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CASE REPORT

Pott's Disease: A Case Report

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Abstract

Pott's disease is the term used to define infection of the spine by *Mycobacterium tuberculosis*. Galen was the first major scholar to correlate spinal deformity with infection. In Pediatrics, spinal infections are uncommon and often there is a delay in diagnosis because it is a chronic disease, with often non-specific symptoms and difficult diagnosis par excellence, often due to conditions inherent to the disease itself, and can progress with serious clinical repercussions such as bone deformities as well as permanent lesions of the peripheral nervous system. The objective of this study was to describe a case of osteoarticular tuberculosis in a 14-year-old boy with a complaint that four months later he had a low back pain and difficulty walking, with progressive paraparesis in the lower limbs requiring wheelchairs for locomotion. Strong reactive tuberculin test, non-reactive anti-HIV, culture for positive BK in aspirated thoracic vertebra (D6), with comminuted fracture associated with voluminous paravertebral mass with attenuation of soft tissues with aspect suggesting infectious spondylodiscitis with spindle paravertebral abscess. She started treatment with rifampicin, isoniazid, pyrazinamide and etambutol. Currently the patient is without pain complaints, wandering with the aid of crutches. Due to the fact that there are few reported cases of Pott's disease in the literature, due to its prognosis, as well as the difficulty in establishing the diagnosis in an early manner, imposing itself as an important differential diagnosis of other diseases, was what motivated the presentation of the case.

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INTRODUCTION

Tuberculosis is a highly prevalent condition worldwide, an endemic disease in developing nations, and a relevant public health issue¹. According to the World Health Organization, about a third of the world's population is infected with *Mycobacterium tuberculosis*². Extrapulmonary involvement occurs more frequently by lymphohematogenous dissemination of the bacilli.

Hippocrates was a precursor at describing the association between spinal disorders and infection. Galen subsequently correlated spinal deformity with infection³. Pott's disease was described in the 18th century by British surgeon Percivall Pott, who saw a patient with the triad abscess, paraplegia, and gibbous deformity in a context of spinal tuberculosis, and showed the value of draining cold abscesses to address paraplegia caused by vertebral injury and spinal tuberculosis⁴. The condition was named after the man who described it⁵.

The few cases described in the literature and the difficulties inherent to establishing a diagnosis of early-stage Pott's disease led to the presentation of this case.

CASE REPORT

A black male student aged 14 years and weighing 60 kg was hospitalized for lower back pain and trouble walking persisting for four months. He gradually progressed to paraparesis and needed a wheelchair to move around. Bacilloscopy was negative, his tuberculin skin test was strongly positive (> 15 mm), and serology tests for HIV I and II were negative. Nuclear magnetic resonance imaging revealed a voluminous paravertebral mass extending from D4 to D7 (Figure 1) and a wedge-shaped anterior comminuted fracture (D6) leading to kyphosis (Figure 2). The patient underwent a biopsy in his dorsal spine. Aspirate from D6 was positive for *Mycobacterium tuberculosis*. He was started on drug therapy scheme I - 2RHZE/4RH (two months of rifampicin, isoniazid, pyrazinamide, and ethambutol + four months of rifampicin and isoniazid). He underwent a posterior thoracolumbar fusion to the sacrum on day 50 of hospitalization - day 18 of drug therapy scheme I. The patient is still being followed after 229 days of treatment. He is now pain-free and can walk with the help of crutches.

DISCUSSION

Spinal tuberculosis may affect individuals of all ages, although in developing nations it occurs more frequently within the first decade of life and into the teen years⁶, and accounts for at least 10% of the cases of extrapulmonary involvement⁷. It generally starts after lung infection by *Mycobacterium tuberculosis* and almost always a year after the first infection via lymphohematogenous dissemination of the bacilli. Vertebral disorders are usually picked up in imaging tests five months after bone involvement by the bacilli. The resulting injuries may produce kyphosis, the primary culprit of the development of gibbous deformity in children.



Figure 1. Voluminous paravertebral mass extending from D4 to D7.

Individuals with Pott's disease often remain undiagnosed or are diagnosed in the later stages of the condition, when severe complications have set in to significantly affect their quality of life, as is the case of patients with paraplegia secondary to spinal cord compression caused by the presence of active disease⁸. It is an indolent disease that has been neglected by research and therapy development, possibly for affecting poorer individuals⁹. The more frequently reported sequelae include paraplegia or tetraplegia, neurologic deficit, and atlantoaxial dissociation in cases of vertebral involvement and permanent spinal deformity¹⁰.

Magnetic resonance imaging is a great method to show the extent of deformity and the ensuing compression of the spinal cord⁸. It is a valuable diagnostic method for patients with Pott's disease on account of its ability to differentiate the tissue compressing nerve segments from sequestered disc, bone tissue, or abscess¹¹.

Therapy with rifampicin + isoniazid + pyrazinamide + ethambutol for two months followed by rifampicin + isoniazid for a maximum 6, 9, 12, or 18 months is the scheme most often prescribed to treat individuals with spinal tuberculosis¹².

Acute tuberculous spondylitis is treated with surgery when patients present with progressive spinal deformity, progressive neurologic deficit, pain caused by an abscess or



Figure 2. Wedge-shaped anterior comminuted fracture on D6

spinal instability, failed conservative management, or uncertain diagnosis¹³.

A determining factor in replacing drug therapy alone for drug therapy and surgery is the onset of neurologic symptoms. Some surgeons refer patients with kyphosis greater than 30° to surgery¹⁴.

CONCLUSION

Pediatric cases of spinal infection are uncommon and often the object of delayed diagnosis, since the spine cannot be easily palpated and symptoms are nonspecific. Ignoring Pott's disease as a diagnostic possibility may place patients at risk of enduring severe clinical repercussions such as bone deformity and permanent injury to peripheral nerves.

Pott's disease progresses slowly and, therefore, must be considered in the differential diagnosis of individuals with a history of exposure to patients with pulmonary tuberculosis, and presenting with neurologic symptoms such as lower back pain, *paraparesthesia*, paraparesis, and difficulty walking. The risk of severe neurologic sequelae is reduced when early diagnosis and effective treatment are in place.

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