

## CASE REPORT

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# Pott's disease: A wake-up call for an underestimated diagnosis

Jacqueline Fernandes, Janie Fernandes, Leandro Mignot, Felipe Toledo, Roberto Falci, Antônio Marcos da Silva Catharino

## ABSTRACT

**Introduction:** Tuberculosis continues to be a major cause of death worldwide. The bacillus responsible for this condition, *Mycobacterium tuberculosis*, typically affects the lungs, but can also affect other regions, in which case it is called extrapulmonary tuberculosis. Osteoarticular manifestations represent the third most common form of this type of tuberculosis. The axial skeleton stands out as the most affected region; this is called tuberculous spondylodiscitis or Pott's disease.

**Case Report:** A 26-year-old male patient, living in Queimados, an informal worker, reported that about one month ago he presented weight loss of 7 kg, low back pain without irradiation (intensity 10/10), and a dry cough. One week ago, he started having chills with changes in the cough pattern, which became productive. Laboratory tests and serologies were unaltered. Alcohol-Acid Resistant Bacilli (BAAR): Positive +++ in 200 observed fields. Rapid molecular test (TRM): Detectable.

**Conclusion:** To a great extent, the incidence of tuberculosis has been maintained by immunosuppressive diseases, such as human immunodeficiency virus (HIV). In contrast, tuberculous spondylodiscitis remains an underdiagnosed condition in most services, and its management is still under discussion.

**Keywords:** Pott's disease, Pott's paraplegia, Spinal cord compression, Spinal tuberculosis

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## INTRODUCTION

Tuberculosis continues to be a major cause of death worldwide. The bacillus responsible for this condition, *Mycobacterium tuberculosis*, typically affects the lungs, but can also affect other regions, in which case it is called extrapulmonary tuberculosis [1].

Osteoarticular manifestations represent the third most common form of this type of tuberculosis, accounting for about 1–5% of all cases. The axial skeleton stands out as the most affected region, for which it is called tuberculous spondylodiscitis or Pott's disease, most frequently in the lower thoracic and lumbar regions of the spine, followed by the cervical region [2].

With all the advances in technology and research, tuberculous spondylodiscitis remains a major diagnostic challenge, since it requires high clinical suspicion. Despite being a condition with low mortality, it is related to significant morbidity. Moreover, a late diagnosis can lead to significant skeletal deformities and irreversible neurological complications [3, 4].

Therefore, the aim of the present study is to remember a condition that, although rare, causes significant physical and psychological detriment. The present case deals with

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a 26-year-old patient with tuberculous spondylodiscitis, a condition that is often confused or little known by health professionals. This hinders timely diagnosis and leads to a disproportionate expenditure of health resources by not establishing effective therapies, or sometimes by not addressing the problem at all.

## CASE REPORT

A 26-year-old male patient, living in Queimados, an informal worker, reported that about one month ago he presented weight loss of 7 kg, low back pain without irradiation (intensity 10/10), and a dry cough. One week ago, he started having chills with changes in the cough pattern, which became productive. He was an alcoholic, smoker, and user of illicit drugs. He lived in a house with unfavorable hygienic-sanitary conditions. He denied comorbidities and allergies. He had no previous history of tuberculosis or contact with people with suspected or diagnosed tuberculosis. On physical examination, the patient was in a regular general state, lucid, oriented, acyanotic, anicteric, febrile, mild dyspnea on room air, eucardic, hypochlorized 1+/4+, and hydrated. Cardiovascular system: regular heartbeat with two clicks, normal heart sounds without murmurs. Respiratory system: diminished vesicular murmur at the right apex, sparse crackling at bilateral bases. Abdomen: Flaccid, peristaltic, painless on palpation, absence of visceromegaly. Lower limbs without edema, no signs of deep vein thrombosis (DVT), pulses present bilaterally. Laboratory exams and serologies without alterations. Measure of sputum bacillary burden—Alcohol-Acid Resistant Bacilli (BAAR): Positive +++ in 200 observed fields (Figure 1). Rapid molecular test for tuberculosis (TRM-TB): Detectable. Treatment with Rifampicin, Isoniazid, Pyrazinamide, and Ethambutol was instituted, with clinical and laboratory improvement.



Figure 1: Computed tomography of the lumbar spine with changes suggestive of spondylodiscitis.

## DISCUSSION

Clinically, Pott's disease typically manifests as localized pain that gradually increases over weeks and even months, almost always associated with muscle stiffness. Neurological symptoms are the second most present, and in less than half of the cases constitutional symptoms such as weight loss or fever may be present [5].

Some risk factors are closely related to the development of this condition, such as HIV infection, diabetes mellitus, chronic renal injury, prolonged use of corticosteroids, intravenous drug use, or alcoholism [6]. It is worth noting how nonspecific the clinical manifestations are, as well as the insidious onset, which may lead to a delay in diagnosis and, consequently, a worse prognosis [7].

The most important complication is spinal cord compression in the active phase of the infection, which can lead to paraplegia. Topographically, this condition usually begins in the anterior portion of the body of the vertebra, and as a consequence, abscess formation is possible due to the inflammatory process and the necrosis generated [8]. These factors are the reason for the spinal cord compression and focal demyelination of the ascending and descending tracts [9].

Pott's disease is the most common form of extrapulmonary tuberculosis. About 2% of patients with pulmonary tuberculosis will present with tuberculous spondylodiscitis, and this condition is responsible for approximately 25% of cases of extra-dural abscess and many cases of vertebral osteomyelitis [10].

As for the pathophysiological issues, it is possible to observe a probable dissemination of the primary focus, usually pulmonary, to the extra-dural space of the spine, through the vertebral venous plexus. The disease patterns are divided into: paradiscal pattern (corresponding to more than 50% of cases), anterior granuloma pattern, appendiceal type lesions, and central lesions [11].

The diagnosis of suspicion is made based on clinical presentation and imaging findings. Radiography of the spine may show no changes at an early stage of the disease [12]. Other imaging methods, such as computed tomography (CT) and magnetic resonance imaging (MRI), are important to characterize the lesion, as well as guide biopsy, evaluate response to treatment and likely complications. Such methods can show the extent of bone destruction and the tissue surrounding the compromised region [13].

Magnetic resonance imaging stands out for its many advantages, such as the possibility of showing the extent of the deformity and the consequent spinal cord compression, which is why, at first, lumbar puncture for cerebrospinal fluid (CSF) examination is contraindicated [14].

Computed tomography is inferior to RN with respect to specificity and sensitivity for the diagnosis of spondylodiscitis. However, CT provides a detailed image of the affected bone area. With the use of contrast, paravertebral abscesses can be seen more clearly. In the

early phase of infection, there may be effacement of the paravertebral fat and hypodensity of the intervertebral disc. In a later stage, platform erosions and bone destruction of the vertebral bodies are observed [15].

It is worth mentioning the main differential diagnoses, an important issue in order not to condition a delay in diagnosis and consequently a worse prognosis: *Candida* sp., *Torulopsis* sp., *Aspergillus* sp., *Coccidioides* sp., *Blastomyces* sp., *Actinomyces* sp., *Nocardia* sp., atypical mycobacteria, Brucella, non-venereal Treponema, and *Echinococcus* sp. Diagnostic confirmation is made by percutaneous or open aspiration with biopsy, and culture of the infected material [16].

Treatment is based on antibacterials, and surgical treatment is possible in certain situations. The goal is not only to treat the infection, but also to limit the onset of complications. This is done with Rifampicin, Isoniazid, Pyrazinamide, and Ethambutol for two months as an attack phase and Rifampicin and Isoniazid for ten months, constituting the maintenance phase, but the optimal duration has not yet been established [17].

## CONCLUSION

To a great extent, the incidence of tuberculosis has been maintained by immunosuppressive diseases, such as HIV. In contrast, tuberculous spondylodiscitis remains an underdiagnosed condition in most services, and its management is still under discussion. This is because there is little recent impact research on the subject, which makes the diagnosis late, when the patient already has complications that are difficult to reverse. Once diagnosed, the physician has a crucial role in the follow-up of these patients with regard to adherence to prolonged treatment and management of disease complications in order to achieve a better prognosis.

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## Author Contributions

Jacqueline Fernandes – Conception of the work, Design of the work, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Janie Fernandes – Conception of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

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Felipe Toledo – Conception of the work, Design of the work, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

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Antônio Marcos da Silva Catharino – Conception of the work, Design of the work, Interpretation of data, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that

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Written informed consent was obtained from the patient for publication of this article.

### **Conflict of Interest**

Authors declare no conflict of interest.

### **Data Availability**

All relevant data are within the paper and its Supporting Information files.

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