Case 1346

Brucellar spinal epidural abscess with no concomitant spondylodiscitis

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Patient: 35 years, male

Clinical History:
The patient presented with progressive low back pain, difficulty with walking, fatigue and a 10-day history of fever. Physical examination revealed lumbar spine tenderness, a positive straight leg-raising test at 45° on the right side (Lasegue sign) and ipsilateral absence of the Achilles tendon reflex. No motor loss or hypaesthesia was found.

Imaging Findings:
The patient was a 35-year-old stockbreeder, who presented with progressive low back pain, difficulty with walking, fatigue and a ten days history of fever. His past clinical history was unremarkable. Physical examination revealed lumbar spine tenderness, a positive straight leg-raising test at 45° on the right side (Lasegue sign) and ipsilateral absence of the Achilles tendon reflex. No motor loss or hypaesthesia were found. Lumbar spine plain films were negative. Lumbar spine CT was performed. A circumscribed soft tissue mass in the right anterolateral epidural space was observed at the L5-S1 disk space level, causing mild compression of the dural sac (fig. 1). The mass extended inferiorly along the descending S1 nerve root (fig. 2a). No bone abnormality was demonstrated (fig. 2b). Sequestered discal fragment was suspected and the patient was referred for MRI examination. Epidural soft tissue was shown behind the vertebral bodies L5-S1. On T1W images the tissue appeared hypointense and on T2W images nonhomogenously hyperintense (fig. 3a). In addition, it showed intense, slightly inhomogeneous, enhancement after contrast administration (fig. 3b). Vertebral bodies and disks showed normal morphology and signal intensity. The findings suggested the diagnosis of an epidural phlegmonous process without evidence of spondylodiscitis. Laboratory tests revealed a high brucella serum agglutination titre of 1:320, which confirmed the origin of the infection, despite the negative blood cultures. The patient was treated with antibrucellar chemotherapy and both clinical and radiological regression of the disease was noticed.

Discussion:
Brucellosis is a zoonosis which is endemic in the Mediterranean Basin, the Arabian Peninsula and South America.(1) It is transmitted to humans either by direct contact or by the ingestion of unpasteurized milk and dairy products.(1,3) After phagocytosis, the bacilli multiply intracellularly and then spread, following the blood stream, in organs rich in reticuloendothelial tissue. Bone involvement is noticed in about 10% of cases, with the spine, and especially the lumboSacral region, most commonly affected. Usually spinal infection presents as spondylodiscitis with no specific clinical or radiologic findings.(3) Differential diagnosis from other conditions such as tuberculosis, pyogenic osteomyelitis, metastatic lesions, multiple or solitary myelomas is needed. Clinical history, taking into
account both occupational and endemic risk factors, can suggest the diagnosis of brucellosis, but confirmation can only be made following certain laboratory findings (positive blood/tissue cultures, and/or positive, specific for brucella, serological tests). (1) Spinal epidural abscess (SEA) or phlegmone can rarely complicate brucellar spondylodiscitis. However, the presence of a SEA with no evidence of spondylodiscitis, as was the case in our patient, is an extremely rare occurrence. (1) The prevalence of SEA, in general, is increasing especially among patients with diabetes mellitus and immunodepression or among alcoholics and intravenous drug addicts. It can be potentially fatal, so early detection and adequate treatment is essential. (1,2) Its clinical manifestation consists of spinal pain, local tenderness and fever. MRI is the modality of choice, as it is able to reveal not only the epidural abscess, but also the, almost always present, concomitant spondylodiscitis and possible involvement of the spinal cord and nerve roots. (1,2) Despite being a rare entity, in the appropriate clinical setting, it should be in our minds.

**Differential Diagnosis List:** Brucellar spinal epidural abscess

**Final Diagnosis:** Brucellar spinal epidural abscess

**References:**

**Description:** There’s disk bulging without focal protrusion. In the right anterolateral epidural space we notice circumscribed soft tissue mass (arrow). **Origin:**
Figure 2

Description: The soft tissue mass is shown extending inferiorly occupying the right lateral spinal recess along the descending S1 nerve root, causing mild compression of the dural sac (arrow). The surrounding fat planes appear normal. Origin:
Description: Same level with bone window algorithm. Normal osseus structures are revealed. Origin:
Description: Amorphous epidural soft tissue mass behind the L5 and S1 vertebral bodies shows intense, slightly inhomogeneous, enhancement. Origin:
Description: The tissue is hypointense compared to the CSF. No involvement of the disk and the osseus structures is demonstrated. Origin: