



Short Communication

Lumbar epidural brucellar abscess causing nerve root compression

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Objectives: To evaluate the usefulness of MR sequences for the differential diagnosis of spinal brucellar abscesses which mimic lumbar disc herniation.

Methods: We analyzed six patients with brucellar abscesses who had symptoms mimicking lumbar disc herniation. The study group consisted of three women and three men who were 15–67 (mean = 37) years old. Patients were imaged in the axial and sagittal planes with a 1.0-T MR scanner using a spine coil.

Results: The level of abscesses were accurate in 100% (six of six) of patients with MR imaging. MRI examinations revealed an extradural soft tissue mass which were iso- to hypointense compared to spinal cord on T1WI and hyperintense on T2-weighted images. By contrast study, diffuse homogeneous or slightly heterogeneous enhancements were seen.

Conclusion: Lumbar extradural brucellar abscess can have lumbar disc disease symptoms. MRI may non-invasively and rapidly reveal the presence of spinal abscess and degree of extension to the spinal canal. Extradural brucellar abscess should be included in the differential diagnosis of radicular symptoms caused by disc herniation.

Keywords: lumbar; brucellosis; abscess; MRI

Introduction

The spinal form of brucellosis remains a disabling disease in many countries outside North America and northern and central Europe. In our region, South-eastern Anatolia, it is also a common infectious disease. The musculoskeletal system is frequently affected and the spine is the most common site of bone brucellosis. Spinal epidural abscess can be difficult to diagnose because of its nonspecific and variable clinical picture.

We present six patients with spinal epidural abscesses due to brucellosis, and emphasize the crucial role of magnetic resonance imaging (MRI) in making the differential diagnosis.

Three of our patients were male, the others were female. The mean age was 37 years (range 15–67). The location of abscesses were; at L2-3 level in one patient, at L3-4 level in three patients, at L4-5 level in one patient, and at L5-S1 level in the other patient. The initial symptoms were neurological signs in three patients with muscular weakness. In the other patients these symptoms were preceded by fever, sweating, asthenia and myalgia.

MRI examination revealed an extradural soft tissue mass. They were iso- to hypointense compared to spinal cord on T1WI and hyperintense on T2-weighted images. Following contrast administration, diffuse homogeneous or slightly heterogeneous enhancement was seen with thick or thin enhancing surrounding a liquified low signal pus collection (Figure 1).

Brucellar agglutination titers were increased in all patients, but blood and tissue cultures were negative. Histopathological examination revealed a granulomatous pattern consisted with lymphocyte, epithelioid histiocyte and Langhans type giant cell.

The incidence of spinal involvement in brucellosis varies significantly, ranging from 2–50%. The spine is most frequently involved in lumbosacral region, and patients are usually males and over 50 years of age. The mean age of our cases were younger than the cases reported in the literature.¹

Vertebral paraspinal abscesses were seen most frequently in tuberculous spondylitis and were similar to brucellar finding histopathologically. The diagnosis of spinal brucellosis should be confirmed either by positive blood or tissue cultures, or by the most common method, serum agglutination titers. No other laboratory method is known to be pathognomonic.² In all our cases, blood and tissue cultures were negative

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Figure 1 After IV Gd-DTPA administration, abscess formation extending to the spinal canal at L4-5 level

but brucellar agglutination titers were increased and histopathologic findings were useful in some cases.

Direct radiography and CT may not always help in the differential diagnosis of the disease. MRI was the crucial step in making the differential diagnosis. MRI revealed an intact vertebral architecture despite evidence of diffuse vertebral osteomyelitis, disc space involvement, minimal associated paraspinal soft tissue involvement and no gibbous deformity, and supported

the diagnosis of brucellar spondylitis. When compared to other inflammatory conditions there was no characteristic finding, but it was definitely differentiated from lumbar disc herniation.³

The use of intravenous contrast dramatically increases the resolution of the lesion. Additional advantages of intravenous contrast include increased observer confidence in the diagnosis of diskitis and improved recognition of areas likely to yield positive biopsies.⁴

It has been suggested that vertebral intraosseous abscess formation, subligamentous spread and paraspinal abscess location were best identified on contrast-enhanced MR studies. The authors conclude that MR imaging may be useful as the method of first choice for the initial assessment and follow-up of patients with granulomatous spinal infections.⁵

Brucellar extradural abscess may compress the related roots and mimic a disc herniation as in our cases. Therefore brucellar extradural abscess should be kept in mind in the differential diagnosis of radicular symptoms caused by disc herniation.

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