Brucellosis mimic SLE

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INTRODUCTION

Brucellosis is an infectious disease with articular involvement. Brucellosis and rheumatologic disorders are difficult to discriminate between them in regions endemic to brucellosis.

The autoantibody level in patients with brucellosis has been discussed in a few studies. In one study showed autoimmune processes in the pathogenesis of brucellosis **[1]**.

The purpose of this paper is to report a case of brucellosis that presented with positive autoimmune markers while negative *Brucella* agglutination test. Also the effectiveness of prednisolone in an acute phase.

Case presentation:

18-year-old Saudi female patient not known to have any medical illness before brought by her family to the hospital complaining of fever and arthralgia for 10 days duration. She was not complaining of any medical illness till 10 days prior admission when she abruptly developed fever, the fever was subjective on and off relieving by paracetamol associated with rigors mostly in afternoon time relived spontaneously. Her fever was severe enough to prevent her going to institute. Associated with hair loss and loss of appetite. Not associated with night sweat, dyspnea, weight loss, headache, urinary tract or GI symptoms. She had a history of row milk ingestion. No previous history of same attack, not known to have any medical illness, she did one surgery five years prior admission which was appendectomy. She takes no medication currently except for paracetamol.She is single and lived in Makkah city with her Family, institute student, not smoker or alcoholic.

On examination at the presentation, she was ill-appearing, conscious, oriented, average body built, breathing smoothly, no jaundice, pallor or cyanosis.

Vital signs were temperature 39°C, blood pressure 95/55, heart rate:130, respiratory rate: 18, O2 saturation: 100% in room air.

The rest of examination was unremarkable.

Investigation:

Complete blood count shows anemia (hemoglobin: 9,4g/dl), WBC was 6.02 10^3/UI and platelets was 140 10^3/UI, coagulation profile was within normal limit but lactate dehydrogenase was elevated (LDH: 502 IU/L). Renal function tests and liver function tests were normal. Urinalysis was normal except for 24 hours urine collection was found to have proteinuria 333 mg.

Chest X-ray no obvious abnormality, ultrasound abdomen shows minimal free fluid in the pelvis.

Erythrocyte sedimentation rate was 22 mm/h, the C-reactive protein was within normal range.

Serology :

Brucella serology was negative also *Salmonella* and *Dengue* profile was negative, HIV and Hepatitis profile was negative.

Autoimmune markers :
Autoantibody profile including Antinuclear antibody (ANA) titer and Anti dsDNA titer were positive. C3 ,C4: within normal range.

Treatment :
After this laboratory result according to SLICC criteria the most likely the diagnosis was Systemic Lupus Erythematous (SLE).So we started the Prednisolone.At this time we have had already sent blood to culture. After that, she showed good clinical improvement on prednisolone and became a febrile and taking orally well. Two days after sending the blood culture, it became positive for gram-negative coccobacilli *Brucella melitensis. Brucella* titer requested again and it was negative. So we have a case of brucellosis with positive autoimmune markers. While *Brucella* titer is negative. We started antibiotics for brucellosis: doxycycline, streptomycin and rifampicin and we stopped prednisolone gradually.

Then we diagnosed the case as brucellosis and discharged home on oral antibiotics, and the she came in the clinic for follow up after two weeks where she is healthy.

DISCUSSION

In our case the final diagnosis was brucellosis in spite of implementing SLICC criteria for the diagnosis of SLE (proteinuria, arthritis, alopecia, ANA and Anti-Ds DNA high positive), also in another case published in 2014 found a close finding **[2]**. Also in another article, they found that it is possible to have a positive autoantibody markers in brucellosis **[3]**.

Prozone phenomenon is false negative agglutination test of *Brucella* **[4]**. So in our case, we found a false seronegative agglutination test of *Brucella* while there was culture positive for *Brucella*.

In this study, there was moderate proteinuria, proteinuria a common feature in brucellosis, but heavy proteinuria in brucellosis has rarely been reported **[5]**.

Corticosteroids should be considered in a patient has neurological symptoms due to brucellosis to reduce inflammation and improve neurologic outcome, like in our case prednisolone was started when the patient had severe symptoms then she improved dramatically.

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