



EPIDIDYMO-ORCHITIS AS A RARE PRESENTATION OF BRUCELLOSIS

Pediatrics

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ABSTRACT

Introduction Brucellosis is a zoonotic infection by bacterial genus *Brucella*. It is an endemic disease in Saudi Arabia. Most common presenting symptoms are fever and arthritis.

Case Report A 14 years old Saudi male, sexually inactive, presented to the emergency department complaining of right testicular pain for 1 day, associated with fever.

Discussion The disease is an endemic in Saudi Arabia with a reported incidence of 18/100,000 population/year. Brucellosis diagnosed mainly by history, clinical examination, and blood culture. Usually Brucellosis Epididymo-orchitis responds well to the regular antibiotics used for *Brucella*.

KEYWORDS

Brucella; Brucellosis; Epididymo-orchitis; Saudi Arabia.

Introduction

Brucellosis is a zoonotic infection by bacterial genus *Brucella*, mainly transmitted by ingestion of raw milk from infected animals. It is an endemic disease in Saudi Arabia, its incidence was reported by Ministry of Health in 2011 and found to be 18 cases per 100000 population per year. The seroprevalence of Brucellosis in pediatric age group (0-14 years) was 10%^[1].

The presentation and severity of symptoms of Brucellosis is widely variable due to the difference between *Brucella* strains. *B. melitensis* can cause severe symptoms while *B. abortus* is associated with milder symptoms^[2]. Most common presenting symptoms are fever and arthritis. Genitourinary system involvement occur in 2-20% of cases as cystitis, pyelonephritis, glomerulonephritis, renal abscess, proctitis and epididymo-orchitis^[3].

In a retrospective study done at a tertiary hospital in Riyadh from 1983 to 2000, epididymo-orchitis occurred in 1.6% of all Brucellosis patients^[4]. Epididymo-orchitis can be seen as a subsequent part of systemic disease after the previous diagnosis of Brucellosis.

Here we are reporting a case of child with Brucellosis presented with epididymo-orchitis. More attention should be considered for possibility of brucellosis to be the cause of epididymo-orchitis specially in endemic areas as it can result in aspermia and oligospermia^[5].

Case Report

A 14 years old Saudi male, sexually inactive, presented to the emergency department on 12/9/2017. He came complaining of right testicular pain for 1 day, associated with fever but no history of testicular trauma or any urinary complains, plus all other systems were unremarkable.

On his physical examination, the patient looked well, all vitals were normal apart from his temperature that measured 38.0° c. On scrotal examination, his left scrotum was normal, but the right was larger in size and tender, but no hotness or redness. The laboratory studies showed a normal leukocyte count of $9.2 \times 10^9/L$ but the CRP was 40.4 mg/L. The urine analysis was normal in color and appearance, pH 6.0, negative blood, 1+ protein, +1 bacteria, 4+ amorphous, 0-2 WBCs and 0-2 RBCs.

Next, Doppler ultra-sonographic examination of the scrotum was done (figure 1), the right testis was 3.6 x 1.8 with altered echo-pattern with slightly increased color flow. No calcification or focal lesion seen. Left testis was larger, 4 x 1.5 cm with normal color flow. No calcification or

focal lesion seen. No signs of torsion were seen bilaterally. Left epididymis is prominent with preserved color flow at that time, while left epididymis is normal in size and color flow. There was a minimal percent of right hydrocele noted. No varicocele on either side.

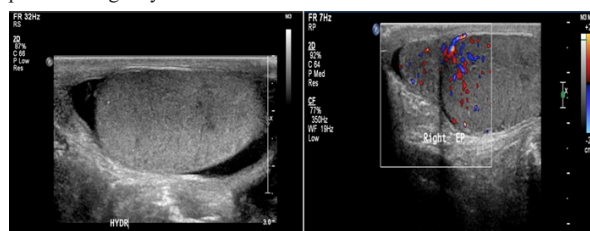


Figure 1 right testicular ultrasound

A provisional diagnosis was made as epididymo-orchitis and the patient was started on ciprofloxacin (200 mg i.v., b.i.d.), oral doxycycline (100 mg, b.i.d.), acetaminophen injection (500 mg, Q6h) and ibuprofen tablets (400 mg, t.i.d.), with bed rest and scrotal elevation. The fever persisted, and on a detailed history taking the patient gave a history of brucellosis infection that dated two months ago. The antibiotics were immediately changed to amoxicillin and clavulanic acid injections Q8h. A request for brucella titer and blood culture were sent and four days later the titer results came out high with an IgG of 143.4 and an IgM of 5.0, but both blood and urine cultures were negative. As the patient started showing improvement, he was discharged on amoxicillin and clavulanic acid 500 mg Tab TID for 5 days, and follow up appointment in the outpatient clinic.

Four days later in the follow up, patient was started on Strptomycin IM injection for 2 weeks, Doxycyclin 100 mg BID and Rifampicin 300 mg BID.

5 weeks later the patient was examined in the follow up appointment and found to have no more testicular swelling or pain. Brucella IgG titer was 133.9, IgM titer was 3.7, urine analysis showed clear urine, negative leukocyte, blood, nitrite, protein and blood, specific gravity was 1005, urine PH was 5.5.

Repeated ultrasound (figure 2) showed normal size and echotexture, no focal lesion seen. Right testis measures about 14 x 38 x 27 mm. Left testis measures about 22 x 34 x 24 mm. Vascularity is normal. There is small hydrocele in the left side measuring about 14 mm in thickness x 18 mm. No obvious varicocele seen. Both epididymides are normal. Tiny cyst is noted in the head of left epididymis.

In the next follow up after 7 weeks, the antibiotics were discontinued - after completing 12 weeks- as the patient was clinically and serologically responding to the treatment.



Figure 2 left testicular ultrasound

Discussion

Brucellosis is a zoonotic disease mainly of cattle, swine, goats, sheep and dogs.

It has become rare as a result of the institution of veterinary control measures (e.g., routine screening of domestic livestock and vaccination programs). It is caused by ingesting raw unpasteurized milk from infected animals, close contact with their secretions or through inhalation of infectious aerosols. The disease is an endemic in Saudi Arabia with a reported incidence of 18/100,000 population/year, as reported by the MOH in 2011⁶. Brucellosis continues to be reported with an increasing frequency particularly from the rural areas at 1.6–2.6%⁷. On literature review, many studies reported that the incidence was higher in spring and summer, and lower in winter⁸.

Inappropriate treatment and delayed diagnosis can result in serious complications such as abscess formation⁹. Brucellosis diagnosed mainly by history, clinical examination, and blood culture^{8,9}.

Combination of antibiotics for long duration is necessary for treatment of brucellosis^{10,11}. The recommended antimicrobial therapy by WHO is doxycycline 100 mg q12 po for 45 days plus streptomycin 1 g/day im for 15 days. Alternatively, a regimen of doxycycline 100 mg q12 po for 45 days plus rifampicin 15 mg/kg/day¹¹. In our case we used a combination of both regimens, streptomycin IM for 2 weeks plus Doxycycline and Rifampicin and continued for 12 weeks not 6 as the patient was slowly responding. There are several articles about the treatment efficiency of these combination therapies in the literature and the efficiency of each combination seems to be similar. Although, antimicrobial therapy is generally enough in treatment of brucellosis¹², when there is no response to antimicrobial therapy or abscess formation orchiectomy is recommended⁷.

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Usually BEO responds well to the regular antibiotics used for Brucella, but in rare cases it can end with orchiectomy^{12,13}. Researchers found that BEO can result in decrease sperm count which can lead to infertility¹⁴.

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