A Case of Brucellosis With Simultaneous Dactylitis and Sacroiliitis

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Abstract

Brucellosis is a zoonosis of worldwide distribution caused by small gram-negative nonencapsulated coccobacilli of the genus Brucella. Musculoskeletal involvement is one of the most common locations and includes spondylitis, sacroiliitis, osteomyelitis, peripheral arthritis, bursitis, and tenosynovitis. The most common osteoarticular finding in adult is sacroiliitis. However, dactylitis is seemed very rare in osteoarticular involvement with brucellosis. We report a very rare case of brucellosis with simultaneous dactylitis and sacroiliitis.

Keywords: Brucellosis; Dactylitis; Osteoarticular involvement; Sacroiliitis

Introduction

Brucellosis is a type of zoonosis caused by the Brucella type of bacteria and transmitted to humans by the meat, bodily fluids like milk and urine or the fetal material from infected animals like sheep, goat, cattle and pigs. Another way of transmission is the ingestion of the dairy products prepared with the milk from infected animals. Brucellosis manifests itself with high fever, shivering and pain in the muscles and large joints [1].

Osteoarticular involvement is the most frequently observed complication of brucellosis [2]. Osteoarticular involvement includes spondylitis, sacroiliitis, osteomyelitis, peripheral arthritis, bursitis, and tenosynovitis [3]. In this article, a case of brucellosis with a combination of sacroiliitis and dactylitis is presented.

Case Report

A 47-year-old male patient presented to our clinic with pain in his right hip that started 10 days ago. There was also a diffuse swelling in the 3rd finger of his left hand (Fig. 1). The patient described fever, night sweats, widespread muscle pain and fatigue that continued for the last two weeks. He did not have any history of trauma, psoriasis, diarrhoea, urethritis or any familial inflammatory arthropathy. During his physical examination, his temperature was 39 °C, blood pressure 120/70 mmHg, heart rate 98/min, and his respiration rate was 18/min. Other systemic examinations gave normal results. The locomotor system examination revealed diffuse swelling and pain in the 3rd finger of his left hand. The right sacroiliac joint was positive in terms of the compression and Mennell’s tests and the Fabere sign. The patient’s laboratory tests revealed his leukocyte count as 8 K/uL, sedimentation rate as 21 mm/h, CRP level 32 mg/dL (0 - 5 mg/dL), ALT value 116 mU/L and AST value as 99 mU/L. The serum uric acid and calcium levels and urine test results were within normal limits. The rheumatoid factor (RF), anti-nuclear antibody (ANA) and HLAB-27 tests were negative. However, the Rose Bengal test gave a positive result and Wright’s seroagglutination test was also positive for a 1/320 titre. Blood and urine cultures were obtained from the patient. On the 7th day of the blood culture, Brucella melitensis growth was detected. No infectious agents were observed to grow in the urine culture. While no pathologies were detected in the PA chest X-ray, the radiography of the left hand indicated a soft tissue swelling in the third finger. In the patient’s magnetic resonance imaging (MRI), marked fluid retention was observed around the flexor digitorum superficialis and profundus tendons at the level of the proximal phalanx of the 3rd finger of the left hand. Imaging with an intravenous contrast agent revealed contrast retention at this point (Fig.
2). The image was interpreted as diffuse inflammation in the digitorum superficialis and profundus tendons. In the MRI performed due to the pain in the patient’s right hip, the fat-suppressed T2-weighted images revealed diffuse hyperintense subchondral areas on the side of the right iliac bone facing the sacroiliac joint (Fig. 3). Contrast retention was also observed at this point during the intravenous contrast imaging performed. The image was interpreted as right sacroiliitis. Based on the patient’s complaints and the findings at hand, reactive brucella dactylitis and sacroiliitis was diagnosed and treatment was started with a combination of doxycycline (200 mg/d), rifampicin (600 mg/g), streptomycin (1gr/d) and indometacin (100 mg/d). On the 10th day of his treatment, the patient’s temperature dropped to normal and the swelling and pain in his finger healed completely. On the 19th day of his treatment, the pain in his right hip was markedly reduced. While the streptomycin treatment was ended on the 21st day, doxycycline 200 mg/d, rifampicin 600 mg/d and indometacin 100 mg/d were continued until the end of the 8th week. The patient was discharged after four weeks’ hospital stay.

**Discussion**

The frequency of osteoarticular involvement in brucellosis varies between 0-85% in the literature. This ratio has been reported as 21.3% in Spain [4], 28.5% in Iran [2], 42% in Greece [5], 47.7% in Saudi Arabia [6] and 59.2% in Macedonia [7]. In the studies conducted in Turkey, the frequency has been observed as 33.7-43% in the Mediterranean region [8-11], while it was 46.5% in the middle Anatolian region [12]. However, in a study conducted by Gur et al [13] in our region, this frequency was found as 69%.

Sacroiliitis is the most common type of osteoarticular involvement [12-15] which usually occurs unilaterally [13, 14], although there are reports claiming that bilateral involvement occurs more frequently [9, 12, 16]. Our patient also had unilateral sacroiliac joint involvement. In B.melitensis infections, 20-80% of the patients reveal findings suggesting musculoskeletal system involvement [14]. Also, Ariza et al [15] have demonstrated that the sacroiliac joint is the most commonly involved joint in patients where a B. melitensis infection is predominant. Similarly, the blood culture of our patient with sacroiliitis also indicated B.melitensis growth.

Dactylitis is characterised with arthritis in the small joints of the fingers and toes [17]. Inflammation along the finger flexor tendons, edema and enthesitis form the basic pathologies [18, 19]. Although dactylitis or ‘sausage fingers’ forms the characteristic feature of arthritis, this condition may also be observed in reactive arthritis, sarcoidosis, gout or flexor tendon sheath infections [20, 21]. Although dactylitis often occurs as an inflammation both in the joints and the flexor tendon sheaths of fingers and toes, it may also be observed in the form of isolated flexor tenosynovitis [18, 22].

Patients with brucellosis may develop bursitis and tendinitis in the periarticular region [13]. Dactylitis in a patient with brucellosis was previously reported by Ozgocmen et al [23]. Also in our case, we evaluated the diffuse swelling in the 3rd finger as brucella dactylitis and detected a diffuse tendon inflammation at the flexor digitorum profundus and superficialis in the MRI.
In a recent study, multiple articular involvement has been reported in 17% of the patients with brucellosis; with sacroiliitis and spondylodiscitis in 10 patients, sacroiliitis and peripheral arthritis in 4 patients, and sacroiliitis and bursitis in one patient [12]. As far as we know, our patient is the first case in the literature where a sacroiliact and dactylitis are simultaneously observed. Moreover, except for the patients with brucella spondylitis [24], response to the treatment is good and fast in patients with osteoarticular involvement [25-27]. We have also observed a good response to the triple antibiotic therapy in our patient.

In conclusion, dactylitis is an important feature of inflammatory arthritis and unusual complication of osteoarticular brucellosis. And also dactylitis may be found with sacroiliact in patients with brucellosis.

Disclosure of Interests’ Conflict

All authors declared no conflicts of interest.

References

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