

# Brucella Spondylodiscitis Complicated with Abscess: Case Report

## Abse ile Komplike Olan Brusella Spondilodiskiti: Olgu Sunumu

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### Öz

Romatoloji poliklinik başvurularının önemli bir kısmını bel ağrısı oluşturmaktadır. Spondilodiskit nadiren bel ağrılı olguların etiyojileri arasında yer almaktadır. Spondilodiskit, disk ve vertebral korpusun inflamatuvar süreçle birlikte etkilendiği bir durumdur. Spondilodiskite Staphylococcus aureus, Escherichia coli, Mycobacterium tuberculosis, Brucella neden olabilir. Ayırıcı tanıda; vertebral kolonun tümöre bağlı harabiyeti, kırıklar, spondilartropatiler düşünülebilir. Brusella, farklı ülkelerde farklı prevalanslarda bildirilmesine rağmen spondilodiskitin önemli nedenlerinden biridir. Brusella Türkiye'de endemiktir. Brusella vertebral yapıları tutmasına rağmen apse ile komplike olması çok nadirdir. Olgu sunumumuzda romatoloji polikliniğine ağrı şikayeti ile başvuran bir hastada tespit edilen ve apse ile komplike olan brusella spondilodiskiti tartışılacaktır.

**Anahtar Kelimeler:** Abse, Bel ağrısı, Brusella, İnflamasyon, Spondilodiskit

### Abstract

Rheumatology outpatient clinic referrals low back pain accounts for a significant proportion. Spondylodiscitis is rarely among the etiologies of pain cases of low back pain. Spondylodiscitis is a condition which disc and vertebral corpus are affected together with inflammatory process. Spondylodiscitis may be caused by Staphylococcus aureus, Escherichia coli, Mycobacterium tuberculosis, Brucella. In the differential diagnosis; destruction of the vertebral column due to tumor, fractures, spondyloarthropathies can be considered. Brucella is one of the notable causes of spondylodiscitis, although it is reported with different prevalence in different countries. Brucella is endemic in Turkey. Although Brucella involves vertebral structures, it is very rare for it to be complicated with abscess. In our case report, brucella spondylodiscitis complicated with abscess and detected in a patient presenting to the rheumatology outpatient clinic with pain will be discussed.

**Keywords:** Abscess, Low Back Pain, Brucella, Inflammation, Spondylodiscitis

### Introduction

Brucellosis is a systemic infectious disease, caused by a nonencapsulated, nonmotile, gram-negative bacilli belonging to the genus Brucella (1). This disease is a zoonosis transmitted to humans from infected animals such as goats, sheep, cows and dogs. The prevalence is higher in Mediterranean area, the Arabian Peninsula, Mexico, and Central and South America. Brucellosis is endemic in Turkey (2). Brucellosis is a systemic disease that affects many tissues and organs, especially the reticuloendothelial and musculoskeletal systems (3). Spinal involvement is the most important cause of the debilitating and disabling complications which can be either focal or diffuse (4). The focal form is usually restricted to the anterior part of an end-plate. The diffuse type tends to involve the entire vertebral body and it can be extended to adjacent structures such as intervertebral disk, epidural space and paravertebral muscles.

Disc space infection and paravertebral and epidural extension of the inflammatory process can

be clearly documented on magnetic resonance imaging (MRI) up to 50% of cases with brucellosis may have spinal involvement that is mostly seen as spondylitis whereas abscess formation is very rare (2,5). In our case report, brucella spondylodiscitis complicated with abscess and detected in a patient presenting to the rheumatology outpatient clinic with back pain will be discussed.

### Case

A 64-year-old woman presented to our rheumatology outpatient clinic with complaints of low back pain that increasing at night. On systemic questioning, it was learnt that she had undulating fever, weight loss and weakness. On examination, the patient was found to be in a decreased general condition and musculoskeletal examination was normal. Routine blood tests and lumbar Magnetic Resonance Imaging (MRI) were performed in the patient in whom differential diagnoses of malignancy and infection were considered in the first plan. Laboratory results revealed sedimentation: 80 mm/h, CRP: 72 mg/L (N: 0-5 mg/L). On MRI, signal increase was found in STIR (short tau inversion recovery) sequence series in the L4 - L5 vertebral corpus and disc spaces and was evaluated as compatible with spondylodiscitis (Figure 1).

It was learnt that the patient obtained milk and dairy products from her own animals. Brucella tube agglutination test was performed. And the result was found to be positive at 1/1280 titration. The patient was referred to infectious diseases department and

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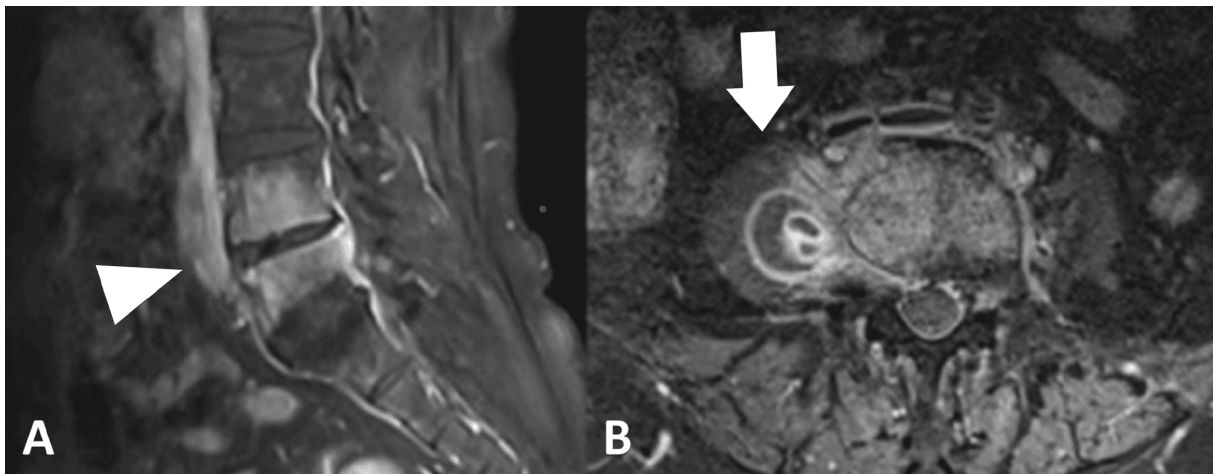
Başvuru Tarihi / Received:	29.07.2024
Kabul Tarihi / Accepted :	10.02.2025

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rifampicin and doxycycline treatments were commenced. In the follow-up, streptomycin was added due to an increase in the brucella titre. Lumbar MRI with contrast was repeated due to aggravation of low back pain in the follow-up. Contrast uptake at the level of L4 - L5 vertebrae and disc, a 24x23 mm mass lesion with predominantly peripheral contrast enhancement between the psoas muscle and vertebrae on the right, which was evaluated as paravertebral abscess in the first plan (Figure 2). Paravertebral abscess was surgically drained and rifampicin and ciprofloxacin treatments were continued. Antibiotherapy was maintained during 1-year, general condition improved and low back pain regressed.



**Figure 1.** Signal increase in STIR sequence series in L4 – L5 vertebral body and disc distances.



**Figure 2. A.** (Arrowhead) Contrast enhancement at the L4 – L5 vertebra and disc level; **B.** (arrow) a mass lesion of 24x23 mm, which is evaluated as a paravertebral abscess in the first plane, with predominantly peripheral contrast enhancement between the psoas muscle and the vertebrae on the right, and occasionally containing semisolid areas.

## Discussion

Low back pain accounts for a significant proportion of Rheumatology outpatient clinic referrals. (6). Low back rarely among the etiologies of pain cases of spondylodiscitis are included (7).

Spondilodiscitis may be caused by *Staphylococcus aureus*, *Escherichia coli*, *Mycobacterium tuberculosis*, *Brucella* (8). In the differential diagnosis, destruction of the vertebral column due to tumor, fractures, spondyloarthropathies should be considered.

*Brucella* may effects vertebral structures however it is very rare for it to be complicated with abscess (9). The endemicity of brucellosis in Turkey, which is reported at different prevalences in different countries, is of value in terms of being included among our differential diagnosis. The etiology of low back pain, which is one of the common causes of referral to rheumatology outpatient clinics dealing with many pain conditions, ranges from muscle pain to malignancies (10). Cases of spondylodiscitis are important causes of low back pain. *Brucella*, which is endemic in Turkey, is one of the causes of spondylodiscitis. As in our case, there is a risk of progression with many complications. *Brucella* is an important differential diagnosis that every physician should keep in mind.

## Conclusions

In our rheumatology outpatient clinics where low back pain is a common reason for admission, we wanted to report our case to emphasise that the presence of infectious conditions such as *Brucella* among the possible differential diagnoses is important in terms of diagnosing the patient in a short time and starting treatment.

### Conflict of interest statement

There is no conflict of interest in this case report.

**Written consent:** Consent to the writing of the article was given by the patient on 25 March 2023.

**Funding:** No Funding

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