

Different presentation types of primary *Brucella* epididymo-orchitis

Huseyin Aydemir¹, Gokcen Budak², Salih Budak³, Orcun Celik³, Okan Yalbuздag³, İbrahim Keles⁴

¹ Department of Urology, Ministry of Health Sakarya Teaching and Research Hospital, Sakarya, Turkey;

² Department of Infectious Disease Clinic, Tire State Hospital, Sakarya, Turkey;

³ Tepecik Educational and Research Hospital, Department of Urology, Izmir, Turkey;

⁴ Department of Urology, School of Medicine, Afyon Kocatepe University, Afyonkarahisar, Turkey.

Summary *Brucellosis is a zoonotic disease that involved genitourinary system in 2-20% and most commonly cause single sided epididymo-orchitis. In our country Brucella is an endemic disease and causes serious and different diagnosis of acute scrotum and epididymo-orchitis. In this paper six cases of epididymo-orchitis cases which were resistant to classical treatment were discussed according to clinical and laboratory findings. We describe different types of presentation of Brucella epididymo-orchitis with diagnosis and treatment modalities.*

KEY WORDS: *Brucellosis; Testis; Epididymo-orchitis; Acute scrotum; Infection.*

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INTRODUCTION

Brucellosis is spread to humans by infected or contaminated animals and less than sufficiently pasteurized milk and milk products (1, 2). Brucellosis can infect many organs and present with different clinical symptoms (3). Brucellosis infects genitourinary system in 2-20% and most commonly causes single sided epididymo-orchitis (3). *Brucella* epididymo-orchitis (BEO) generally causes acute clinical symptoms (78%) (3-5). Differential diagnosis of the disease with other emergency urological conditions causing acute scrotum (testicular torsion, testicular tumors, etc.) must be conducted precisely to prevent consequences of surgery.

This paper is aimed to describe differential diagnosis of epididymo-orchitis cases that are resistant to classical treatment or recurrent considering diagnosis and treatment of Brucellosis that still maintains its importance. It also calls attention to different clinical pictures of *Brucella* epididymo-orchitis.

CASE REPORTS

Case 1 (unsuccessful treatment)

A 42 years old male patient with right testicular pain, edema and fever started 2 months before was treated without success for recurrent orchitis in another center.

No conflict of interest declared.

Patient developed joint and muscle pain lately. At physical examination, body temperature was 37.2°C, swelling on right testicle with extensive tenderness was present, epididymis was hard, scrotum was erythematous and local temperature increased. Examination of other systems was normal. Scrotal color Doppler ultrasonography reported findings consistent with right epididymo-orchitis. Laboratory findings included leucocytes 8700/mm³, sedimentation rate 27 mm/h, CRP 30 mg/L and tube agglutination test positive at 1/160 titers. There was no growth in blood cultures. Patient was treated with rifampicin 600 mg/day, doxycycline 200 mg/day and anti-inflammatory treatment for 6 weeks. Symptoms were regressed after first week of treatment. There was no recurrence on the follow up.

Case 2 (septicemia)

A 63 year old male patient working with farm animals, presented with fever, night sweating and joint pain for 15 days. For the last 2 days he had dysuria, swelling in the right testicle and pain. Physical examination showed 37.8°C body temperature, right epididymis very tender and swelling of the testicle, local erythema of the scrotum with temperature increase. Physical examination of other systems was normal. Laboratory results showed leucocyte count 13500/mm³, sedimentation rate 67 mm/h, CRP 70 mg/L, *Brucella* tube agglutination test positive for 1/640 titer. *Brucella* spp. growth was documented in blood cultures. Whereas there was no growth in urine culture. Patient's treatment was planned for 6 weeks with rifampicin 600 mg/day, doxycycline 200 mg/day and anti-inflammatory treatment but in the second week of his treatment testicular pain was not regressed and patient continued to have frequent fever (38°C). One g/day streptomycin IM was added to treatment for two weeks and treatment was finished up to 6 weeks. After addition of streptomycin on the 3rd day of treatment patient complaints were relieved dramatically. There was no relapse in 18 months follow up.

Case 3 (acute scrotum, septicemia)

A 27 year old male farmer presented with acute left testicular pain, fever, shivering, nausea and vomiting start-

ed one day before. At physical examination his body temperature was 38.7°C and blood pressure was 90/60 mmHg, he had minimal swelling of left testis, severe tenderness whereas examination of other systems was normal. Laboratory findings showed leucocyte count 21000/mm³, sedimentation rate 50 mm/h, CRP 77 mg/L. Scrotal color Doppler ultrasonography revealed finding of left epididymo-orchitis. Patient was hospitalized, monitored and treated with 2 g/day ceftriaxone. On the 3rd day of treatment, symptoms and vital findings were not recovered enough, left testicular edema increased dramatically and erythema and edema involved the left side of scrotum. Brucella was suspected and Coombs test for Brucella was positive, tube agglutination test was positive for 1/320 titer. In blood culture Brucella spp. growth was observed. Patient was treated with rifampicin 600 mg/day, doxycycline 200 mg/day and streptomycin 1 gr/day IM. Vital findings were normalized after the 2nd day of treatment. Testicular findings recessed after 2 weeks. Patient's treatment was completed in 6 weeks (streptomycin at 15th day). Patient did not have any recurrence orchitis but due to recurrent arteritis patient was transferred to specialized clinic.

Case 4 (nonspecific epididymo-orchitis)

A 50 years old male patient presented with dysuria and right testicular pain for 6 weeks. At physical examination tenderness of right testicular and inguinal canal was present, vital findings and other systems examination was normal. In laboratory findings leucocyte count was 4500/mm³, sedimentation rate was 12 mm/h and CRP was 9 mg/L. Scrotal color Doppler ultrasonography showed findings consistent with right epididymo-orchitis. Patient was treated with ciprofloxacin 100 mg/day. At the 4th day of treatment patient presented again with high fever and swelling of right testicle. Physical examination revealed swelling of right testicle, erythema and temperature increase at the right side of the scrotum. His body temperature was 38.2°C. Patient detailed history revealed that he was treated for Brucellosis 6 months prior. Brucellosis Coombs test was positive and tube agglutination test was positive for 1/160 titer. There was no growth in blood and urine cultures. Patient was treated with rifampicin 600 mg/day, doxycycline 200 mg/day and anti-inflammatory drugs for 6 weeks. His symptoms were diminished after the first week of treatment. There was no recurrence in 6 months follow up of the patient.

Case 5 (bilateral epididymo-orchitis)

A 22 years old male patient presenting with long lasting bilateral testicular pain. Physical examination showed minimal tenderness of both testicles, vital findings and other system examination were normal. Laboratory findings showed no specific findings in urinary analysis, leucocyte count 4100/mm³, sedimentation rate 8 mm/h, and CRP 6 mg /L. Scrotal color Doppler ultrasonography revealed bilateral testicular increased blood flow. Patient's family was treated for Brucellosis, so Brucellosis panel was studied. Rose Bengal test was positive and tube agglutination test was positive for 1/160 titer. There was no growth in blood or urine culture. Patient was treated with rifampicin 600 mg/day, doxycycline 200 mg/day and anti-

inflammatory drugs for 6 weeks. Patient's symptoms were decreased after the 2nd week of the treatment. There was no recurrence in the 3 month follow up of the patient.

Case 6 (testicular tumor suspicion)

A 30 years old male patient presented to the urology clinic with a left testicular painful mass. Physical examination revealed left testicular stiffness at palpation. Examination of other system was normal. There was no significant clinical or family history. Laboratory findings included leucocyte count 10200/mm³, CRP 72 mg/L, α -feto protein (AFP) 1.8 (< 13.4), BHCG < 1.2. Emergency scrotal ultrasonography showed an hypodense 31.8 mm solid mass of left testicle. After a preliminary diagnosis of seminoma, magnetic resonance imaging (RMI) was scheduled that demonstrated unclear demarcation of the mass with heterogeneous pattern that was reported as consistent with epididymo-orchitis (Figure 1). Brucella tube agglutination test was positive for 1/250 titer. There was no growth in blood culture. Patient was treated with rifampicin 600 mg/day and doxycycline 200 mg/day. Pain and swelling regressed and scrotal ultrasonography 2 week after treatment showed dramatic regression. Ultrasonography conducted 3 months later showed further decrease of mass size and at 1 year follow up ultrasonography findings were normal. There was no recurrence at 2 years follow up.

Figure 1.

Left testicular heterogeneous mass, consistent with epididymo-orchitis.



DISCUSSION

Brucellosis is very rare in developed countries. But it is an endemic zoonotic disease in the Mediterranean basin and Middle East (2). Turkey is in the Brucellosis endemic region and its incidence is 2-6% (6). In systemic brucellosis, epididymo-orchitis is most commonly seen as unilateral (3, 6, 7). In a study of 12 cases with genitourinary

complications due to Brucellosis, 10 cases presented with epididymo-orchitis (5). In the same study the ten BEO patients were compared with 15 non-specific epididymo-orchitis (EO) cases and BEO was characterized by long-lasting clinical presentation, history of unpasteurized milk consumption, lower urinary system symptoms, normal urinary analysis and frequent leukocytosis (5). Some tests are required for the diagnosis of brucellosis, in addition to patient history and physical examination (rose bengal, tube agglutination, Coombs test, blood culture). Values of tube test higher of 1/160 titer and blood culture positivity are important for diagnosis (8). Delayed diagnosis and treatment, can lead to various complications (e.g., testicular abscess, atrophy, necrosis and infertility) (9). It is very difficult to distinguish BEO from non-specific EO (10). Detailed history from the patient is important for diagnosis in case of EO unresponsive to conventional therapy, that should bring to mind brucella EO.

Acute epididymo-orchitis is a frequent disease in urology clinic and one of the causes of acute scrotum. Differential diagnosis of acute scrotum includes testicular torsion, testicular tumors, appendicular testicular torsion and testicular trauma. Diagnosis of torsion and tumor are crucial because they require fast treatment, so further radiological tests must be considered. In our 6th case, even though ultrasonography diagnosis was consistent with a testicular tumor MRI results demonstrated epididymo-orchitis. Tumor markers in the normal range and tube agglutination test consistent with Brucellosis helped the clinical diagnosis. In consideration of the association of tumor and epididymo-orchitis, frequent and close follow up is suggested.

World Health Organization recommends a 45 day course of oral doxycycline 200 mg/day and streptomycin 1 g/day IM for Brucellosis treatment. An alternative is a 45 day course of oral rifampicin 15 mg/kg/day (600-800 mg) and doxycycline 200 mg/day (11). In cases unresponsive to medical treatment orchiectomy is practiced. Afsar *et al.* reported 2 cases requiring orchiectomy in a 13 cases study with doxycycline and rifampicin treatment (12).

In conclusion, Brucella epididymo-orchitis must be kept

in mind in the differential diagnosis of acute scrotum and epididymo-orchitis in Brucella-endemic countries.

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Correspondence

Aydemir Huseyin, MD

Department of Urology, Ministry of Health Sakarya Teaching and Research Hospital, Sakarya, Turkey

Gökçen Budak, MD

Department of Infectious Disease Clinic, Tire State Hospital Sakarya, Turkey

Salih Budak, MD (Corresponding Author)

salihbudak1977@gmail.com

Orcun Celik, MD

Okan Yalbuçdag, MD

Tepecik Educational and Research Hospital, Department of Urology 35140 Izmir, Turkey

İbrahim Keles, MD

Department of Urology, School of Medicine, Afyon Kocatepe University Afyonkarahisar, Turkey