

BRUCELLA ABORTUS EPIDIDYMO-ORCHITIS RELAPSING IN THE OPPOSITE TESTIS AFTER THREE MONTHS

ÜÇ AY SONRA KARŞI TESTİSTE TEKRARLAYAN *BRUCELLA ABORTUS* EPİDİDİMO-ORŞİTİ

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SUMMARY

Epididymo-orchitis caused by Brucella species is a rare infection. In this article, a 47-year-old man with relaps of Brucella abortus epididymo-orchitis in the opposite testis is presented. Testicular atrophy and aspermia occurred in the patient despite antibiotic therapy.

ÖZET

Brucella türlerinin neden olduğu epididimo-orşit ender görülen bir enfeksiyondur. Bu yazıda, karşı testisinde tekrarlayan Brucella abortus epididimo-orşitli 47 yaşında bir olgu sunulmuştur. Antibiyotik tedavisine karşın hastada testis atrofisi ve aspermi gelişmiştir.

INTRODUCTION

Epididymo-orchitis is a rare manifestation of brucellosis. *Brucella* species cause granulomatous orchitis usually presenting as an acute or chronic unilateral swelling of the testis (1). Brucellosis is an endemic disease in Turkey. In this case report, a patient with *Brucella abortus* epididymo-orchitis relapsing in the opposite testis after three months is presented.

CASE

A 47-year-old male was admitted to the hospital with complaints of high fever, arthralgia, night sweats, and painful left scrotal swelling four months in duration. He was working in the microbiology laboratory of the hospital.

On physical examination the left hemiscrotum was tender, hyperaemic and enlarged greatly. He had a fever of 38.4° C, white blood cell count 17.000/mm³, erythrocyte sedimentation rate 49 mm/h, and CRP 136 mg/l (normal: <5 mg/l). Urine analysis and liver function tests were normal. No growth was detected in the ejaculate and urine cultures. Tumour markers (alpha-fetoprotein, beta human coryonik gonadotrophin) were measured and found in normal ranges (2.08 IU/ml and 1.73 mIU/ml, respectively). Mumps IgM was detected as negative. His standard *Brucella* tube agglutination test was positive at a titre of 1:2560. Ultrasonography of the scrotum revealed left epididymo-orchitis. Left testis was measured as 51x30x66 mm (normal size 40x30x30 mm) and right testis 27x20x32 mm. Left epididymis was also enlarged. Both of the left testis and epididymis had a heterogeneous pattern. There was no abscess formation.

Specific antibiotic therapy for brucellosis was started with rifampin (600 mg/day) plus doxycycline (200 mg/day). Testicular elevation was applied and anti-inflammatory therapy was given according to the recommendations of Urology Clinic. The diagnosis was confirmed when *Brucella abortus* was recovered from his blood cultures. Anti-microbial therapy was continued for 45 days. His clinical and laboratory abnormalities disappeared at the end of the treatment. Sedimentation rate decreased to 14 mm/h, and CRP to normal level (< 5 mg/l). His fever and scrotal swelling resolved, and complete relief of pain occurred. He retired from the microbiology laboratory and stopped consuming raw milk and milk products.

Three months later he was readmitted to the hospital complaining of fever, night sweats, weakness, and right scrotal pain and swelling. Fever (38° C), cervical lymphadenopathy, hepatomegaly, and tenderness, hyperaemia and enlargement in the right hemiscrotum were found on his physical examination. Laboratory tests revealed leucocytosis (18.000 /mm³), high CRP (138 mg/l) and sedimentation rate (30 mm/h). Tumour markers were repeated and found negative. Right epididymo-orchitis was detected in the scrotal ultrasonography. Right testis and epididymis were found enlarged (36x42x46 mm and 38x23 mm, respectively) and heterogeneous pattern was observed (Figure 1). An increased blood flow was detected in the right testis by Doppler ultrasonography (Figure 2). Right scrotal fluid was also increased (hydrocele). Left testis and epididymis were in normal dimensions. Heterogeneous fibrous bands were detected in both of the testis. *Brucella* titres were positive at 1:3200 dilution and *B. abortus* was isolated in his blood culture. Specific treatment for brucellosis was restarted with doxycycline (200 mg/day) plus streptomycin (1x1 g im). Doxycycline was continued for eight weeks and streptomycin for three weeks. He was consulted with Urology Clinic again and symptomatic treatment (testicular elevation and anti-inflammatory drug) was given. His fever disappeared at the fourth day of the treatment. After a week CRP and ESR decreased to 15 mg/l and 26 mm/h, respectively.

At the end of the treatment, testicular pain and swelling subsided and laboratory results reverted to normal. No scrotal fluid was observed at follow up scrotal ultrasonography. Testicular dimensions were in normal ranges but had a heterogeneous pattern. Fibrous bands had increased in both of the testis and epididymis (Figure 3). It was evaluated as a sign of testicular atrophy. A spermogram was performed at first and third month after the end of antibiotic therapy and aspermia was detected.

He was free of symptoms four months after the treatment and his laboratory results were in normal ranges (leukocyte count: 8.000/mm³, CRP: <5mg/l, ESR: 8 mm/h).

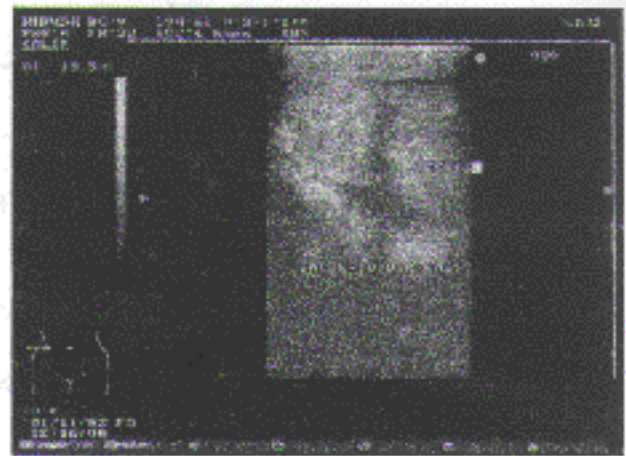


Figure 1. Longitudinal scan shows significant enlargement of the head of the epididymis with heterogeneous echogenicity.

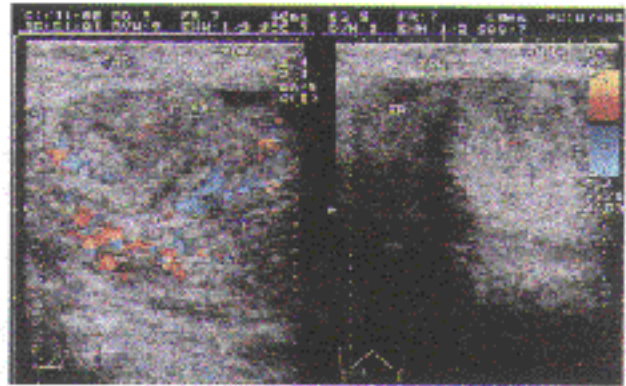


Figure 2. Comparing with the left testis, increased perfusion is apparent in the right testis and epididymis.



Figure 3. Severe orchitis may lead to testicular atrophy with replacement of the parenchyma by scar tissue.

DISCUSSION

Genitourinary involvement is rare in brucellosis. Unilateral epididymo-orchitis is the most commonly seen genitourinary infection (2). Firstly, Hardy (3) described *Brucella* species as a cause of granulomatous orchitis in 1928. Since that time many cases have been reported (1, 2, 4-6). Granulomatous orchitis secondary to brucellosis usually presents as an acute or chronic unilateral swelling of the testis (1).

The incidence of epididymo-orchitis in brucellosis has ranged from 2 to 11% in the literature (4, 6-8). In the endemic regions this rate is high. Khan et al. (2) from Kuwait had reported 14 *Brucella* epididymo-orchitis in 40 patients with epididymo-orchitis. All but one of the patients had had unilateral disease. They had been treated successfully with tetracycline for six weeks and streptomycin for two weeks (2).

Brucellosis is an endemic disease in Turkey, especially in the Southeast Anatolia. In a study (4) from that region, scrotal involvement was detected in 26 of 243 (%11) brucellosis patients. Fifteen (58%) had had unilateral involvement of the epididymis and testis, and 11 (42%) unilateral involvement of the testis only. Bilateral involvement was not seen in any patient. They had been given doxycycline plus rifampin for six-eight weeks. After medical treatment, ultrasonographic scrotal lesions in all but one of the patients disappeared within two months (4).

In some reports orchiectomy was recommended in *Brucella* epididymo-orchitis because of the difficulty in differentiation between benign and malignant diseases (1). In this case, tumour markers were negative. So testis tumour was ruled out and a clinical improvement was observed with medical treatment.

A variety of combinations have been used in the treatment of brucellosis. World Health Organization recommended the use of doxycycline (200 mg/day) plus rifampin (600-900 mg/day) for at least six weeks (9). However, a combination involving streptomycin was reported more effective for patients with spondylitis (10).

Relapses in brucellosis are mostly due to early discontinuation of the antibiotic therapy (11). It has been shown that antibiotic resistance does not cause relapse (12). Navarro-Martinez et al. (5) reported that nine of the 59 patients (15%) with *Brucella* epididymo-orchitis had failed to respond to the treatment and 15 patients (25%) relapsed. In the presented case, the patient was given six week antibiotic therapy at his first admission and he had clinical and laboratory improvement at the end of the treatment. Meanwhile, he retired from the microbiology laboratory and stopped consuming raw milk and milk products. But three months later, his disease relapsed in the opposite testis. It was thought that six-week treatment might be insufficient for *Brucella* epididymo-orchitis.

Infection limited to the testis is rare. Usually the epididymis is also involved. Sonographic characteristics of epididymitis are thickening and enlargement of the epididymis, heterogeneous echo texture, hydrocele formation, and skin thickening (13). Colour flow Doppler ultrasound usually demonstrates increased blood flow in the epididymis and testis as compared with the asymptomatic side. Isolated orchitis may also occur. In such cases, increased blood flow would be localised to the testis. Testicular involvement may be focal or diffuse. In this case, enlargement and heterogeneous pattern were detected in the ultrasonography of the testis and epididymis. At follow up sonographies, heterogeneous fibrous bands were increased and testicular atrophy occurred eventually.

The differential diagnosis of the acute scrotum includes trauma, hematocele, testis tumor, or torsion of the testicle (1). In the presented case all of these were excluded.

This case report emphasises that in endemic regions brucellosis must be considered in a patient with epididymo-orchitis, and antimicrobial treatment should be applied for more than six weeks for *Brucella* epididymo-orchitis. In addition it shows that *Brucella* species may be one of the reason of testicular atrophy and aspermia.

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