Brucellar Spondylodiscitis: A Case Report

Brusellar Spondilodiskit: Olgu Sunumu

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ABSTRACT

A 26-year-old male patient presented to a healthcare clinic with complaints of lower back pain for about a month and, upon having been diagnosed with lumbar disc hernia, the medical treatment and physical treatment and rehabilitation program were initiated. The patient's complaint did not stop in spite of the treatment. He was admitted to our clinic when he has a low back pain increasing at night and with movement over the last two months. Phsical examination revealed painful lumber range of motions and there were decisive paravertebral muscle spasms at a limited bilateral lower lumbar level. The patient was diagnosed with spinal brucellosis through the magnetic resonans imaging and tube agglutination findings and the treatment was initiated with 200 mg daily dose of doxycycline and 900 mg/day dose of rifampicin for 3 months. After the treatment the patient had no longer lower back pain complaints. No edema related to spondylodiscitis was recorded on his L5-S1 endplates in the magnetic resonans imaging obtained in his 6-month follow-up. Brucellosis should be considered in the differential diagnosis of cases with low back pain characterized by inflammation and spondylodiscitis, especially in endemic areas.

Keywords: Brucella, discitis, rehabilitation

ÖZET

26 yaşında erkek hasta yaklaşık 1 aydır bel ağrısı yakınması ile başvurduğu sağlık merkezinde yapılan muayene ve tetkikler sonucunda lomber disk hernisi tanısı almış ve medikal tedavi ile fizik tedavi ve rehabilitasyon(FTR) programı uygulanmıştır. Tedaviye rağmen şikayetleri devam etmiştir. Hasta kliniğimize başvurduğunda 2 aydır devam eden hareketle ve gece artan bel ağrısı yakınması mevcuttu. Fizik muayenesinde lomber hareket açıklıkları ağrılı ve kısıtlı, bilateral lomber alt seviyede belirgin paravertebral kas spazmı mevcuttu. Lomber magnetik rezonans görüntüleme bulguları ve tüp aglutinasyon testi sonuçlarıyla spinal bruselloz tanısı konuldu. Üç ay boyunca doksisiklin günde 200 mg ile rifampisin 900 mg/gün tedavileri verildi. Tedavi sonrası hastanın bel ağrısı yakınması geriledi. Altı ay sonraki kontrolündeki magnetik rezonans görüntülemede L5-S1 end platelerinde spondilodiskite ait ödem bulgusu kaydedilmedi. İnflamatuvar karakterdeki kas iskelet sistemi ağrılarında endemik bölgelerde brusella mutlaka akla getirilmelidir.

Anahtar sözcükler: Brusella, diskitis, rehabilitasyon

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Introduction

Brucellosis is an infectious disease caused by Brucella sp., which are Gram-negative coccobacilli,and characterized by a granulomatous reaction in the reticuloendothelial system. Multiple systems can be involved, so that clinical manifestations of brucellosis may vary. Osteoarticular involvement in brucellosis can present as spondylodiscitis, sacroiliitis, arthritis, bursitis, and/or tenosynovitis(1,2,3). This study reports a case of brucellar spondylodiscitis with inflammatory low back pain.

Case Report

A 26-year-old man presented to a healthcare clinic complaining of low back pain for about 1 month. He was diagnosed with a lumbar disc hernia, and medical and physical treatment and rehabilitation were initiated. As these did not eliminate his pain, lumbar magnetic resonance imaging (MRI) was performed and showed bone marrow edema in the body of the L5 vertebra. The patient was referred to our hospital with a differential diagnosis that included trauma, metastasis, and tuberculosis (TB). In our clinic, he complained of low back pain that worsened at night for 2 months. The pain had spread to his right leg within the previous week. He described morning stiffness that lasted for about 1 hour. His personal and family histories were non-contributory. Lumber movement was painful and marked paravertebral muscle spasm was present bilaterally over the lower lumbar region. The sacroiliac compression test with straight leg raising and femoral stretching was positive on the right side. The patient's chest expansion was within the normal limit for his age. His hand-to-floor distance was 15 cm. The neurological examination was normal. His routine biochemistry was normal, except for an alanine aminotransferase concentration of 51 IU/L. The C-reactive protein level was 11.7 mg/L. The hemogram and sedimentation results were normal. His purified protein derivative (PPD) was negative and his chest and sacroiliac joint X-rays were considered normal. Lumbosacral X-rays revealed narrowing of the L5–S1 joint space and grade 1 listhesis. The lumbar MRI obtained at our hospital showed narrowing of the L5–S1 intervertebral disc, symmetrical overflow consistent with diffuse annulus bulging, anterior contact with the dural sac, grade 1 anterolisthesis, bilateral narrowing of the neural foramen, and marked edema at the endplates facing the disc junctures consistent with spondylodiscitis (Figure 1).

The patient was hospitalized with a diagnosis of spondylodiscitis. He complained of general asthenia and widespread myalgia. His vital signs were stable and he was afebrile. His blood cultures produced no growth. The brucellar tube agglutination test results were 1/640. The patient was diagnosed with spinal brucellosis based on the MRI and tube agglutination findings, and treatment was initiated with 200 mg/day doxycycline and 900 mg/day rifampicin for 3 months. After the treatment, the patient no longer had low back pain. No edema related to spondylodiscitis was noted on his L5–S1 endplates in the MRI obtained at the 6-month follow-up (Figure 2). His physical examination was also normal.

Discussion

Spinal vertebral involvement is seen in % 6-54 of brucellosis patients (1,2,4,5,6,7,8). Most frequently lumbar spine is affected. (9). The cervical vertebrae can also be involved: Nas et al. (10) presented. Another case involved both the cervical and lumbar vertebrae (11). Typically, the spinal involvement of Brucella affects a

Figure 1. T1-weighted lumbar MRI : Narrowing of the L5–S1 intervertebral disc, symmetrical overflow consistent with diffuse annulus bulging, anterior contact with the dural sac, grade 1 anterolisthesis and marked edema at the endplates facing the disc junctures consistent with spondylodiscitis.

Figure 2. T1-weighted lumbar MRI with contrast (after treatment).

single vertebra. For example, Bozgeyik et al. (12) found single vertebral involvement in 21/22 patients with brucellar spondylitis, and multiple involvement in only one patient. Of the patients with spondylodiscitis, % 10-43 develop neurological deficits of various degrees (4,13). In our case, only single vertebral involvement was detected and no neurological deficit was observed.

Radiological imaging methods such as X-rays, computed tomography (CT), MRI, and scintigraphy can be used in the diagnosis of osteoarticular brucellosis. Whereas X-rays are insufficient to evaluate spinal brucellosis, CT and scintigraphy cannot evaluate soft tissues. Although MRI is useful for evaluating the disease progress and response to treatment, it has lowspecificity for identifying the definitive cause of arthritis, spondylodiscitis, and osteoarticular lesions such as osteomyelitis (1). The diagnosis of brucellar spondylitis requires a combined evaluation using imaging methods, laboratory tests, and clinical examination. Invasive procedures might be necessary for patients who still cannot be diagnosed. Guven et al. (14) presented the case of a 75-year-old woman who had low back pain with cortical destruction in the T9–T10 and T12–L2 vertebral bodies, and suggested a diagnosis of spondylodiscitis. Their differential diagnosis included brucellosis, TB, and malignancy. The patient's serum agglutination tests and blood culture results were negative. The patient was diagnosed with brucellosis following analysis of a needle aspiration sample taken from a paravertebral microabscess. False-negative results cannot rule out the diagnosis of brucellosis because of the prozone phenomenon. Our patient was diagnosed with brucellar spondylitis using lumbar MRI and laboratory and clinical results, without having to resort to invasive procedures.

A study that compared TB and brucellar spondylodiscitis reported that constitutional symptoms, sedimentation level, and involvement of posterior vertebral elements were higher in TB spondylodiscitis (15). We ruled out TB spondylodiscitis in our patient because the sedimentation rate was not high, no constitutional symptom was present, the posterior vertebral elements were not involved, the PPD was negative, and the chest radiograph was normal. In another study, 75 patients diagnosed with spondylodiscitis were categorized into three groups, as having brucellosis, TB, or spondylodiscitis related to pyogenic infection; the authors stated that the isolation of the microorganism and fever were significantly more frequent in the brucellar spondylodiscitis group than in the other groups (16). Unlike most cases of brucellar spondylodiscitis, our patient had no fever.

The clinical findings of brucellar spondylodiscitisare similar to those of lumbar disc hernia, and brucellar discitis can even cause disc hernia. A study of a 50-yearold man with a lumbar disc hernia caused by brucellar discitis stated that in suspected cases with nerve root pressure, brucellar discitis should be considered in the differential diagnosis (17). Initially, our patient had been diagnosed with a lumbar disc hernia after a thorough physical examination and had been treated accordingly. The diagnosis may be delayed in cases lacking underlying degenerative spinal disease. In a case report on an elderly man with diabetes and degenerative spinal disease who was diagnosed with brucellar spondylodiscitis, the authors underlined the need to consider brucellosis when the response to other treatments is delayed in areas where brucellosis is endemic (18).

The standard treatment for brucellar spondylodiscitis is a 6–12-week regimen of at least two antibiotics, which should prevent relapse (19). Doxycycline and rifampicin

are frequently used in combination (20). Treatment for an epidural abscess might last 6–12 months and include surgical treatment (21). Our patient was given doxycycline and rifampicin for 3 months and a clinical response was obtained, with radiological improvement.A literature review stated that in almost all cases of brucellar spondylodiscitis and paravertebral abscess in the erector spinal muscles, the radiological findings regressed within 1 year following treatment (22).

As a conclusion, brucellosis should be considered in the differential diagnosis of cases with low back pain characterized by inflammation and spondylodiscitis, especially in endemic areas.

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