CASO CLÍNICO / *CLINICAL CASE*

Espondilodiscite tuberculosa: um caso atípico de delirium hipoativo

Tuberculous spondylodiscitis: an unusual cause of hypoactive delirium

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/ Resumo

Introdução: um *delirium* hipoativo é uma causa frequente de vinda ao serviço de urgência (SU) e está habitualmente associado a infeções, principalmente nos idosos. As doenças crónicas e indolentes devem ser sempre consideradas neste grupo de doentes.

Caso clínico: uma mulher caucasiana de 80 anos recorreu ao SU com quadro de febre e alteração do estado de consciência com duração de três semanas associado a um quadro de seis meses de dor lombar, astenia e anorexia. Após avaliação inicial, a doente foi internada na enfermaria com diagnóstico de pielonefrite não complicada. Contudo, a doente apresentou agravamento clínico apesar da antibioterapia dirigida. Após exclusão de infeção do sistema nervoso central, foi realizada uma tomografia computorizada toraco-abdomino-pélvica (com avaliação da coluna vertebral), tendo revelado uma alteração estrutural dos corpos vertebrais de D12 e L1, sugestiva de espondilodiscite tuberculosa. Após confirmação de diagnóstico por biópsia óssea, a doente iniciou tratamento antituberculoso com melhoria rápida do quadro.

Conclusão: uma resposta desfavorável de um *delirium* hipoativo deve suscitar uma investigação aprofundada de forma a encontrar o fator etiológico. O diagnóstico de espondilodiscite tuberculosa pode ser desafiante, pois a apresentação inicial costuma cursar com dor lombar, que é normalmente associada a patologia osteoarticular degenerativa. É importante considerar esta patologia na presença de metástases espinhais ou fraturas patológicas.

Palavras-chave: Tuberculose; tuberculose extrapulmonar; Espondilodiscite tuberculosa; delirium; "Mal de Pott"

/ **Abstract**

Introduction: *hypoactive* **delirium** *is a frequent cause of emergent department (ER) visits and it's commonly associated with infections, especially in the elderly. Chronic, indolent infections should always be considered in this group of patients.*
Case report*: an 80-year-old Caucasian woman presented in the ER with fever and alteration of level of consciousness for the last three weeks associated with a six-month history of lumbar pain, fatigue and anorexia. After the initial diagnostic evaluation, the patient was admitted to the ward with the diagnosis of uncomplicated pyelonephritis. The clinic condition continues worsening even with pathogen directed therapy. After excluding infection of the central nervous system, a thoracoabdominal-pelvic computed tomography (CT) with spinal cord extension was performed, revealing structural alteration of vertebral bodies D12 and L1 suggestive of tuberculosis spondylodiscitis. After the result of the PCR of the bone biopsy, the patient started treatment for 12 months with marked improvement.*
Conclusion: *an unfavorable response of an hypoactive delirium, should prompt further investigation in order to find the real cause. The diagnosis of* **tuberculous spondylodiscitis** *could be challenging since the common presentation is back pain that could be misdiagnosed as degenerative changes of the spine. It is important to consider this differential diagnosis in the presence of spinal metastasis or pathologic fractures.*

Keywords: *Tuberculosis; extrapulmonary tuberculosis; spondylodiscitis tuberculosis; delirium; Pott's disease*

/ Case Description

An 80-year-old Caucasian woman, with family history of pulmonary tuberculosis, presented in the ER with a six-month history of lumbar pain associated with fatigue and anorexia, with worsening in the previous three months. She also had a fever associated with an alteration of level of consciousness (a hypoactive state) for the last three weeks. On admission she was drowsy but easily aroused, oriented in person and space, but not in time. She was febrile with tympanic temperature 38 ºCelsius, hemodynamically stable, eupneic with peripheric saturation of 95% on room air. On pulmonary examination, fine crackles were audible in the lower zone of lungs, without other signs of hypervolemia. On neurologic exam, pupils were reactive to light, without deviation of the eyes and no alteration on cranial nerves. Muscle strength and reflexes were preserved. She presented with slight axial rigidity, without pain, and a fine tremor on the right arm and leg. The rest evaluation was normal. Fundoscopy was not performed. The diagnostic investigation showed lymphopenia (520 cels/µL), elevated C-reactive protein (84.3 g/dL); anaemia (haemoglobin 10.5g/dL) and leukocyturia and positive nitrites in the urine sample. The cranioencephalic CT didn't show signs of new-onset lesions or infectious process. The patient was admitted to the ward with the diagnosis of uncomplicated pyelonephritis and started antibiotic therapy with amoxicillin/acid clavulanic. The urine culture identified a *Raoultella ornithinolytica*, sensitive to the antibiotic prescribed.

In the next days, the symptoms remained unchanged, with worsening of the delirium. A lumbar puncture was performed, with negative gram stain and negative acid-fast bacilli (AFB) smear, normal levels of adenosine deaminase (ADA) and glucose, but with elevated proteins (1.42 g/dL) and 46 leukocytes/uL (with 42 mononuclear cells). A cranial magnetic resonance was performed and excluded any focal lesions or an inflammatory process.

To exclude other sources of infection a thoracoabdominal-pelvic CT (with spinal cord extension) was ordered, showing structural alteration of vertebral bodies D12 and L1, with predominant lytic destruction, collapsing and sinking of L1, associated with a mass of soft tissues that extends to the paravertebral soft tissues (Fig. 1-2). These findings raised the possibility of a tuberculous spondylodiscitis. There were no signs of pulmonary involvement on chest CT and a bronchoalveolar lavage was performed that was negative for *Mycobacterium* infection (both molecular and culture tests). A magnetic resonance imaging (MRI) of the lesion confirmed the previous findings (Fig. 3). A bone tissue biopsy was later performed with the presence of M. *tuberculosis* complex by molecular and culture methods.

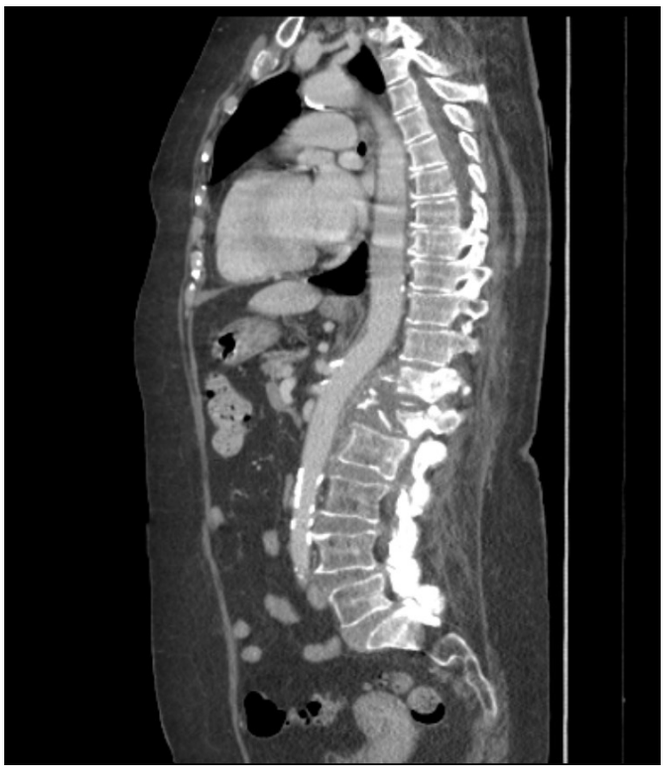

Figure 1 – Sagital view of thoracoabdominal-pelvic CT showing structural alteration of vertebral bodies D12 and L1, with predominant lytic destruction, collapsing and sinking of L1, associated with a mass of soft tissues that extends to the paravertebral soft tissues

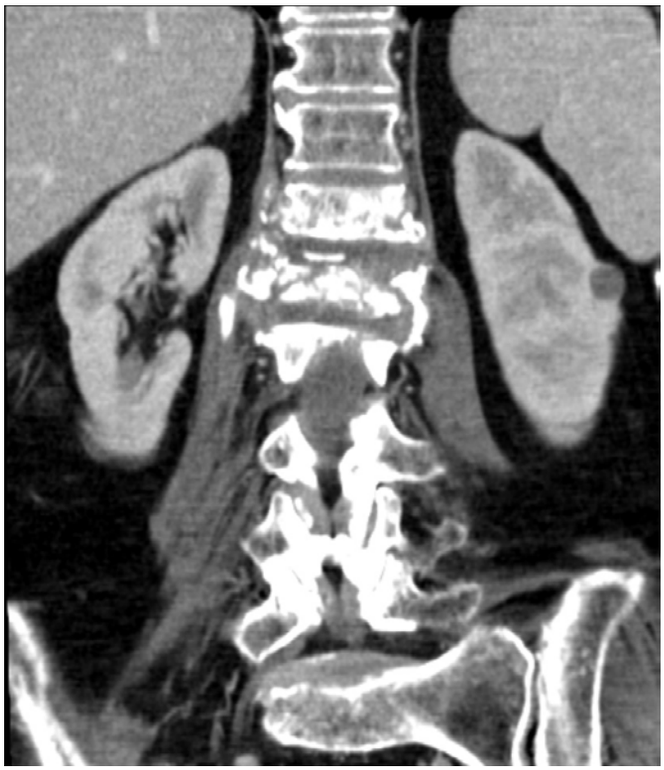

Figure 2 – Coronal view of thoracoabdominal-pelvic CT showing structural alteration of vertebral bodies D12 and L1, with predominant lytic destruction

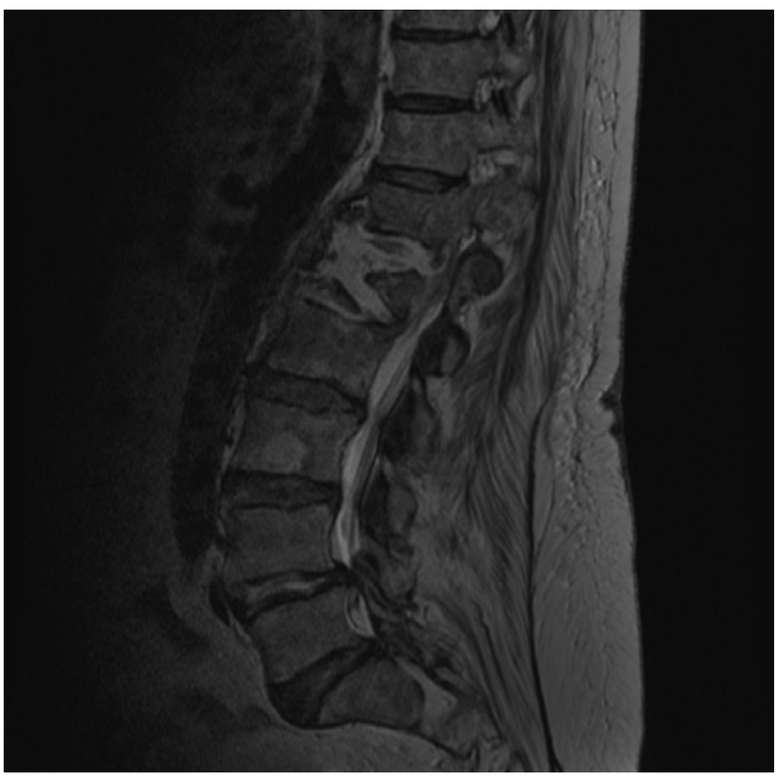

Figure 3 – Magnetic Resonance (MR) of the thoracolumbar spine showing tuberculous spondylodiscitis lesions

After the result of the PCR of the bone biopsy, the patient started treatment with rifampicin, isoniazid, pyrazinamide and ethambutol for two months and then continued with rifampicin and isoniazid for 12 months. The patient showed marked improvement of the mental status after a few weeks, being able to start the rehabilitation in the ward, and later discharged to a rehabilitation center.

/ Discussion

Tuberculous spondylodiscitis (TS), also known as Pott's disease, was first described in 1779 by Percival Pott. Studies suggest that tuberculosis is still a major problem of public health for developing countries but also in the western world. [1,2]

In 2017, 55 337 cases of tuberculosis (TB) were reported in the 31 European Union and European Economic Area (EU/EEA) countries, resulting in a notification rate of 10.7 per 100 000 population in the EU/EEA. In Portugal, 1800 cases were reported, resulting in a notification rate of 17.5 per 100 000 population, a little above the European data. Extrapulmonary TB (EPTB) was notified on average for 17% of all incident TB cases in the EU/EEA.[3,4] Skeletal TB (STB) contributes to around 10% of EPTB and the most common site is spinal TB (around half of the cases), specific the thoracolumbar junction is the most affected region.[2]

TB is caused by *Mycobacterium tuberculosis* complex. Spinal infection is caused by hematogenous dissemination of the bacteria, meaning that it is always a secondary infection. In a significant percentage of TS cases there is no evidence of primary infection. It results in a granulomatous inflammation characterized by lymphocytic infiltration and epithelioid cells, which leads to caseating necrosis of the affected tissues. With progressive destruction of the vertebral body, deformation of the spine could cause fractures. [1-3]

Spinal TB usually is insidious in onset and the disease progresses at a slow pace. This makes the early diagnosis a challenge, which can cause serious complications as described in this case. In the elderly diagnosis of spinal TB is even more difficult since the common presentation is back pain that could be easily misdiagnosed as degenerative changes of the spine. It is important to consider chronic and indolent infections in this group of patients and when spinal lesions are found it should always be part of the differential diagnosis alongside with of spinal metastasis or pathologic fractures. [2,3,5]

The identification of *Mycobacterium* in culture specimens obtained from the infected tissue is the gold standard method and the most single test confirmatory of spinal TB. Other indirect tests could be used for the diagnosis of TB infection like tuberculin skin test and interferon gamma-release assays (IGRA), but it doesn't differentiate latent from active infection. Laboratory studies can suggest chronic infection (anaemia, C reactive protein elevated). Imaging studies are essential for diagnosis and management of spinal TB and could allow the differential diagnosis by assessing features that are characteristic – soft tissue mass with calcification or bony fragments, vertebral collapse, presence of large paravertebral mass or abscesses. The MRI is the exam of choice, due to its capability to detect lesions in the epidural space and spinal cord.[3,5]

Spinal TB is a medical condition, treatable with a regiment of antibiotics, except when there are surgical complications. Fortunately, in this case, there was no spinal cord compression or spinal instability that implicated surgical intervention. The most common scheme is to use rifampicin, isoniazid, ethambutol and pyrazinamide for an initial two months followed by a maintenance phase of rifampicin and isoniazid for six, nine, 12 or 18 months. The literature suggests that the shorter courses (nine or 12-months) have the same efficacy when compare to 18 months of treatment, however a recurrence has been described in the six-months regime. Recovery is primarily influenced by the motor deficit and deformity, especially when the diagnosis is delayed. [5]

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