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Lomber Disk Hernisini Taklit Eden Nadir Bir Brucella Spondilodiskit Olgusu

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ÖZ

Giriş ve Önemi: Bruselloz dünyada, özellikle sanayileşmiş ve az gelişmiş ülkelerde en sık görülen zoonotik hastalıklardan biridir. Klinik tablo genellikle lokal olmakla birlikte multisistemik olgular da görülebilmektedir. Multisistemik vakalarda, genellikle brusellozlu hastaların %2 ila %53'ünde spondilit gelişir ve en sık etkilenen yaş grubu 50 ila 60 yaş arasındaki kişilerdir. Bu klinik tablo çoğunlukla lomber vertebraları (L4 ve L5) ve torakal vertebraları etkilemektedir.

Vaka Sunumu: Olgudan bir ay önce (Bruselloz tanısı konulduğu gün itibariyle) Lomber Disk Hernisi (LDH) nedeniyle beyin cerrahı tarafından ameliyat edilen 55 yaşındaki erkek hasta, şiddetli bel ve sağ bacak ağrısı şikayetiyle tekrar beyin cerrahi kliniğine başvurdu. İleri derecede hareket kısıtlılığı bulunan hastaya yapılan serolojik Bruselloz testlerinde pozitif sonuç tespit edildi. Hastanın öyküsünde son dört haftadır hareket kabiliyetinde azalma ve alt ekstremitede güçsüzlük olduğu öğrenildi. Manyetik Rezonans Görüntülemede (MRG) lomber kolonlarda, tanısal olarak önemli olan bölgeler (granülomatöz alanlar) ve lomber diskitin bulunduğu yerler anlamlıydı.

Klinik Tartışma: Bruselloz spesifik seroloji testlerinde pozitif tarama testi sonucu ve yüksek titrede anti-brusella antikorları bulundu. Hastaya klinisyen tarafından uygun antibiyotik tedavisi (üçlü antibiyotik tedavisi) uygulandı. Hasta şifa ile taburcu edildi.

Sonuç: Bruselloz; lokal (eklem ağrısı, artrit gibi) veya sistemik bulgularla (spondilodiskit, tenosinovit gibi) karşımıza çıkabilen bir enfeksiyon hastalığıdır. Bu olguda olduğu gibi; benzer klinik ve semptomatik özelliklere sahip hastalarda bruselloz gibi zoonotik bir hastalığın varlığının mutlaka araştırılması gerektiği hatırlanmalıdır.

Anahtar Kelimeler: Brusellozis, Laboratuvar Testleri, Spondilodiskitis

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A Rare Case That is Brucella Spondylodiscitis Mimicking Lumbar Disc Herniation

ABSTRACT

Introduction and Importance: Brucellosis is one of the most common zoonotic diseases in the world, especially in industrialized and underdeveloped countries. Although the clinical picture is usually local, multisystemic cases can also be seen. In multisystemic cases, generally, 2% to 53% of patients with brucellosis develop spondylitis and the most commonly affected age group is people between 50 and 60 years of age. This clinical picture mostly affects the lumbar vertebrae (L4 and L5) and thoracic vertebrae.

Case Presentation: A 55 years old male patient, who was operated on by a neurosurgeon for Lumbar Disc Herniation (LDH) 1 month before the case (the day of Brucellosis diagnosed), was re-admitted to the neurosurgery clinic with complaints of severe waist and right leg pain. A positive result was detected in the serological Brucellosis tests performed on the patient with severe mobility limitations. The patient's history included decreased mobility and lower extremity weakness for the past 4 weeks. In Magnetic Resonance Imaging (MRI), diagnostically important regions (granulomatous areas) and locations of lumbar discitis in the lumbar columns were significant.

Clinical Discussion: In Brucellosis specific serology tests, a positive screening test result and high titer anti-brucella antibodies were found. Appropriate antibiotic treatment was given to the patient by the clinician (triple antibiotic therapy). The patient was discharged with full recovery.

Conclusion: Brucellosis is an infectious disease that may present with local (such as joint pain, arthritis) or systemic findings (such as spondylodiscitis, tenosynovitis). As in this case; it should be remembered that the presence of a zoonotic disease such as brucellosis should be investigated in patients with similar clinical and symptomatic features.

Keywords: Brucellosis, Laboratory Tests, Spondylodiscitis

1. INTRODUCTION

Brucellosis is an infectious zoonotic disease caused by Brucella sp., which are Gram-negative coccobacilli, and characterized by a granulomatous reaction in the reticuloendothelial system. Multisystemic effects of Brucellosis may variable due to vary clinical table so that clinical manifestations of brucellosis may vary. Osteoarticular involvement in brucellosis can present as spondylodiscitis, sacroiliitis, arthritis, bursitis, and/or tenosynovitis. This study reports a case of brucellar spondylodiscitis with inflammatory low back and right leg pain (Alton, 1996).

Human brucellosis is a major public health concern in several regions, mainly the Mediterranean region, the Middle East, and parts of Central and South America. Brucellosis affects organs with abundant mononuclear phagocytes, such as the liver, spleen, lymph nodes, and bone marrow. Given its unique pathogenic characteristics of Brucella sp., it frequently causes various complications. One serious complication of Brucellosis is spinal involvement (Al Jindan, 2021; Laine, 2023;).

Approximately 2%–53% of patients with brucellosis demonstrate spinal involvement. A retrospective study in Türkiye reported that 39% of patients with brucellosis presented with spondylodiscitis. Brucellar spondylitis typically occurs in men aged >40 years. On average, patients with spinal involvement are significantly older than those without spinal involvement (Alhusseini, 2024).

Spondylitis mostly affects the lumbar spine, followed by thoracic and cervical regions. The most common complaints of spondylitis include fever, malaise, sweating, back pain, and anorexia (Ali Adam, 2022).

2. CASE PRESENTATION

A 55 years old male patient comes to the neurosurgery clinic with a complaint of lumbar region pain for about one month. For diagnostic purposes; biochemical tests and radiological examinations were requested from the patient.The patient was diagnosed with lumbar disc herniation and a surgical procedure was performed. The patient, who was followed up in the post-operative period, was sent home with full recovery after being monitored in the ward for 3 days.

2.1. Laboratory Findings of the Patient

Parameters typical for brucellosis were studied and evaluated in the patient's serum. Among these parameters, there were CRP (C-reactive protein), ALT (Alanine aminotransferase), AST (Aspartate aminotransferase), GGT (Gamma-glutamyltransferase), creatinine and sedimentation parameters typical for brucellosis.

In the pre-operative period (undiagnosed Brucellosis stage); CRP levels in order; 59, 98 and 125 mg/L, (reference range: 0-5 mg/L), Sedimentation value 109 mm/Hg (reference range: 0-20 mm/Hg), AST values respectively; 58, 28 and 17 U/L (reference range: 0-50 U/L), ALT values respectively; 62, 28 and 11 U/L (reference range: 0-50 U/L), Creatinine values are; It was measured as 0.59 and 0.57 mg/dL (reference range: 0.7-1.3 mg/dL).

In the postoperative period, approximately 40 days after the patient was discharged, the patient applied to the neurosurgery clinic again because her complaints did not improve, hence again, the patient's laboratory tests are requested.

Important laboratory findings of this patient measured consecutively in the post-operative period; CRP: 105.6, 98.6, 125 mg/L respectively, Sedimentation measurement: 109, 114 mm/h respectively, ALT measurement: 28, 11, 23 U/L respectively, AST measurement: 28, 17, 31 U/L respectively, Creatinine measurement: 0.57, 0.56, 0.5 mg/dL, respectively, GGT measurement: 66 and 78 U/L, respectively.

In the post-operative period were; the remarkable findings were that the patient's complaints continued to increase and his ability to walk freely decreased. During clinical examination, abscess formation was observed in the surgical operation area. Samples were taken from this abscess sample by the clinician for culture tests and sent to the laboratory. When there was no growth in aerobic and anaerobic culture tests, it was thought that this case might be Brucellosis and Brucella tests were requested for the patient.

Approximately 1,5 months after the date of surgery, brucellosis tests requested from the patient gave positive results; Rose-bengal test (Seromed Laboratory Diagnostics kit) was positive and agglutination test (Coombs serum

agglutination test, TULIP Diagnostics kit) was positive at 1/640 titer. This patient, who lives in an area endemic for brucellosis, was the first patient encountered with this clinic table in our hospital.

The patient was transferred from the neurosurgery clinic to the Infectious Diseases Clinic and Brucellosis treatment was planned (triple antibiotic therapy: Streptomycin, Rifampicin and Doxycycline). At the end of medical treatment, the patient was discharged with full recovery.

2.2. Radiological Findings of the Patient

Within the scope of pre-operative and post-operative radiological examinations, the patient's MRI evaluation results are presented below.

Figure 1. Lumbar T2 sagittal MRI showed a right paracentral extruded disc herniation at the L4-5 intervertebral disc space, and the patient complained of sciatica and low back pain, so lumbar microdiscectomy surgery was performed (pre-operative stage). There is no inflammatory area visible in this image (below).

Figure 1. The right paracentral extruded disc herniation at the L4-5 intervertebral disc space (marked area).

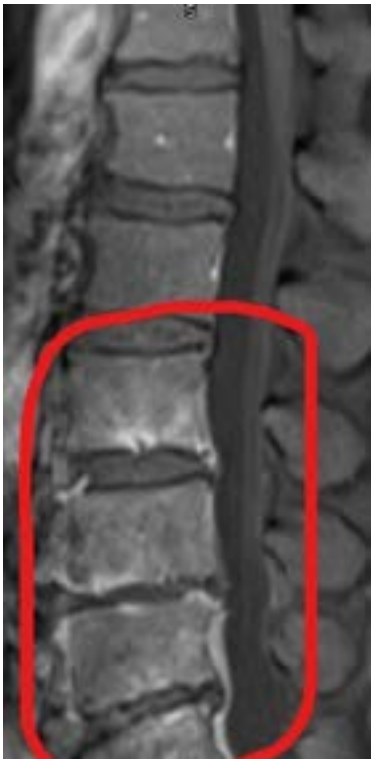
Figure 2. One month after the lumbar microdiscectomy, tthe patient developed severe back and right leg pain. Contrast-enhanced lumbar MRI showed contrast enhancement in the L4-5 intervertebral disc space and a location showing contrast enhancement in the epidural area. Reoperation was planned for the patient and peroperative abscess drainage was provided and culture tests were taken (below).

Figure 2. The Contrast enhancement in the L4-5 intervertebral disc space and a location showing contrast enhancement in the epidural area (marked area).

Figure 3. Discitis and epidural abscess location are also observed in the T2 sagittal MRI of the same patient (post-operative stage) (below).

Figure 3. Discitis and epidural abscess location (marked area).

Figure 4 and 5. Since the patient's pain continued in the postoperative period and there was no clinical response to antibiotic therapy, Brucella specific serological tests was performed. After he tested positive, medical treatment was arranged and he was hospitalized for a month. In the first month follow-up lumbar MRI, it was observed that the existing inflammatory lesions had spread from the L4-5 intervertebral disc space and invaded the L3, L4 and L5 vertebral bodies (below).



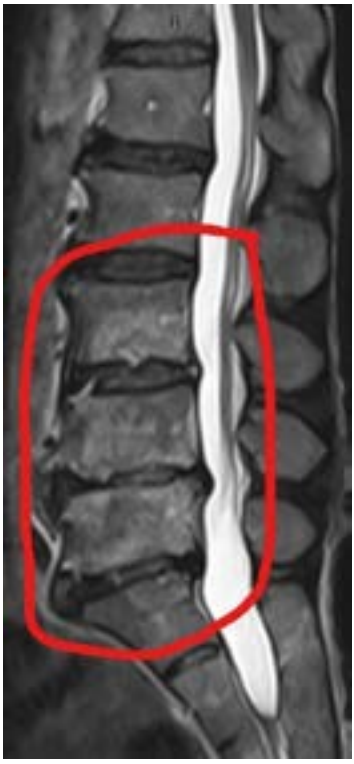


Figure 4 and 5. The spread of existing inflammatory lesions from the L4-5 intervertebral disc space to the L3, L4 and L5 vertebral bodies (marked area).

3. DISCUSSION

Human brucellosis remains a significant health problem worldwide due to its complications. Serious complications such as spondylodiscitis reduce people's quality of life and threaten their health. In this study, it was aimed to reach the correct diagnosis by evaluating the laboratory and radiological examinations of the patient with suspected lumbar disc herniation and the delayed Brucellosis laboratory tests together (Spernovasilis, 2024).

Diagnosis of brucellosis infections is made by isolating the microorganism from blood, bone marrow, body fluids or tissues. Many laboratories choose to use rapid isolation methods to speed up blood cultures. However, to isolate Brucella sp. in this way, these cultures must be maintained for at least 12-15 days. It is known that the blood culture positivity rate is not very high in special clinical conditions such as spinal brucellosis. Because; the use of the Brucella-specific serum agglutination test, especially in endemic areas, is

still the well-standardized and most widely used serological method for the diagnosis of Brucellosis (Di Bonaventura, 2021).

Spinal brucellosis is caused by the hematogenous route spread of microorganisms, and the infection usually begins in the anterior superior end plate of the vertebral body due to the rich blood supply in this area. The inflammation can then spread to the entire vertebral body or intervertebral disc, causing spondylodiscitis. Complications such as epidural abscess, granuloma or discitis secondary to vertebral body involvement of brucellosis have been reported in the literature regarding nerve root compression in brucellar spondylodiscitis (Rizkalla, 2021).

Epidemiological studies on lumbar or spinal brucellosis cases are currently limited, but Brucella-specific serological tests should be taken into consideration in places where endemic Brucellosis cases are observed. In this case study, the patient being over 40 years of age was an independent risk factor for spinal involvement in brucellosis. Generally, the risk of spinal involvement in patients with brucellosis over the age of 40 was shown to be 5.42 times higher than in patients aged ≤40 years (Yagupsky, 2019).

As a result, in areas where brucellosis are endemic, brucellosis discitis and spondylitis should be considered in the differential diagnosis of long-standing back pain in suspected cases. In such cases of brucellosis, only antibiotic therapy may be sufficient and provide recovery. It has also been reported that brucellosis may be the cause of LDH only in rare cases. Therefore, serological tests before surgical interventions for Lumbar discitis and spondylitis are important options in the diagnosis of Brucellosis and should never be overlooked.

Conflict of Interest Statement: There is no financial conflict of interest with any institution, organization or person related to this study and there is no conflict of interest between the authors.

Ethics Statement: This study includes studies that do not require ethics committee approval; data collection from data obtained through surveys, group studies, focus studies, observations, experiments, interviews, all kinds of research conducted with qualitative or beautiful treatments, humans and animals (including material data) are used with universal or scientific data,

parts performed on humans are not within the scope of those performed on animals, and are included in retrospective transactions in accordance with Data Protection), and it has been declared that no ethical transactions have been carried out regarding this personal law.

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