Original Research

"UNUSUAL PRESENTATION OF MELIOIDOSIS: A CASE REPORT HIGHLIGHTING CLINICAL AND MICROBIOLOGICAL CHALLENGES"

Dr. Ankita Sharma[1*], Dr. Nitasha Sharma[2], Dr. Rajendra Sharma[3], Dr. Mithilesh Raut[4], Dr. Amber Agarwal[5]

[1*]Assistant Professor, Department of Microbiology, GMC Pali, Rajasthan and Ex- Consultant Microbiologist, Department of Microbiology, Medicover Superspecialty Hospitals, Hyderabad, Telangana.

[2]Assistant Professor, Department of General Medicine, GMC Pali, Rajasthan.

[3]Associate Professor, Department of Pharmacology, VCSGGIMSR, Srinagar, Garhwal, Uttarakhand.

[4]Consultant Intensivist, Department of Critical care, Medicover Superspecialty Hospitals, Hyderabad, Telangana.

[5]Consultant Microbiologist, Harisharnam Diagnostics, Hisar, Haryana.

Corresponding Author: Dr Ankita Sharma

Assistant Professor, Department of Microbiology, GMC Pali, Rajasthan and Ex- Consultant Microbiologist, Department of Microbiology, Medicover Superspecialty Hospitals, Hyderabad, Telangana.

Email: drankitasharma4@gmail.com

ABSTRACT

Introduction: Melioidosis is an emerging infectious disease caused by *Burkholderia pseudomallei*, commonly seen in tropical regions and increasingly reported in India. It presents with a wide spectrum of clinical manifestations and often mimics other infectious or malignant conditions, leading to diagnostic challenges, especially in immunocompromised individuals.

Case Presentation: A 62-year-old male, a known case of non-small cell lung carcinoma post chemoradiotherapy, presented with left upper abdominal pain and intermittent fever for two months. He had underlying diabetes mellitus. Imaging revealed hepatosplenomegaly with a splenic abscess. Aspiration of the collection showed neutrophilic predominance, and microbiological culture grew *Burkholderia pseudomallei*. Tuberculosis and malignancy were ruled out. The patient was diagnosed with melioidosis presenting as a splenic abscess without pulmonary involvement. He was treated with intravenous ceftazidime followed by oral cotrimoxazole, along with supportive care and glycemic control.

Results: The patient showed significant clinical improvement with resolution of fever and stabilization of laboratory parameters. No complications were observed during hospitalization, and he was discharged in stable condition on prolonged eradication therapy.

Conclusion: This case highlights an unusual extrapulmonary presentation of melioidosis in an immunocompromised host, emphasizing the importance of early microbiological diagnosis and targeted therapy. A high index of suspicion is essential to avoid misdiagnosis and ensure timely management.

Keywords: Melioidosis, Burkholderia Pseudomallei, Splenic Abscess, Non-Small Cell Lung Carcinoma, Diabetes Mellitus, Immunocompromised Host, Extrapulmonary Infection, Sepsis, India.

www.ajmrhs.com
eISSN: 2583-7761

Date of Received: 27-04-2026
Date Acceptance: 04-05-2026
Date of Publication: 05-02-2026

INTRODUCTION

Melioidosis is an emerging infectious disease caused by *Burkholderia pseudomallei*, a Gram-negative environmental bacillus commonly found in soil and surface water in tropical and subtropical regions [1]. The disease has been traditionally considered endemic to Southeast Asia and Northern Australia; however, recent data have highlighted its increasing recognition

in India, where it remains significantly underdiagnosed due to its varied clinical presentations and limited clinical awareness.[1] South Asia contributes nearly 44% of the global burden of melioidosis, with established endemicity in countries such as Bangladesh and Sri Lanka.[1]

The clinical spectrum of melioidosis is highly diverse, ranging from localized infections such as abscess formation and septic arthritis to severe systemic manifestations including septicemia and multiorgan involvement.[2] Although pulmonary involvement is most common, extrapulmonary manifestations involving organs such as the liver, spleen, and soft tissues are increasingly being reported.[2] Splenic involvement, in particular, often presents with nonspecific symptoms like fever and abdominal pain, which can mimic other infectious or malignant conditions, thereby posing a significant diagnostic challenge.

In India, the disease continues to be underreported, with most cases documented from southern regions, especially Kerala and Tamil Nadu.[2] The burden in other parts of the country is likely underestimated, reflecting gaps in awareness and diagnostic capabilities. Transmission typically occurs through direct inoculation, inhalation, or ingestion, and the risk is markedly increased in individuals with underlying comorbidities such as diabetes mellitus, chronic kidney disease, malignancy, and other immunocompromised states.

In patients with underlying malignancy, particularly those receiving chemotherapy or radiotherapy, the diagnosis of melioidosis becomes even more challenging due to overlapping clinical features with disease progression or secondary infections. This overlap can lead to delays in diagnosis and initiation of appropriate therapy, thereby increasing morbidity and mortality. Microbiological culture remains the gold standard for diagnosis; however, it requires a high index of suspicion and timely laboratory identification.

This case report described an unusual presentation of melioidosis as a splenic abscess in a patient with treated non-small cell lung carcinoma, highlighting the clinical and microbiological challenges associated with its diagnosis and management.

Case Presentation:

A 62-year-old male presented with complaints of left upper abdominal pain associated with intermittent fever for approximately 1–2 months. The pain was described as dull, persistent, and associated with a sensation of heaviness in the abdomen. There were no associated symptoms such as vomiting, jaundice, or altered bowel habits. The patient also experienced intermittent febrile episodes but denied chills, rigors, or weight loss.

His medical history included non-small cell lung carcinoma (NSCLC, stage cT2N3M0), for which he had undergone radical chemoradiotherapy, completed in October 2020. The patient also had type 2 diabetes mellitus, for which he was on treatment. There was no history of tuberculosis or any prior similar complaints.

On examination, the patient was tachycardic with a pulse rate of 116/min, blood pressure of 120/80 mmHg, and oxygen saturation of 97% on room air. He was afebrile at admission, and his performance status was ECOG 1. Abdominal examination revealed mild tenderness in the left hypochondrium without guarding or rigidity. No palpable organomegaly or free fluid was clinically noted.

Initial laboratory investigations showed anemia (hemoglobin 8.0 g/dL), with normal leukocyte and platelet counts. Inflammatory markers were markedly elevated, with C-reactive protein (CRP) of 187.9 mg/L, suggesting ongoing sepsis. Liver function tests indicated mildly elevated bilirubin levels, with normal transaminases, while renal function tests were normal. Glycemic evaluation revealed suboptimal control with an HbA1c of 8.4%.

Imaging studies were performed to evaluate the source of infection. Magnetic Resonance Cholangiopancreatography (MRCP) demonstrated hepatomegaly (liver span 16 cm) and splenomegaly (18 cm), along with a subcapsular splenic collection of approximately 5.5 cm. CT findings of the spleen revealed an enlarged spleen (14.6 cm) with multiple round and irregular fluid-attenuation hypodense non-enhancing lesions of varying sizes. The largest lesion measured approximately 40 x 38 x 63 mm (~48 cc) and was located along the anterior margin near the upper pole(Figure 1). These lesions did not show progressive enhancement on delayed phase imaging. One lesion appeared subcapsular, located along the anterior margin, and exhibited surrounding fat stranding with a thin rim of perisplenic fluid, raising suspicion of a rupture. Additionally, two splenunculi were identified at the splenic hilum. There were also a few borderline enlarged lymph nodes noted in the jejunal and proximal ileal mesentery.

Ultrasound-guided aspiration of the splenic collection was performed for definitive diagnosis. Cytological examination showed marked neutrophilic leukocytosis, with a cell count of 76,800 (95% neutrophils), but no malignant cells were found. Microbiological evaluation revealed negative Ziehl–Neelsen staining for acid-fast bacilli and negative TB-PCR, excluding tuberculosis. A Gram stain of the aspirated fluid showed pus cells with Gram-negative

bacilli exhibiting a safety-pin appearance(Figure 2). Culture of the aspirated fluid on Blood and MacConkey agar grew *Burkholderia pseudomallei*, identified by the Vitek 2 Compact System, confirming the diagnosis of melioidosis presenting as a splenic abscess(Figure 3). The organism also demonstrated intrinsic resistance to Colistin on MHA, indicative of its natural resistance.

The patient was initially started on broad-spectrum intravenous antibiotics, including piperacillin-tazobactam and levofloxacin, pending culture results. After culture confirmation, the antibiotic regimen was escalated to intravenous ceftazidime (2 g thrice daily) and oral trimethoprim-sulfamethoxazole (cotrimoxazole) according to sensitivity results. Supportive management included intravenous fluids and symptomatic care. Due to hyperglycemia, an endocrinology consultation was obtained, and the patient was started on insulin and oral hypoglycemic agents.

During his hospital stay, the patient showed clinical improvement, with the resolution of fever and stabilization of vital parameters. Repeat laboratory tests showed improvement in renal function and a decrease in inflammatory markers. No complications occurred during hospitalization.

The patient was discharged in a hemodynamically stable condition and advised to continue antibiotic therapy (intravenous ceftazidime and oral cotrimoxazole) for one month. He was also instructed to maintain strict glycemic control with insulin and oral hypoglycemic agents and to monitor blood glucose regularly. Follow-up was scheduled, including repeat investigations such as CBC, renal function tests, liver function tests, and CRP levels.

DISCUSSION

Melioidosis is an emerging but often underrecognized infectious disease caused by *Burkholderia pseudomallei*, an environmental saprophyte commonly found in soil and fresh surface water in endemic regions.[3] The organism thrives in ecological niches such as stagnant water, moist soil, and rice paddies, which serve as major reservoirs for human infection.[4] Transmission typically occurs through inhalation, ingestion, or direct inoculation via breached skin.[2] Environmental factors, particularly rainfall and flooding, have been shown to significantly influence disease occurrence. A study from southern Kerala demonstrated a clear association between melioidosis cases and the monsoon season, with increased incidence during periods of heavy rainfall.[5] In the present case, the patient belonged to South Kerala and had a history of exposure to flood water during the monsoon season, which likely acted as the source of infection, thereby supporting the environmental and seasonal correlation described in previous studies.

Diabetes mellitus has consistently been identified as the most important predisposing factor for melioidosis. Vidyalakshmi et al. reported that nearly 76% of patients with melioidosis were diabetic, emphasizing the strong association between impaired glycemic control and susceptibility to infection.[6] Other risk factors such as chronic kidney disease, malignancy, and immunosuppression have also been implicated in increasing vulnerability to *B. pseudomallei* infection.[2,7] In our case, the patient had underlying type 2 diabetes mellitus along with a history of treated non-small cell lung carcinoma, both of which likely contributed to immunosuppression and predisposed him to this opportunistic infection. This finding aligns well with previous literature highlighting diabetes and malignancy as key risk factors.

Melioidosis is known for its wide spectrum of clinical manifestations, often described as a "great mimicker." Pulmonary involvement is the most common presentation, frequently associated with bacteremia in adult patients.[2,5] However, extrapulmonary manifestations, including abscess formation in organs such as the liver and spleen, are increasingly recognized.[8] In contrast to the commonly reported pulmonary presentations, our patient did not exhibit respiratory symptoms, which makes this case clinically unusual. Instead, he presented with intermittent fever and perisplenic abscess, along with imaging evidence of hepatosplenomegaly and intra-abdominal collections. This atypical presentation further emphasizes the protean nature of melioidosis and the diagnostic challenges it poses, especially in patients with underlying malignancy where such findings may be mistaken for metastatic disease or treatment-related complications.

Microbiological confirmation remains the cornerstone for diagnosis; however, it can be technically challenging. The Clinical and Laboratory Standards Institute (CLSI) guidelines recommend broth microdilution as the standard method for antimicrobial susceptibility testing of *B. pseudomallei*, though it is not routinely feasible in many laboratories.[9] Automated systems such as VITEK 2 can assist in identification, but limitations in minimum inhibitory concentration (MIC) interpretation exist, necessitating alternative approaches such as disc diffusion methods guided by EUCAST recommendations. In the present case, prompt identification of *B. pseudomallei* from the aspirated splenic collection enabled early initiation

of targeted therapy, underscoring the critical role of a microbiology laboratory in diagnosing this infection.

The organism exhibits a distinctive antibiotic susceptibility profile. It is generally sensitive to ceftazidime, carbapenems, cotrimoxazole, doxycycline, and amoxicillin-clavulanic acid, while showing intrinsic resistance to aminoglycosides and colistin.[9] Current treatment guidelines recommend an intensive phase consisting of intravenous antibiotics, preferably ceftazidime, for a duration of 2–8 weeks, followed by a prolonged eradication phase using oral agents such as cotrimoxazole for 3–6 months to prevent relapse.[9] In our case, the patient received intravenous ceftazidime for four weeks, followed by oral cotrimoxazole, and showed significant clinical improvement. This management approach was consistent with standard treatment recommendations and highlights the importance of adherence to prolonged therapy in preventing recurrence.

The varied and often nonspecific clinical presentation of melioidosis makes early diagnosis difficult, particularly in non-endemic regions or in cases with atypical manifestations. In patients with malignancy, the diagnostic challenge is further compounded due to overlapping features with disease progression or secondary infections. Therefore, a high index of clinical suspicion, combined with timely microbiological evaluation, is essential for accurate diagnosis and appropriate management. Additionally, strict adherence to treatment protocols is crucial, as incomplete therapy may lead to relapse or reactivation of infection.

CONCLUSION

Melioidosis is a potentially life-threatening infection with diverse and often atypical clinical presentations, making diagnosis challenging. This case highlights an unusual presentation as a perisplenic abscess in a patient with underlying malignancy and diabetes mellitus, emphasizing the role of immunosuppression as a key risk factor. The absence of typical pulmonary involvement further added to the diagnostic difficulty. Early microbiological confirmation played a crucial role in guiding appropriate therapy. Prompt initiation of targeted antibiotics and adherence to prolonged treatment resulted in favorable clinical outcomes. A high index of suspicion and awareness among clinicians and microbiologists are essential for timely diagnosis and effective management of melioidosis.

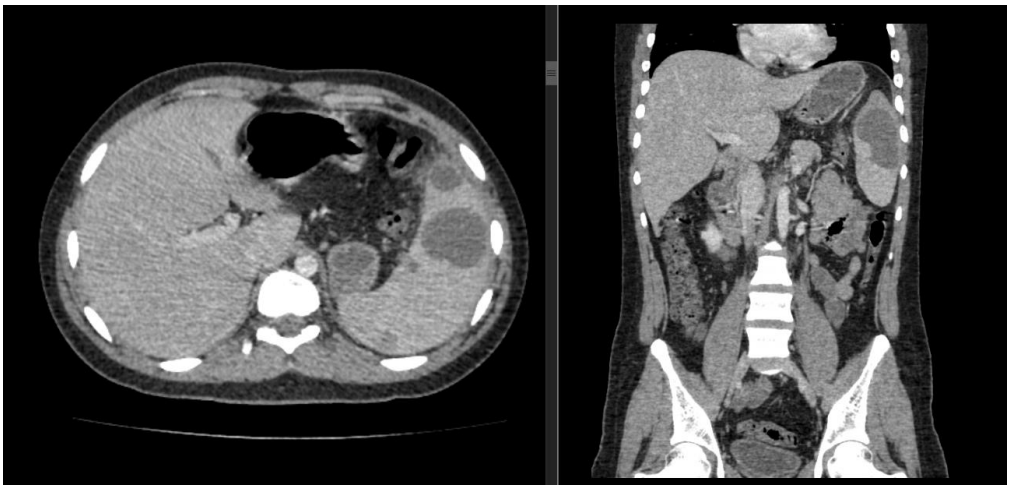

Figure 1: CT Findings Reveal an Enlarged Spleen (14.6 Cm) with Multiple Fluid-Attenuation Hypodense Lesions of Varying Sizes, the Largest Measuring 40x38x63 Mm. One Subcapsular Lesion Along the Anterior Margin Shows Surrounding Fat Stranding and a Thin Rim of Perisplenic Fluid, Suggesting Possible Rupture. Two Splenunculi are Noted at the Splenic Hilum

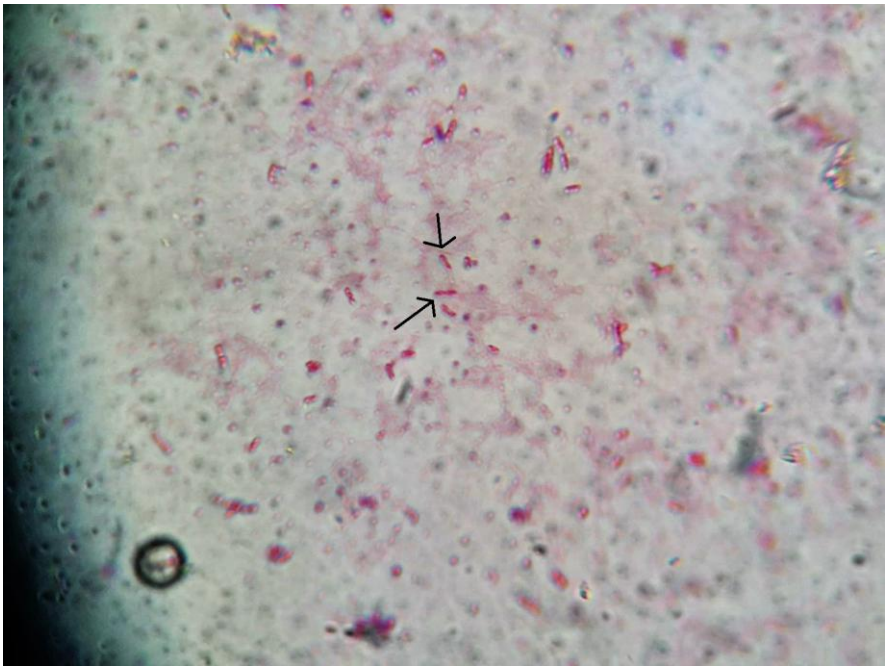

Figure 2: Microscopic Image with Safety Pin Appearance Showing Gram-Negative Bacilli Consistent with Burkholderia Pseudomallei

Figure 3: Macconkey Agar Grew *Burkholderia Pseudomallei*

REFERENCES

1. Anuradha K, Meena A, Lakshmi V. Isolation of *Burkholderia pseudomallei* from a case of septicaemia: a case report. Indian J Med Microbiol. 2003;21(2):129–32.
2. Barman P, Sidhwa H, Shirkhande P. Melioidosis: a case report. J Glob Infect Dis. 2011;3(2):183–6.
3. Barman P, Kaur R, Kumar K. Clinically lesser-known entity in India: a report of two cases of melioidosis. Indian J Crit Care Med. 2013;17(1):46–8.
4. Brett P, Deshazer D, Woods D. Characterization of *Burkholderia pseudomallei* and *Burkholderia pseudomallei*-like strains. Epidemiol Infect. 1997;118(2):137–48.
5. Bhaskaran P, Prasad V, Gopinathan A, Shaw T, Sivadas S, Jayakumar C. *Burkholderia pseudomallei* in environment of adolescent siblings with melioidosis, Kerala, India, 2019. Emerg Infect Dis. 2019;28(6):1246–9.
6. Vidyalakshmi K, Lipika S, Vishal S, Damodar S, Chakrapani M. Emerging clinico-epidemiological trends in melioidosis: analysis of 95 cases from western coastal India. Int J Infect Dis. 2012;16(7):e491–7.
7. Mukhopadhya A, Balaji V, Jesudason MV, Amte A, Jeyamani R, Kurian G. Isolated liver abscesses in melioidosis. Indian J Med Microbiol. 2007;25(2):150–1.
8. Saravu K, Vishwanath S, Kumar R, Barkur A, Varghese G, Mukhyopadhyay C. Melioidosis: a case series from south India. Trans R Soc Trop Med Hyg. 2008;102(Suppl 1):S18–20.
9. Sullivan R, Marshall C, Anstey N, Ward L, Currie B. Review and revision of the 2015 Darwin melioidosis treatment guideline: paradigm drift not shift. PLoSNegl Trop Dis. 2020;14(9):e0008659.

How to cite this article: Dr. Ankita Sharma, Dr. Nitasha Sharma, Dr. Rajendra Sharma, Dr. Mithilesh Raut, Dr. Amber Agarwal, "UNUSUAL PRESENTATION OF MELIOIDOSIS: A CASE REPORT HIGHLIGHTING CLINICAL AND MICROBIOLOGICAL CHALLENGES", Asian J. Med. Res. Health Sci., 2026; 4 (2):711-716.
Source of Support: Nil, Conflicts of Interest: None declared.