



Spondylodiskitis Associated with Epidural Abscess Due to Brucellosis

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Eur J Gen Med 2011;8(3):253-256

Received: 14.10.2010

Accepted: 11.11.2010

ABSTRACT

Spondylodiskitis with epidural abscess due to brucellosis is very rare and serious complication, and it may result in neurological deficits. Here, we report a 29 year-old male patient with brucellosis causing spondylodiskitis and spinal epidural abscess resulting in neurological deficits such as paresis. Surgical therapy is the main approach in the treatment of the abscess. However, the patient did not accept the surgery. Therefore, initial drug combination therapy (doxycycline and rifampicin) was changed to another therapeutic protocol (streptomycin and doxycycline and rifampicin), and the treatment period was extended to three months. He was completely cured in aspect of the disorder and complications. In conclusion, brucellar spinal epidural abscesses are a rare complication of brucellosis. In contrast to the high morbidity and mortality rates reported in pyogenic or tuberculosis abscess, brucellosis with epidural abscess has a good prognosis with early diagnosis and appropriate treatment.

Key words: Spondylodiskitis, spinal epidural abscess, brucellosis

Bruselloza Bağlı Gelişen Epidural Abse ile İlişkili Spondilodiskit

Bruselloza bağlı spondilodiskitle birlikte görülen epidural abse nörolojik defisite de neden olabilen çok nadir bir komplikasyondur. Burada bruselloz nedeniyle spondilodiskitle birlikte epidural abse ve buna bağlı parezisi olan, 29 yaşında erkek hasta sunuldu. Cerrahi tedavi abselerde temel tedavi yaklaşımı olmasına rağmen hasta cerrahi tedaviyi kabul etmedi. Bu nedenle hastaya daha önce başlanan kombinasyon tedavisi (doksisisiklin ve rifampisin) değiştirilerek diğer bir tedavi protokolüne (streptomisin + doksisisiklin + rifampisin) geçildi ve tedavi süresi 3 aya uzatıldı. Hastanın bruselloz ve komplikasyonu tam olarak tedavi edildi. Sonuç olarak, pyojenik ve tuberküloz abselerinde yüksek morbidite ve mortalite bildirilmesine rağmen bruselloza bağlı epidural abselerde erken tanı ve uygun tedavi iyi prognoza sahiptir.

Anahtar kelimeler: Spondilodiskit, spinal epidural abse, brusella

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INTRODUCTION

Brucellosis is one of the most generally seen bacterial zoonotic diseases in the world. It is a common disease in the Middle, East and Southeast Anatolia regions of Turkey. According to reports from the Turkish Ministry of Health, incidence rate of brucellosis was reported as 25.67/100 000 in this population (1, 2). Brucellosis can affect gastrointestinal, hepatobiliary, skeletal, cardiovascular and respiratory system. Skeletal system involvements such as peripheral arthritis and spondylitis are the most common complication of the disease. Lumbar region are most often involved in spinal brucellosis. Spondylodiskitis with epidural abscess is very rare and serious complication of the disease (3-5). Neurological deficits may develop due to epidural abscess. Therefore, in addition to medical therapy, surgical approach may be needed in aspect of epidural abscess. Surgical treatment should be accomplished especially in cases with severe neurological deficits (6).

A patient with spondylodiskitis with spinal epidural abscess due to brucellosis was presented. The case was treated medically because of not accepting surgical management. He was completely cured in aspect of the disorder and complications.

CASE

A 29-year-old male patient was admitted to the Outpatient Clinic of the hospital with low back pain. This pain radiated along the left leg and increased in intensity. Six weeks ago, the case had had the diagnosis of brucellosis due to characteristic clinical and laboratory findings, and he had drug therapy including rifampicin and doxycycline during the period in the other hospital. On physical examination, the body temperature was 36.4°C, and mild weakness (3/5) for plantar flexion at the left extremity. Initially laboratory values were listed next, white blood count: 9600/mm³, hemoglobin: 11.6 g/dL, hematocrit: 33.3%, platelet count: 208.000/mm³, erythrocyte sedimentation rate (ESR): 2mm/h, and C-reactive protein (CRP): 1.01 mg/dL (0- 0.8) and a normal blood biochemistry profile. Brucella standard tube agglutination test (SAT) was positive at a dilution of 1:320. Brucella species were not isolated from blood culture. In the past history, there was a cheese consumption, which was derived from raw milk (non-pasteurized).

Chest X-ray was normal for the differential diagnosis of tuberculosis. Magnetic resonance imaging (MRI) of the lumbo-sacral region displayed related to spondylodiskitis of L5 and S1 vertebral bodies associated with epidural abscess (Figure 1). Clinical, laboratory findings and imaging methods revealed that the diagnosis was spondylodiskitis with epidural abscess due to brucellosis. The patient was consulted with the Neurosurgeons in terms of the abscess. Surgical approach was recommended for the patient. However, he did not accept the operation. Therefore, the therapeutical regimen was changed as streptomycin (1 g/day, IM), doxycycline (200 mg/day, PO), and rifampicin (600 mg/day PO). Streptomycin was stopped 2 weeks after and the treatment was continued with doxycycline and rifampicin for another ten weeks to complete the three months period. After the treatment period, the patient's complaints were decreased, and he was consulted to physical therapy and rehabilitation in aspect of low back pain. Control MRI showed that the cystic appearance revealing epidural abscess is completely resolved (Figure 2).

DISCUSSION

Brucella species are generally slow growing and present with moderate symptoms. Osteoarticular involvement is the most common form of the disease. Epidural abscess is rare serious complication with associated this involvement (4). Localized pain, tenderness, and sensory motor problems during the disorder may be due to spinal cord compression. The most common micro-organism causing the abscess is Staphylococcus aureus. However, brucellosis occasionally results in spondylodiskitis. The abscess is very rarely seen in the patients with spondylodiskitis (3).

The definitive diagnosis of brucellosis is made by isolation of the bacteria in a culture medium. Bacterial isolation by culture may vary between 15-90%. If the culture is negative in terms of brucellosis, the serum specific antibody titration is used. SAT titer as 1/160 and above are considered to be positive in endemic areas (4). In our patient, although Brucella species were not isolated from blood culture, SAT titer was found 1/320.

The differential diagnosis should include traumas of the musculoskeletal system, osteoarthritis, intervertebral disk hernias, local or metastatic malignancies and tu-



Figure 1. (A, B, C). MRI of the lumbar spine before treatment showing spondylodiskitis with epidural abscess.

Figure 2. (A, B, C). MRI of the lumbar spine after treatment displaying the resolution of the abscess and the recovery of spondylodiskitis.

berculosis in Brucellar spondylodiskitis with spinal epidural abscess (7). MRI with contrast media is important for the differential diagnosis of spondylodiskitis and epidural abscess due to the various infectious agents and lesions such as hernia and metastasis in comparison to MRI without contrast media (8). In the current case, the lumbar spine MRI of the patient before treatment showed spondylodiskitis with epidural abscess (Figure 1). After treatment MRI displayed that the cystic appearance regarding the abscess was seen completely regressed (Figure 2).

Brucella-induced spondylodiskitis mostly affects the lumbar region and rarely the cervical region (9). Spondylodiskitis with spinal epidural abscess is a very rare condition and therefore diagnosis and treatment may be difficult. Late diagnosis may lead to surgical therapy in some patients with disorder (10). Diagnosis can be managed if a cautious anamnesis is obtained. The occupation and living area of the patient should be investigated in regions where brucellosis appears to be endemic. In the current patient, we detected no occupational risks, but the case was living in endemic region of brucellosis. In his past history, he was regularly consuming cheese made from raw milk.

To the literature of the six brucellosis cases with epidural abscess had medical therapy in spite of neurological deficits (6, 11-13). Although surgery is the main therapeutic approach for spinal epidural abscess (3), it can be

successfully treated medically without surgery. In a one of the big series, Ugarriza et al.(6) evaluated 11 brucellosis patients with epidural abscess. They are treated with medical or surgical therapy. One case had medical therapy in spite of neurological deficits as in our case. Six patients with neurological deficits were managed by surgical approach. The later four abscess patients without the deficits were treated with medical therapy. Of the nine cases were cured, but the other two patients had mild sequel. In the other series by Gorgulu et al.(11), it was pointed that they investigated nine cases with epidural abscess. They are managed with medical or surgical therapy. Three cases had medical therapy despite of neurological deficits as in the current report. One patient with neurological deficits was managed by surgical approach. The later five patients without the deficits were treated with medical therapy. All of them were completely cured in terms of brucellosis and the abscess. In the other two reports, the patients with epidural abscess were treated with drug therapy, although they had neurological deficits such as paresis as in the present case (12, 13).

In the current study, because of minimal neurological disorder, the patient was recommended for surgical management, but did not accept. Despite the previous therapeutic protocol, the patient did not recovered and the epidural abscess was developed. It was probably due to inconsistent, insufficient drug therapy or incom-

patible drug intake. To the literature, the combination of doxycycline plus rifampin gives the advantage of an all-oral regimen, but it is not recommended in cases with complications including spondylodiskitis. Two trials compared dual (doxycycline-streptomycin) versus triple (doxycycline-rifampicin-aminoglycoside) drug regimens overall failure was significantly higher in patients with the dual drug therapy than in patients with the triple therapy (4, 14). Due to treatment failure and complication, the therapeutic regimen was changed as streptomycin, rifampicin and doxycycline and the case was successfully treated with the combination drugs in spite of the abscess. For the therapeutical success, streptomycin was added to the protocol for a period of 14 days, and treatment period was extended to three months.

In conclusion, Brucellar spinal epidural abscess is a rare complication of brucellosis. In contrast to the high morbidity and mortality rates reported in pyogenic or tuberculosis abscess, brucellosis with epidural abscess has a good prognosis with early diagnosis and appropriate management. Only medical therapy can be used, whether the patient did not accept the surgery.

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