

## Two cases of brucellosis epididymo-orchitis

### *Brusella epididimo-orşitli iki olgu*

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#### ABSTRACT

Epididymoorchitis caused by *Brucella* species is a rare infection. In this report two cases of epididymoorchitis due to brucellosis are presented with their clinical and laboratory findings. The patients complained of fever, and painful testicles with swelling, the duration of which varied between 7 to 10 days. They had unilateral epididymoorchitis. Brucellosis was diagnosed serologically in all patients, whereas *Brucella* spp. was isolated from the blood culture of one patient. One patient was given rifampicin and doxycycline, and the other streptomycin, doxycycline and rifampicin. In all cases, complete resolution was achieved with medical treatment and relapse did not occur. Brucellosis should be considered in differential diagnosis of epididymoorchitis in endemic areas.

**Key words:** Brucellosis, epididymoorchitis, *Brucella* spp

#### INTRODUCTION

Brucellosis is a zoonosis, and almost all infections derive directly or indirectly from exposure to animals or their products [1-2]. The disease exists worldwide, but is especially hyperendemic in the Mediterranean basin; the Arabic peninsula, India; and in parts of Mexico, Central, and South America [1].

Brucellosis is a disease of various clinical presentations in which any organ or system can be involved, so its diagnosis and treatment may often be problematical. During bacteremia many organs may be involved representing atypical clinical forms. Among those, the involvement of skeletal, gastro-

#### ÖZET

*Brucella* türlerinin neden olduğu epididimoorşit nadir bir enfeksiyondur. Bu makalede bruselloza bağlı gelişen iki epididimoorşit olgusunun klinik ve laboratuvar bulguları sunulmuştur. Tüm olgularda ateş, testis ağrısı ve şişliği vardı. Hastaların yakınmalarının süresi 7-10 gün arasında değişmekteydi. Hastaların hepsinde tek yanlı epididimoorşit vardı. Bruselloz tanısı tüm olgularda serolojik olarak konuldu. Bir hastada kan kültüründen *Brucella* spp. izole edildi. Olgulardan biri rifampisin ve doksisisiklin tedavisi ile iyileşti, diğeri ise streptomisin, doksisisiklin ve rifampisin ile tedavi edildi. Tüm olgularda medikal tedavi ile tam iyileşme sağlandı ve relaps izlenmedi. Endemik bölgelerde epididimoorşitle başvuran hastalarda bruselloz ayırıcı tanıda göz önünde bulundurulmalıdır.

**Anahtar kelimeler:** Bruselloz, epididimoorşit, *Brucella* spp.

intestinal, nervous, and the genitourinary system is frequently encountered [1-3]. Genitourinary complications are seen in approximately 2-10% of brucellosis, with the leading form as epididymoorchitis [1-3]. These complications are accompanied by nonspecific sign and symptoms of brucellosis, such as fever, malaise, chills, night sweats, headache, weight loss, arthralgia, nausea-vomiting, backache, localized or generalized lymphadenopathy, splenomegaly, hepatomegaly, rarely endocarditis, convulsions, meningitis, encephalitis, and maculopapular rash [1].

We, here, report two cases of brucellosis complicated with epididymoorchitis.

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## CASE 1

A male, 48 years old, admitted to the Infectious Diseases clinic with fever, malaise, night sweats, pain in knees, swelling on the left testis for ten days. Brucella standard tube agglutination test revealed a positive result of 1/320 titer. On the physical examination fever of 38.5°C, and painful left testis with redness and swelling were found. The other physical findings were normal. USG revealed splenomegaly. Laboratory findings were as; leukocytes (WBC) 6.830/ mm<sup>3</sup> (52% PNL, 40% lymphocyte, and 8% monocyte), platelet (Plt) 128.000/ mm<sup>3</sup>, erythrocyte sedimentation rate (ESR) 35 mm/hour, ALT 110 U/L, AST 79 U/L, GGT 93 U/L, LDH 552 U/L, C-reactive protein (CRP) 100 mg/dL (within 0-5 mg/dL), Brucella tube agglutination test of 1/320 titer. The patient was given rifampicin (RIF) 600 mg/day (6 weeks), doxycycline (DOX) 200 mg/day (6 weeks), and streptomycin (SM) 1gr/day (21 days). *Brucella* spp was isolated from his hemoculture. Fever was normalized on the 8th day of therapy. Laboratory findings on the 10th day were as: WBC 5.750/ mm<sup>3</sup>, ESR 30 mm/hour, ALT 48 U/L, AST 27 U/L, GGT 80 U/L, LDH 242 U/L, CRP 8 mg/L. His testicular pain and swelling regressed.

## CASE 2

25 years old male admitted to the Urology clinic with fever, diffuse arthralgia, myalgia, swelling and pain in his right testicle for five days. Physical examination revealed fever of 39°C, redness and swelling in the right testicle. Lab findings of WBC 15.000/mm<sup>3</sup>, Plt 140.000/mm<sup>3</sup>, CRP 100 mg/L were detected, and oral ciprofloxacin was initiated with a diagnosis of epididymo-orchitis. Known to be in an endemic place, Brucella tube agglutination test was performed with a positive result of 1/640 titer. After an Infectious Diseases consultation, DOX 200 mg/day (6 weeks) and SM 1gr/day (21 days) were given. His fever was disappeared on the 5<sup>th</sup> day, whereas his testicular pain and swelling recovered on the 12<sup>th</sup> day.

## DISCUSSION

Brucellosis is a zoonosis caused by *Brucella* species, in which various organs or systems can be involved [1,3]. Though it is an occupational risk especially

for workers of animal husbandry, the whole population may be under risk in countries with poor food hygiene and sanitation. Main routes of transmission from animals to humans include direct contact with infected animals or its abort material, and by ingestion of unpasteurized or raw dairy products [1,2,4].

The most frequent complication in the genitourinary system is epididymo-orchitis. Its incidence varies with 2-10%, and is usually unilateral [1,2]. Our cases, too, had unilateral involvement. Yetkin et al followed 186 brucellosis cases in a 4 year period, and reported *Brucella* epididymo-orchitis (BEO) in 17 (9.1%) cases, 88% of which to have unilateral involvement [5]. BEO, acute or chronic, usually appears as a unilateral testicular swelling. Its differential diagnosis may be troublesome with regard of other scrotal pathologies [4,6]. *Brucella* orchitis mimics testicular malignancy or tuberculosis [4]. Because of the uneasy differential, cases diagnosed only after radical orchiectomy were reported in the literature [6]. Just happened in our second case, not to underdiagnose BEO, it is crucial to always remember the microorganism, *Brucella* spp, in the differential. In countries where animal husbandry and livestock are common, like our country, brucellosis gains importance. A good history taking with careful physical examination, and also tests like *Brucella* tube agglutination with or without Coombs, Rose Bengal test, and serological tests are helpful for the diagnosis.

Delayed diagnosis and insufficient treatment may result in complications such as abscess formation and suppurative necrosis [4,7]. In their series of BEO, Yetkin et al reported complete recovery with medical therapy in 17 patients [5]. Orchiectomy is recommended when there is no response to medical therapy or abscess formation [7]. Our two cases responded well to the medical therapy.

Brucellosis usually begins with non-specific signs and symptoms, and eventually gives the clinical picture related to the organ involved [4]. In brucellosis series, the most frequent sign and symptoms reported including fever (61.2-93%), malaise (76-97.5%), sweating (70.9-91%), arthralgia (57-65%), hepatomegaly (8.6-34.5%), splenomegaly (10.7-25.5%), lymphadenopathy (7-11.4%) and arthritis (5.7-40%) [2-4].

Physical findings in BEO include fever, scrotal swelling, tenderness, redness; hepatosplenomegaly, diffuse lymphadenopathy, rash [6,7]. Fever is seen 74-100% of cases, whereas testicular pain and swelling in 91-100%, hepatosplenomegaly in 25-31% [6,7]. Both of our two cases had complaints of fever, myalgia, painful testicular swelling, malaise, loss of appetite, night sweats, and myalgia for approximately 7 days. Physical examination revealed testicular pain, swelling, and redness. One had splenomegaly.

Non-specific lab findings include increased CRP and ESR; AST and ALT abnormalities, and sometimes anemia, leukopenia, leukocytosis and thrombocytopenia may occur [4]. Memish and Venkatesh reported that 23% of BEO cases had leukocyte count of upper than 10.000/mm<sup>3</sup>, 31% had ESR of upper than 40 mm/hour. None of their patients had anemia or thrombocytopenia [4]. One of our cases had normal leukocyte count, thrombocytopenia, elevated liver enzymes, elevated CRP and ESR. The other patient had normal liver enzymes.

Brucellosis is mainly diagnosed with patient history, clinical findings, and most importantly with Brucella tube agglutination or blood culture positivity [4,5]. In the reports of BEO cases, blood culture positivity varies between 14% and 69% [4]. One of our two cases had blood culture positivity.

The combination and long duration of antibiotics is crucial for treatment of brucellosis [1,2]. World Health Organisation recommends regimen of 45 days of DOX 100 mg q12 po plus 15 days of SM 1 g/day im. Alternatively, a regimen of 45 days of DOX 100 mg q12 po plus RIF 15 mg/kg/

day (600-900 mg) po is also available [2]. In BEO cases, various combination of SM, RIF, and DOX of 45 days regimens are reported to be effective, and no difference is found between those groups [1,3-5]. Our cases were given SM (21 days) plus DOX (42 days) or SM (21 days) plus DOX and RIF (42 days). Fever disappeared in the 8<sup>th</sup> day latest, the all had complete recovery. No recurrence was observed during follow up.

Consequently, brucellosis should be kept in mind in the differential diagnosis of epididymo-orchitis coming from endemic areas. This is crucial for not losing time for appropriate therapy, and also avoid unnecessary surgery.

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