosis in 2015: A Systematic Review and Data Synthesis. *Lancet Infect Dis* 2019;19:892-902.
4. Mohapatra PR, Mishra B. Burden of Melioidosis in India and South Asia: Challenges and Ways Forward. *Lancet Reg Health Southeast Asia* 2022;2:100004.
5. Warawa JM. Evaluation of Surrogate Animal Models of Melioidosis. *Front Microbiol* 2010;1:141.
6. Hall CM, Busch JD, Shippy K, Allender CJ, Kaestli M, Mayo M, *et al.* Diverse *Burkholderia* Species Isolated from Soils in the Southern United States with No Evidence of *B. pseudomallei*. *PLoS One* 2015;10:e0143254.
7. Gibney KB, Cheng AC. Reducing the Melioidosis Burden: Public Health, Chronic Disease Prevention, or Improved Case Management. *Lancet Infect Dis* 2019;19:800-2.
8. Vidyalakshmi K, Shrikala B, Bharathi B, Suchitra U. Melioidosis: An Under-Diagnosed Entity in Western Coastal India: A Clinico-Microbiological Analysis. *Indian J Med Microbiol* 2007;25:245-8.
9. Foong YC, Tan M, Bradbury RS. Melioidosis: A Review. *Rural Remote Health* 2014;14:2763.
10. Periaiah P, Antony T, Samuel S. Identification of *Burkholderia cepacia* Complex: Comparing Conventional, Automated, and Molecular Methods in a Tertiary Care Center. *Cureus* 2024;16:e70847.
11. Deb S, Singh M, Choudhary J, Jain VK, Kumar S. A rare Case of a Knee Septic Arthritis by *Burkholderia pseudomallei*: A Case Report from a Tertiary Care Hospital of Andaman and Nicobar Island. *J Orthop Case Rep* 2021;11:20-3.
12. Lowe P, Engler C, Norton R. Comparison of Automated and Nonautomated Systems for Identification of *Burkholderia pseudomallei*. *J Clin Microbiol* 2002;40:4625-7.
13. Mukhopadhyay C, Chawla K, Krishna S, Nagalakshmi N, Rao SP, Bairy I. Emergence of *Burkholderia pseudomallei* and Pandrug-Resistant Non-Fermenters from Southern Karnataka, India. *Trans R Soc Trop Med Hyg* 2008;102 Suppl 1:S12-7.
14. Currie BJ, Mayo M, Ward LM, Kaestli M, Meumann EM, Webb JR, *et al.* The Darwin Prospective Melioidosis Study: A 30-Year Prospective, Observational Investigation. *Lancet Infect Dis* 2021;21:1737-46.
15. Bugrysheva JV, Sue D, Gee JE, Elrod MG, Hoffmaster AR, Randall LB, *et al.* Antibiotic Resistance Markers in *Burkholderia pseudomallei* Strain Bp1651 Identified by Genome Sequence Analysis. *Antimicrob Agents Chemother* 2017;61:e00010-7.

How to cite this article: Imran A, Altaf I, Gani MH, Salam S, Bharti P, Beigh JM. First case report of melioidosis in Jammu and Kashmir, India: A rare presentation. *Indian J Med Sci.* 2026;78:66-8. doi: 10.25259/IJMS_129_2025