CASE REPORT

A case of brucellosis with abscess of the iliacus muscle, olecranon bursitis, and sacroiliitis

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Introduction

Brucellosis, caused by an intracellular Gram-negative bacterium, is an infectious disease with low mortality but high morbidity. Brucellosis is a frequently observed infectious disease in the rural regions of Turkey.

The frequency of osteoarticular complications of brucellosis ranges between 10% and 85%. The most common forms of osteoarticular involvement are arthritis, spondylitis, bursitis, tenosynovitis, and osteomyelitis. Arthritis usually involves the large joints, especially the sacroiliac joint. The most common sites of intramuscular abscesses in brucellosis are the psoas and paraspinal muscles. Brucellosis-related bursitis cases are rarely reported.

The abscess of the iliacus muscle, which has not been reported before, and the accompanying sacroiliitis and ole-

Summary

Brucellosis is a systemic infection involving many organs and tissues. The musculoskeletal system is one of the most commonly affected. The disease can present with sacroiliitis, peripheral arthritis, spondylitis, paraspinal abscess, bursitis, and osteomyelitis. A 25-year-old male patient was admitted with fever of 20-day duration, right-sided hip pain, and night sweating. A Brucella standard tube agglutination test was positive at a titer of 1/160. Magnetic resonance imaging (MRI) of the hip joint showed right sacroiliitis and a hyperintense, nodular, lobulated mass within the right iliacus muscle, consistent with abscess. The patient was started on intramuscular streptomycin at a dose of 1 g/day, oral rifampin 600 mg/day, and doxycycline 200 mg/day. On day 20 of treatment, the patient was admitted with swelling and pain over the left elbow for the past week. MRI of the left elbow was performed, which showed fluid edema suggestive of olecranon bursitis. Taking the patient’s complaints into consideration, rifampin and doxycycline treatment were maintained for a year. Pain at the hip joint and elbow resolved and MRI findings disappeared. Abscess of the iliacus muscle, which has not been reported before, and the olecranon bursitis that developed during treatment make this case worth presenting.

KEYWORDS
Brucellosis; Bursitis; Olecranon; Iliacus muscle; Abscess; Sacroiliitis

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cranon bursitis that developed during treatment make this case worth presenting.

Case report

A 25-year-old male patient was admitted with fever of 20-day duration, right hip joint pain, and night sweating. He was a farmer. He had a history of antimicrobial treatment for 20 days for brucellosis 8 months earlier at another center. Physical examination revealed fever of 38.3 °C and movement restriction of the right hip joint. There were no other pathological findings. Laboratory findings included: white blood cell count 5.9 × 10^9/l, hemoglobin 12.7 g/dl, platelet count 216 × 10^9/l, C-reactive protein (CRP) 44 mg/l, and erythrocyte sedimentation rate (ESR) 33 mm/h. The Brucella standard tube agglutination test was positive at 1/160 titer and tube agglutination with Coombs serum was positive at a titer of 1/320. Among the autoimmune markers, antinuclear antibody and rheumatoid factor were negative. There was no bacterial growth in blood cultures. Magnetic resonance imaging (MRI) of the hip joint demonstrated right sacroiliitis and a hyperintense, nodular, lobulated mass measuring 39 × 33 mm in the right iliacus muscle, consistent with abscess (Figure 1). Surgical intervention was not carried out due to its location. Treatment with intramuscular streptomycin 1 g/day, oral rifampin 600 mg/day, and oral doxycycline 200 mg/day was started. On day 20 of treatment, the patient presented with swelling and pain of the left elbow that had started a week earlier. On physical examination, there was no hyperemia. The patient did not have a history of fever or trauma at that time. A superficial tissue ultrasound of the left elbow revealed a 5 × 37 × 32 mm heterogeneous, hypoechogenic mass with an echogenic center in the subcutaneous tissue. An MRI of the left elbow was obtained for the differential diagnosis. The MRI showed fluid edema appearance around the olecranon bursa, consistent with bursitis (Figure 2). Streptomycin, rifampin, and doxycycline do not cause bursitis as a side effect. Since the patient was under antibiotic treatment, we did not carry out a synovial fluid culture. Streptomycin treatment was continued for 21 days. Taking the patient’s complaints into consideration, rifampin and doxycycline treatment was maintained for a year. The pain in the hip joint and elbow resolved and MRI findings disappeared. Effusions and abscess within the iliacus muscle disappeared on follow-up MRI of the hip and elbow. A control Brucella standard tube agglutination test titer was 1/40. ESR and CRP levels decreased to normal values. The patient was followed up for two years after the completion of treatment and had no complaints.

Discussion

Brucellosis is a systemic disease that can involve any organ in the human body. Osteoarticular complications are common in brucellosis, and can involve any part of the musculoskeletal system. Publications from Turkey have reported the frequency of osteoarticular involvement in brucellosis to be in the range of 36.5—69%. The most common site of osteoarticular involvement, as in the present case, is the sacroiliac joint.

Isolated brucellosis-related bursitis is a rare finding in the literature. Mousa and colleagues reviewed 169 cases of brucellosis and reported bursitis and tendonitis in 1.2% of the cases. In brucellosis, the most frequently involved bursa is the prepatellar bursa. Brucella bursitis is a chronic infection and patients typically suffer from recurrent bursa infections refractory to antimicrobial treatment. However, our patient responded to long-term antimicrobial treatment and recurrence was not observed.

Taşova and colleagues studied 238 patients with brucellosis and found osteoarticular involvement in 87 patients (36.5%); five of these patients had bursitis (5.7%) and the most common sites of involvement were the prepatellar and
subacromial bursae. Pourbagher et al. reviewed 251 cases and identified olecranon bursitis in three cases (1.2%). Tra- boulssi and colleagues reported that the prepatellar bursa is the most common site of Brucella-related bursal infection; this finding is attributed to frequent kneeling with direct trauma to the bursa while handling infected animals. However, our case did not have a history of trauma to the region of the olecranon that would cause bursitis.

The diagnosis of bursitis is generally challenging and often relies on clinical suspicion. It has been reported that isolation of the Brucella bacterium is possible with synovial tissue culture rather than synovial fluid culture. The exact pathophysiology of Brucella arthritis and bursitis is unknown. Gotuzzo et al. suggested two pathogenic mechanisms: septic and reactive forms. The septic form seems more probable as Brucella spreads through the blood and thus arthritis is probably acquired through the blood stream, as in other bacterial arthritides. In addition, recovery of Brucella from synovial fluid or tissue supports the septic form theory. The difference between the clinical presentations of the so-called septic and reactive forms of brucellosis might be due to differences in the virulence of Brucella microorganisms in different patients. We believe that bursitis in our patient was a consequence of the reactive mechanism since it developed under treatment.

Brucellosis-related muscle abscesses have usually been found within the psoas and paravertebral muscles. In our case, there was iliacus muscle abscess accompanying sacroiliitis. Physical examination results were unremarkable other than pain of the hip joint and the restricted range of motion. There have been no other cases of iliacus muscle abscess associated with brucellosis reported in the literature. Psoas abscesses require surgical drainage and antibiotic treatment; only one case of psoas abscess associated with brucellosis in the literature did not require surgical drainage and was treated successfully with anti-Brucella antibiotics. The abscess could not be drained in our case due to its location, and a specimen could not be obtained for culture, but it was treated successfully with antimicrobials effective for brucellosis.

MRI is a powerful tool for the diagnosis of spondylodiscitis, especially at the early stages, paraspinal or epidural abscesses, and chord or root compression associated with brucellosis. MRI was utilized to diagnose both the iliacus muscle abscess and olecranon bursitis.

In conclusion, the present study highlights the importance of MRI findings in the presence of an additional finding whilst under treatment, and the development of olecranon bursitis is noteworthy. It should be kept in mind that brucellosis in regions with high endemicity and osteoarticular involvement, like Turkey, can involve any muscle and joint.

Conflict of interest: No conflict of interest to declare.

References