

# Whitmore's disease in a diabetic patient

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## Abstract

*Burkholderia pseudomallei* is a pathogen found in tropical climates. Clinically, it manifests with a wide variety of nonspecific symptoms. We present the case of a 64-year-old male patient with a history of controlled type 2 diabetes mellitus, stage IIIB chronic kidney disease and tuberculosis treated in 2015, who had a prolonged febrile syndrome and chest pain with ischemic electrocardiographic changes. He underwent arteriography which revealed multivessel coronary disease with an indication for open surgical treatment. On his presurgical laboratory tests a chest tomography showed an upper right mediastinal mass, and therefore his procedure was postponed. The mass was studied on an outpatient basis with a negative biopsy for malignancy and microorganisms. He subsequently developed asthenia and adynamia over four months, at which time *B. pseudomallei* was isolated in blood cultures. He was successfully treated with a carbapenem for 15 days and is now receiving maintenance treatment with no complications. (*Acta Med Colomb* 2022; 47. DOI: <https://doi.org/10.36104/amc.2022.2319>).

**Keywords:** melioidosis, *Burkholderia pseudomallei*, diabetes.

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## Introduction

Melioidosis is an infectious disease caused by *Burkholderia pseudomallei*, a saprophytic bacterium found in the soil (1), generally in tropical climates, with most cases being diagnosed in Asia and northern Australia (2). It has a wide variety of clinical presentations ranging from acute to chronic and may involve multiple organs, with the lungs most commonly affected, in approximately 50% of cases (3). It must be diagnosed with laboratory tests and is classified as a hazard group 3 pathogen and a level 1139 select agent (4). Antibiotic treatment is successful and includes a strict and prolonged intravenous antibiotic regimen for at least two weeks, followed by oral antibiotics (5).

## Clinical case

A 64-year-old man from Landázuri (Santander, Colombia), with a history of controlled insulin-dependent type 2 diabetes, stage 3b chronic kidney disease and tuberculosis treated in 2015, was admitted for prolonged fever and chest pain. Laboratory tests showed a systemic inflammatory response with a possible pulmonary source, and empirical antibiotic coverage was begun with ureidopenicillin. The patient had positive troponins with dynamic T-wave changes on electrocardiogram, and therefore invasive stratification was ordered, with multivessel coronary disease found on arteriography, requiring open heart surgery. Preoperative testing showed a mass in the right upper mediastinum on chest tomography, and thus the procedure was postponed.

The mass was studied on an outpatient basis, and the biopsy reported «sino-histiocyte hyperplasia with fibroanthracosis, negative for malignancy and microorganisms.»

He was readmitted approximately four months later due to two weeks of asthenia, fatigue and general malaise. Tests showed elevated acute phase reactants, and an aerobic blood culture was positive for ceftazidime and meropenem-sensitive *Burkholderia pseudomallei*. He was seen by the infectious disease service, who diagnosed bacteremia due to melioidosis with no current systemic complications, and was started on carbapenem treatment for 14 days (meropenem 2 g/8 hours), which he completed without complications, and was discharged on trimethoprim/sulfamethoxazole 160/800 mg, 2 tablets/12 hours for three months, with the surgical procedure postponed for at least four more months.

## Discussion

Whitmore's disease, or melioidosis, is an infectious disease caused by *Burkholderia pseudomallei* which is found in contaminated soil or stored water (6). It is known to be one of the main causes of pneumonia and sepsis in southeast Asia and northern Australia, and population movements are thought to have contributed to its dissemination. In Colombia, it is not considered to be a disease of public health interest, and therefore may be underreported. However, Colombia has the second-highest number of case reports in South America, after Brazil (1).

Most patients have comorbidities like diabetes (38-75%), liver disease, chronic kidney disease, dangerous alcohol consumption and immunosuppression. However, up to 16% of diagnosed patients do not have any identifiable risk factor and have a 58% mortality rate (6, 7).

In 80% of cases, it presents acutely (less than two months with symptoms), and in the remaining 20% it is chronic (more than three months since onset). It is also classified as bacteremic or nonbacteremic, depending on the isolation of bacteria from blood cultures, and as localized, focal or disseminated melioidosis according to organ involvement. It may involve multiple organs, although the lungs are involved in approximately half of all cases. Radiological images show infiltrates and cavitory lesions which may mimic tuberculosis, and it is essential for melioidosis to be identified rapidly, as this presentation has shown greater mortality (3, 6, 8).

It must be diagnosed through laboratory tests, due to its clinical characteristics and varied and nonspecific presentations. More than one microbiological identification method (preferably molecular) should be used, especially the Phoenix and MALDI TOF systems. The latter is a quick and accurate procedure for identifying the bacteria; however, the bacteria can be identified through blood cultures, in which they usually show resistance to penicillin and aminoglycosides (1, 7-9).

Treatment is prolonged and includes two phases: the first is known as intensive treatment using intravenous antimicrobial therapy for 10-14 days, and the second is an eradication phase with oral antimicrobial treatment for three to six months. In most cases it is susceptible to beta lactam antibiotics like ceftazidime, meropenem, imipenem and amoxicillin clavulanate, with one of these being used in the first phase, and bactericidal treatment with trimethoprim/sulfamethoxazole, doxycycline (together or alone) and chloramphenicol being recommended for the second phase (1, 4). We present this case because our patient exhibited nonspecific signs and bacteremia and recovered completely without incident with a timely

diagnosis and appropriate treatment. We would like to emphasize the importance of a high degree of suspicion for diagnosing melioidosis. Adequate microbiological knowledge and the ability to correctly identify the organism is extremely important to avoid incorrect diagnoses and undue morbidity and mortality, as it is an infrequent infection. Thus, while there are many tests for diagnosing melioidosis, you cannot rely on a single test, due to the variety of presentations and studies showing that blood tests have low sensitivity and specificity. Therefore, more research is needed on this topic.

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