

# Brucellar Arthritis of the Elbow: Case Report

## Dirseğin Brusellar Artriti

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**ABSTRACT** Brucellosis is a rather common infectious disease. Hip and knee are most commonly affected joints. In this study, we are presenting a case with brucellar arthritis of the elbow, which is an extremely rare localization for the disease. A 13 years old girl presented with pain in her right elbow. MRI with contrast, revealed increase in the amount of joint fluid and contrast accumulation in the synovium, with no osseous changes. Agglutination test was positive. It was learnt from her parents that the family was residing in a region where fresh and unpasteurized cheese consumption was regular. The diagnosis was brucellar arthritis. Antibiotherapy, including rifampicine, doxycyclin and gentamycine was initiated. In the 6th week of the follow-up, the elbow was fully functional. It has been 36 months since the presentation of the patient and there is no sign of recurrence. Elbow is very rarely affected in patients with Brucellosis. Though, symptoms are similar with pyogenic arthritis, discrimination is easy by imaging and blood tests. Treatment is same with other forms of brucellosis and consists of antibiotherapy, whilst surgery is not indicated.

**Key Words:** Brucellosis; arthritis, infectious; elbow joint; child

**ÖZET** Bruselloz oldukça sık görülen bir enfeksiyondur. Kalça ve diz eklemleri hastalığın en çok tuttuğu eklemlerdir. Bu çalışmada, bruselloz için oldukça nadir bir yerleşim olan dirsekte yerleşen bir bruselloz olgusu sunulmaktadır. 13 yaşında bir kız çocuğu sağ dirsek ağrısı şikâyetiyle ailesi tarafından muayeneye getirildi. Kontrastlı MR görüntülemesinde eklem sıvısı artışıyla beraber, osseöz değişikliklerin eşlik etmediği, sinovyal dokuda kontrast birikimi saptandı. Aglutinasyon testi pozitif. Hastanın ailesinden; taze, pastörize edilmemiş peynir tüketiminin sık olduğu bir bölgede ikamet ettikleri öğrenildi. Tanı brusellar artrit olarak kondu. Rifampisin, doksisisiklin ve gentamisinden oluşan bir antibiyoterapi düzenlendi. Takibin altıncı haftasında dirsek tamamen sorunsuzdu. Otuz altı haftalık takip sonunda nüks bulgusu görülmedi. Dirsek bruselloz için çok nadir bir yerleşim yeridir. Piyojenik artrit ile bulguları benzer olsa da görüntüleme ve kan testleri ile ayırım kolaydır. Tedavisi diğer bruselloz formları ile aynı olup; antibiyoterapiden ibarettir. Cerrahi endikasyonu yoktur.

**Anahtar Kelimeler:** Bruselloz; artrit, enfeksiyöz; dirsek eklemi; çocuk

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Brucellosis is a rather common systemic infectious disease, affecting various tissues and systems. Among these, musculoskeletal system is known as a common localization.<sup>1-3</sup> Most common forms of the musculoskeletal brucellosis are arthritis, sacroileitis, spondylitis, bursitis and osteomyelitis.<sup>2,4</sup> In the literature, there are numerous reports about patients with brucellosis of the spine, hip and the knee.<sup>1,2,5</sup> In this study, we are presenting a case with brucellar arthritis of the elbow and thus discuss the con-

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flicts, encountered during the treatment of the disease. Written and informed consent of the patient and her parents was obtained.

## CASE REPORT

A 13 years old girl presented to our institute with pain and swelling in her right elbow. Movements of the elbow was slightly restricted due to pain. She had local tenderness around her elbow and the joint was warm. Standart antero-posterior (AP) and lateral x-rays of the elbow revealed normal findings and no osseous pathologies were encountered (Figure 1). Ultrasonographic examination of the affected elbow demonstrated effusion within the joint leading to slight enlargement of the joint. White blood cell count (WBC) was within normal ranges with a mean value of  $9,6/\text{mm}^3$ , erythrocyte sedimentation rate (ESR) and CRP were over normal limits with values of 95 mm/hour and 51,4 respectively. An MRI with contrast, revealed severe increase in the amount of the joint fluid and contrast accumulation in the synovium with no osseous changes (Figure 2). *Brucella* standard tube agglutination test was made and it was positive at a titer of 1/160, whilst Gruber Widal test for *Salmonella* was negative. Synovial fluid was obtained by aspiration and the analysis of the fluid revealed existence of mononuclear cells but no microbiological agents. Parents of the patient were questioned accordingly and it was understood that the family was residing in a region where fresh and unpasteurized cheese consumption was regular. The diagnosis was set as arthritis due to *Brucella* species. The patient was consulted with paediatricians and

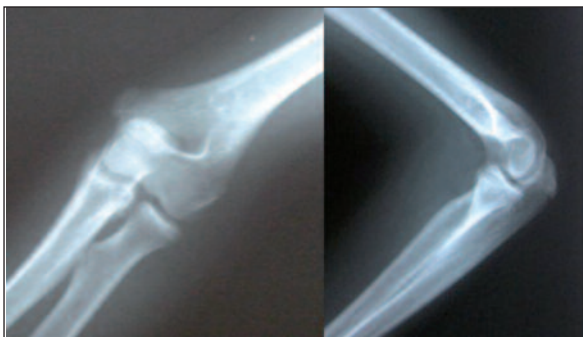


FIGURE 1: Standart x-rays of the elbow revealed normal findings.

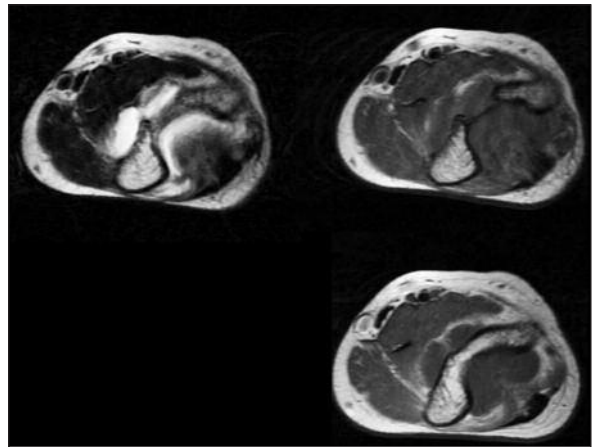


FIGURE 2: MRIs reveal effusion and contrast accumulation within the synovium. No osseous changes can be seen on the MRIs.

antibiotherapy, consisting of rifampicine (15 mm/kg/day, Rifampin), doxycyclin (4 mg/kg/day, Monodoks) and gentamycine (6 mg/kg/day, Genta) was initiated. Rifampicine and doxycycline were administered for 6 weeks and gentamycine for 10 days. At the end of first week there were severe improvement in the symptoms of the patient. After 6 weeks of antibiotherapy pain was completely resolved and the patient could use her elbow without any restrictions. It has been 36 months since the initial presentation of the patient and there is no sign of recurrence.

The study was approved by the Local Ethical Committee of Baltalimani Bone and Joint Diseases Hospital.

## DISCUSSION

Brucellosis is a rather common systemic disease occurring especially in regions where consumption of fresh dairy products is regular. Microbiological agents responsible for the disease are *Brucella* species. Though the infection is usually diagnosed in the systemic form, musculoskeletal system is also oftenly affected. Most common forms of the musculoskeletal brucellosis are sacroileitis, spondylitis, bursitis, osteomyelitis and in sporadic cases arthritis.<sup>4</sup> Though there are numerous reports about hip and knee involvement of the disease, involvement of the elbow is very rarely encountered.<sup>1,2,5</sup> In some

sporadic studies olecranon bursitis have been reported.<sup>4,6</sup> To our knowledge, this is the first case of brucellar arthritis of the elbow, in the literature.

Symptoms of brucellar arthritis are similar with any other forms of septic arthritis. There are some key characteristics of the infection, making it possible to make a discrimination between brucellosis and a pyogenic arthritis. WBC levels are usually within normal ranges whilst other serologic parameters such as ESR and CRP are slightly over normal limits. Movements of the joint are rather good when compared with a classic pyogenic septic arthritis. Swelling and the warmth of the joint are also less. Most important feature of brucellosis, making the orthopaedic surgeon suspect brucellosis, is the patient's story about consumption of fresh, unpasteurized dairy products.

Diagnosis of the disease is usually made by imaging studies and specific blood tests. The effusion within the joint can be diagnosed by ultrasonography and an MRI with contrast reveals typical contrast accumulation in the synovium. MRI also demonstrates that the osseous tissues are not affected, a key point for discrimination with pyogenic arthritis. Gold standart for true diagnosis of Brucellosis is standard tube agglutination test.<sup>7</sup> Pos-

itive results supports a *Brucella* infection. Though in endemic regions aspiration may be omitted, it would be helpful to make a discrimination between septic and non-septic diseases in regions where the disease is not endemic.

Surgery is not indicated for brucellar arthritis. The disease responds well to antibiotherapy thus discrimination with septic arthritis is of great importance. There are various treatment regimens used for brucellosis. In their study, Solera et al. recommended combination therapy including doxycycline and streptomycin as the first choice of treatment and a second choice regimen consisting of doxycycline and rifampicine.<sup>8</sup> We have preferred combination of doxycycline, rifampicine and gentamycine for treating our patient and she responded rather good. Gentamycine was included because of the joint involvement and it was used only for 10 days.

Elbow is an extremely rare localization for brucellosis. Though symptoms are similar with classic pyogenic arthritis, discrimination is easily made by imaging studies and specific blood tests. Treatment is the same with other forms of brucellosis and consists of antibiotherapy. Surgery is not indicated.

## REFERENCES

1. Benjamin B, Khan MR. Hip involvement in childhood brucellosis. *J Bone Joint Surg Br* 1994;76(4):544-7.
2. Lubani M, Sharda D, Helin I. *Brucella* arthritis in children. *Infection* 1986;14(5):233-6.
3. Muñoz C, Trujillo G, Latorre C, Juncosa T, Huget R. [Osteoarticular infections in children]. *Enferm Infecc Microbiol Clin* 1992;10(5):286-9.
4. Turan H, Serephanoglu K, Karadeli E, Timurkaynak F, Arslan H. A case of brucellosis with abscess of the iliacus muscle, olecranon bursitis, and sacroiliitis. *Int J Infect Dis* 2009;13(6):e485-7.
5. Khateeb MI, Araj GF, Majeed SA, Lulu AR. *Brucella* arthritis: a study of 96 cases in Kuwait. *Ann Rheum Dis* 1990;49(12):994-8.
6. Hyun DY, Palazzi DL. Brucellosis of the sternum and olecranon in an adolescent. *Pediatr Infect Dis J* 2007;26(1):92.
7. Tanir G, Tufekci SB, Tuygun N. Presentation, complications, and treatment outcome of brucellosis in Turkish children. *Pediatr Int* 2009;51(1):114-9.
8. Solera J, Martínez-Alfaro E, Espinosa A. Recognition and optimum treatment of brucellosis. *Drugs* 1997;53(2):245-56.