

## Brucellar Septic Monoarthritis of the Knee: Is it a Result of Chronic Brucellosis?

### Dizin Brusellar Septik Monoartriti: Kronik Brusellozun bir Sonucu mu?

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#### Abstract

Brucellosis is a zoonotic disease which causes a broad spectrum of clinical manifestations seen endemically in Turkey like in many parts of the world. Septic arthritis can rarely be the only clinical presentation. For diagnosis, microbiological examination of synovial fluid is necessary. In this case report we aimed to present a case of brucellar septic monoarthritis of the knee of which the culture and tube agglutination were both positive.

**Key words:** Brucellosis, septic arthritis, arthroscopy, culture positivity

#### Öz

Brusellozis dünyanın birçok bölgesinde olduğu gibi Türkiye’de endemik olarak görülen, çeşitli klinik tablolara neden olan zoonotik bir hastalıktır. Septik artrit nadiren hastalığın tek bulgusu olabilir. Tanı için sinoviyal sıvının mikrobiyolojik incelemesi gereklidir. Bu makalede kültür ve tüp aglütinasyon pozitifliğinin bir arada olduğu dizde gelişen bir brusellar septik monoartrit vakasının sunulması amaçlanmıştır.

**Anahtar kelimeler:** Brusellozis, septik artrit, artroskopi, kültür pozitifliği

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#### Introduction

Brucellosis is a systemic infectious disease. It has a global importance and it still is a significant medical problem in rural areas of Turkey. Osteoarticular involvement is seen frequently, and joint involvement is often like sterile reactive arthritis.<sup>1,2</sup> Septic arthritis is rarely a manifestation of Brucellosis. We aimed to present a case of knee monoarthritis caused by *Brucella spp.*

#### Case Report

A 58-year-old man living in Niğde, Turkey was presented to our hospital with pain and limited movement at his right knee during the previous fifteen days. According to the interview with the patient, he had a livestock history until 2009, and direct contact with sheep and goats. He had an operation history including aortic and mitral valve replacement in 2009. Before the operation, he had a febrile period with arthralgia, myalgia and signs of heart failure, but no test has been performed about *Brucella*.

On admission, he was afebrile and other vital findings were within normal ranges. There was erythema, swelling, heat increase and tenderness over his right knee. His

blood tests were evaluated; white cell count, liver and renal parameters were within normal limits. C-reactive protein and erythrocyte sedimentation rates were 19,9 mg/L and 15 mm/h, respectively. Anti-streptolysin-O and rheumatoid factor were negative. Antero-posterior X-ray of his knee was nonspecific (Fig.1), but lateral X-ray showed marked joint effusion (Fig.2).



**Fig 1.** Antero-posterior X-ray of the knee



**Fig 2.** Lateral X-ray pointing out marked joint effusion

Considering the patient's significant symptoms, an arthroscopic debridement was performed. Examination of the synovial fluid showed 80.000cells/mm<sup>3</sup> with predominance of lymphomononuclear cells. Rose Bengal lam agglutination test was positive and standart serum tube agglutination test was found to be positive with a titre of 1/640. Gram-negative coccobacillus was isolated from the synovial fluid culture and identified as *Brucella spp.* on the basis of TSI (tree sugar iron), catalase, oxidase, and urea.

A standart antibiotic regimen, including streptomycine 1 g/day, rifampicin 600 mg/day and doxycycline 200 mg/day was applied for 3 weeks and then streptomycine treatment was stopped and the therapy was continued with rifampicin plus doxycycline. This combination of antibiotics was applied for 6 weeks. He had recovery in clinical signs and symptoms at the end of the therapy.

### Discussion

Brucellosis is still a significant medical problem and an endemic infection in Turkey, especially in central, southeast and east parts of Anatolia. Osteoarticular involvement is often seen as reactive arthritis which involves two or more joints and has roving characteristic, its incidence varies between 20% to 85%. Septik monoarthritis can rarely be the only clinical sign of brucellar arthritis.<sup>3-8</sup> In a retrospective study performed in adults, the rate of osteoarthricular involvement was found as 36.5%. Sacroiliitis was the most common involvement (60.9%), followed by peripheral arthritis (19.5%).<sup>1</sup>

The diagnosis of brucellar septic arthritis is based on examination and culture of the synovial fluid and some supportive serological tests. In this respect, aspiration of synovial fluid has an importance. Examination of the synovial fluid should show a lymphomononuclear cell predominancy. Although rate of culture positivity is approximately 50%, in our case we have a positive result as *Brucella spp.* In serological tests, the standard tube agglutination test is commonly used and a titration of >1/160 is necessary for the diagnosis. In our case, we have both culture and tube agglutination positivity.

Brucellosis can cause a life threatening clinical course, because of complications including neurobrucellosis and endocarditis. It is an important point that; before aort and mitral valve replacement, there were fever, arthralgia, myalgia and a history of livestock in our case. This history gives rise to the thought that; valve degeneration might have been because of the brucellar endocarditis. Therefore; we must bear brucellosis in mind as the origin of unknown fever in the differential diagnosis in endemic or non-endemic areas.

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