Pott's disease in a patient with muscle weakness

Diego Augusto Moreno-Díaz, Daniela Ramírez-Hernández, Daniel Escobar-Báez • Bucaramanga (Colombia)

DOI: https://doi.org/10.36104/amc.2024.3676

Abstract

Spinal tuberculosis, also known as Pott's disease, is an extrapulmonary form of the disease that affects the vertebrae. We present the case of an 84-year-old male patient with a one-month history of progressive loss of strength in his lower extremities and lumbar pain which prevented him from walking. On a review of systems, he reported long-term chronic respiratory symptoms.

During his hospitalization, he was diagnosed with active pulmonary tuberculosis and, subsequently, after a long hospital stay, Pott's disease was diagnosed through magnetic resonance studies and a bone biopsy. In conclusion, a complete clinical history coupled with the appropriate tests can lead to timely diagnosis and treatment, reducing morbidity and mortality. **(Acta Med Colomb 2024; 49. DOI: https://doi.org/10.36104/amc.2024.3676).**

Keywords: *spinal tuberculosis, extrapulmonary tuberculosis, paraparesis, lumbar pain, pulmonary tuberculosis*.

Dr. Diego Augusto Moreno-Díaz: Residente de Medicina Interna Universidad Industrial de Santander; Dra. Daniela Ramírez-Hernández**:** Médica. Hospital Universitario de Santander; Dr. Daniel Escobar-Báez: Universidad Industrial de Santander. Bucaramanga (Colombia).
Correspondencia: Dr. Daniel Escobar-Báez. Bucaramanga (Colombia).
E-mail: descobarbaez@gmail.com
Received: 21/VIII/2024 Accepted: 16/IX/2024

Introduction

Pulmonary tuberculosis is a mainly respiratory disease. However, in high prevalence regions like ours, extrapulmonary forms may occur. In 2022, 17,431 cases were recorded in Colombia, 13.3% of which were extrapulmonary forms, the most frequent being pleural, meningeal, lymph node and peritoneal (1). The least common form is reported to be bone tuberculosis, which affects less than 10% of patients with extrapulmonary tuberculosis. Of the cases affecting bone tissue, approximately half involve the spine (2), which is also known as Pott's disease (3).

The most commonly affected vertebrae are those in the thoracolumbar segment (4), probably due to the coexistence of pulmonary tuberculosis as the source of dissemination (5). While insidious and nonspecific signs and symptoms have been reported in Pott's disease, ranging from constitutional symptoms like weight loss to anorexia, fever and night sweats (6, 7), lumbar pain has been reported in up to 70% (6) and neurological abnormalities occur in 23-76% and include paresthesia and muscle weakness (6).

An accurate diagnosis is vitally important, because the number of doses of antitubercular drugs increases to 280 doses, compared to the 112 doses traditionally used for pulmonary tuberculosis (8). The diagnosis is based on clinical suspicion, along with imaging and microbiological criteria. Among the imaging tests, magnetic resonance imaging of the spine has the highest sensitivity and specificity (100% sensitivity and 88.2% specificity) (3), and contrast media are useful for differentiating between infected and uninfected tissue (9). The gold standard for diagnosis is a culture of the sample obtained through biopsy and aspiration (6).

In this case, there was a late diagnosis, as other differential diagnoses were considered and the biopsy for culture was significantly delayed, which led to a longer hospitalization, delayed treatment and healthcare-related complications.

Case presentation

This was an 84-year-old male patient with a history of ischemic stroke and Parkinson's disease. He had a one-month history of progressive loss of strength in his lower limbs, which prevented him from walking, along with lumbar pain, bilateral lower limb paresthesia (predominantly on the right), and unquantified fevers in the week prior to consult. A review of systems documented chronic respiratory symptoms.

On physical exam, he had mildly reduced strength (4 out of 5) on the right side of his body, numbness in the right leg beginning at L1, positive Lasegue's sign in the right leg, negative Babinski bilaterally, and areflexia and rigidity in both legs; his left-sided body strength was normal. A simple head computed tomography (CT) ruled out a new ischemic or hemorrhagic event as the cause of his symptoms. A chest x-ray was ordered, which showed micronodular opacities, and was complemented with a high-resolution chest CT which reported diffuse bilateral centrilobular nodules, predominantly in the upper lobes, with a micronodular pattern highly suggestive of pulmonary tuberculosis. A GenXpert sputum test confirmed the diagnosis, and treatment was started with the four-drug regimen.

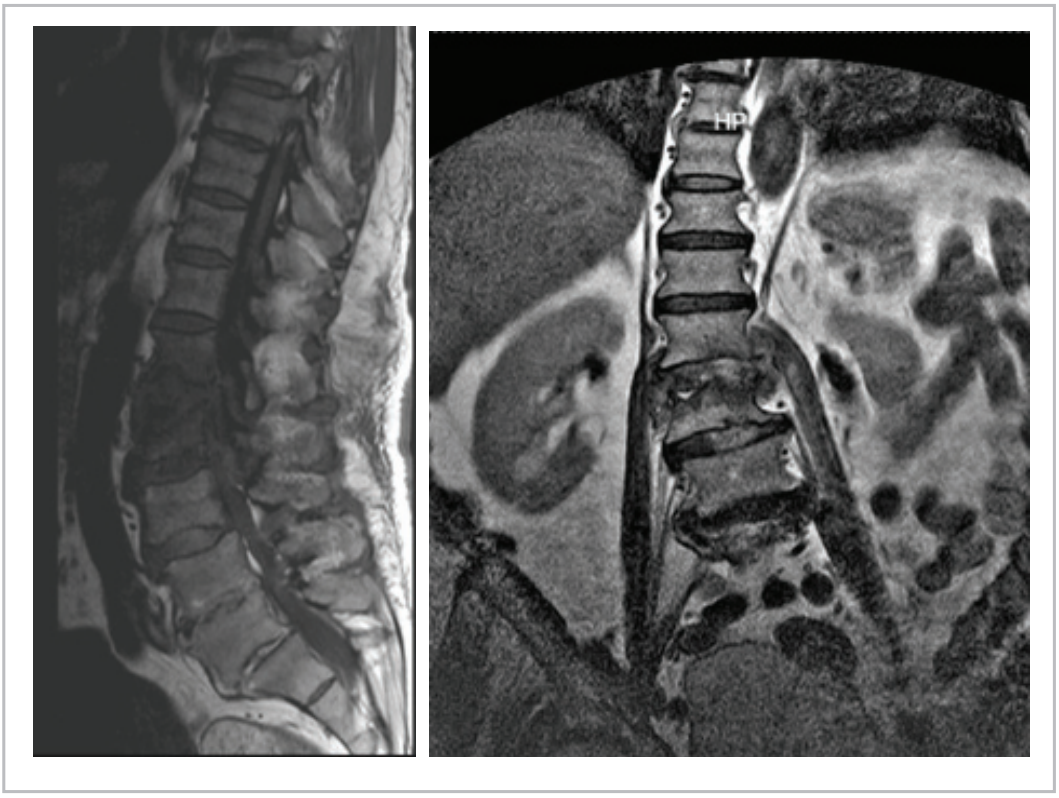

Figure 1. *Magnetic resonance imaging of the lumbosacral spine with contrast. Longitudinal and coronal section. Source: patient.*

A lumbar puncture showed high cerebrospinal fluid (CSF) protein and low CSF glucose, without pleocytosis, which was interpreted as albuminocytologic dissociation. Although Guillain Barré syndrome was considered within the differential diagnosis due to the time elapsed with symptoms, it was ruled out by the neurology team, who considered a possible diagnosis of meningeal tuberculosis. Cerebrospinal fluid tests were done using GenXpert and mycobacterial cultures, which were negative, ruling out this possible diagnosis. Chronic inflammatory demyelinating polyneuropathy was also proposed; however, it was thought to be unlikely due to the severe muscle atrophy found on electromyography and nerve conduction tests. Monoclonal gammopathy was also ruled out by a normal urinary kappa immunoglobulin test.

Magnetic resonance imaging of the lumbosacral spine with contrast showed spondylotic changes with reduced height and signal intensity at L4-L5 and T11-T12, along with spondylodiscitis changes in L2-L3 (Figure 1). Due to the finding of pulmonary tuberculosis and the lumbar changes, Pott's disease was proposed as the primary diagnostic suspicion, and therefore the infectious disease service ordered a biopsy of the affected levels to confirm the diagnosis.

After a long hospital stay, the pathology report indicated chronic granulomatous inflammation and scant, fragmented acid-alcohol-fast bacilli, confirming the diagnosis of Pott's disease (Figure 2). During his hospital stay, the patient

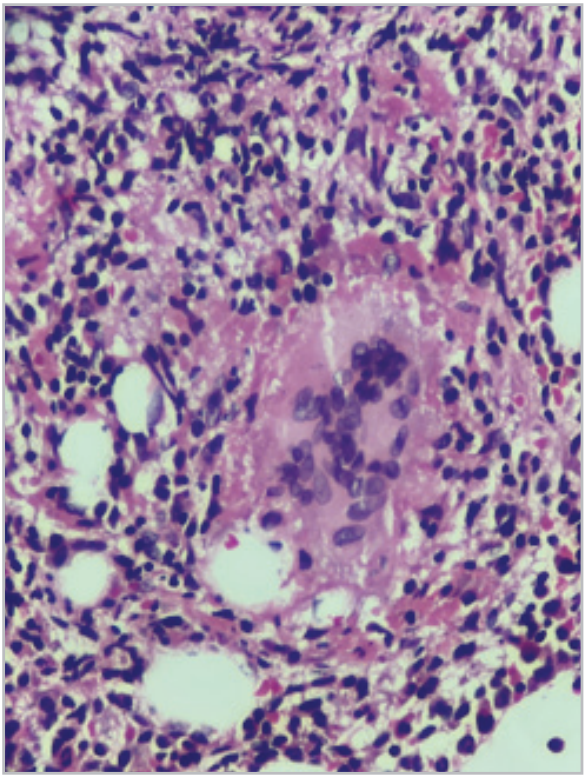

Figure 2. *A granuloma in the bone pathology sample. Source: patient.*

developed hospital-acquired pneumonia, with clinically significant deterioration, which ultimately culminated in his death two months after being admitted to the institution.

Discussion

Low-back pain is an extremely common complaint in the emergency room, and spinal magnetic resonance often helps establish a suspicion of Pott's disease. In a study describing the clinical and epidemiological characteristics of patients with Pott's disease in Brazil, the most common symptom was low-back pain, present in up to 84% of cases (9). Another published case reported gait abnormalities and exacerbation of chronic low-back pain (10). Similarly, a case report in Pakistan presented a 55-year-old patient who also had low-back pain along with decreased leg strength which progressed to paraplegia. This patient improved after beginning anti-tubercular treatment, allowing him to walk again (3). In another case, a 41-year-old patient had low-back pain that worsened when lying supine (11).

In our case, the initial differential diagnosis did not consider Pott's disease, which led to multiple unnecessary tests that prolonged the hospital stay, despite signs and symptoms that were similar to those reported in the rest of the cases in the literature. This case helps establish spinal tuberculosis as a possibility in cases of chronic low-back pain associated with paresthesia and paraparesis.

The current case illustrates the need to conduct more robust studies on Pott's disease, to help develop and implement evidence-based clinical practice guidelines. The goal of these guidelines would be to foster suspicion and improve the diagnostic ability of other healthcare professionals in areas with a high prevalence of tuberculosis. Furthermore, cases like this one provide insight to continue documenting Pott's disease findings in other areas like the development of biomarkers or laboratory tests that correlate strongly with this disease, allowing a faster initial diagnostic approach and preventing negative outcomes.

Acknowledgements

To the patient's family, for allowing the case to be shared with the scientific community.

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