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Case Report

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CLINICAL OR SEROLOGICAL IN BRUCELLOSIS?

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ABSTRACT

Brucellosis is a widespread infectious disease encountered throughout the world. Consuming infected cow milk, which was not put through any pasteurization process, or using it in cheese and butter production are significant infection sources. It reveals itself with symptoms like fever, perspiration, abdominal and joint pain.

In this case, we wanted to emphasize the significance of the repetition of diagnostic tests when brucellosis is considered clinically, and that brucellosis should be differential diagnosis in the presence of radiological sacroiliitis by the reason of a 19 year old male patient who applied with hip pain, that brucellosis was not considered due to the negative tubular agglutination tests, who was followed up with non-steroidal treatment and whose repeated agglutinations tests became positive after no improvement on his pain and increasing gait disturbance

Key words: Brucellosis, sacroiliitis, serological tests

INTRODUCTION

Brucellosis is an infectious, generally subacute and chronic zoonosis disease that is caused by brucella. Consuming infected cow milk which was put through any pasteurization process and use of infected cow milk in cheese and butter production are significant infection sources. Lifespan of brucella extends to nearly three months when cheese is awaited in residuum form. Although it was eradicated in most developed countries, it can still be seen widely in some Middle East, Western Asia, and Mediterranean countries, and in Eastern and Southeastern Anatolian Regions of our country (1, 2). According to 2005 epidemiological data of the Ministry of Health, despite morbidity rate of brucella was 1 in 100000 until the 80's, in later years it increased gradually and it was 20.3 in 100000 in 2005 (3).

Inter-human transmission of brucella is reported as rare. Microorganism received from injured skin or mouth first passes to the nearest lymph node, then to blood, and then starts to form infection by settling into the bone marrow, joints, nerves, brain, and especially the genitals. There are various types of it, such as *B. melitensis, B. abortus, B. suis, B. ovis, B. neotane,* and *B. canis* (4).

It reveals itself with symptoms like cold, surging fever and perspiration, abdominal and joint pain. Fever occurs over 40^0C and causes miscarriages in pregnant women. Infertility can arise in result of orchitis in men. It can either have symptoms like acute onset high fever, splenomegaly, night sweating, joint pain or it can emerge in a variety of atypical symptoms and signs, which can imitate rheumatic and psychosocial charts to characterized chronic disease chart (5-6). Joint symptoms of brucellosis are arthritis, arthralgia, sacroiliitis and spondilitis due to vertebral stiffness. In consequence of significant complications the disease can ocaasionally result in death.

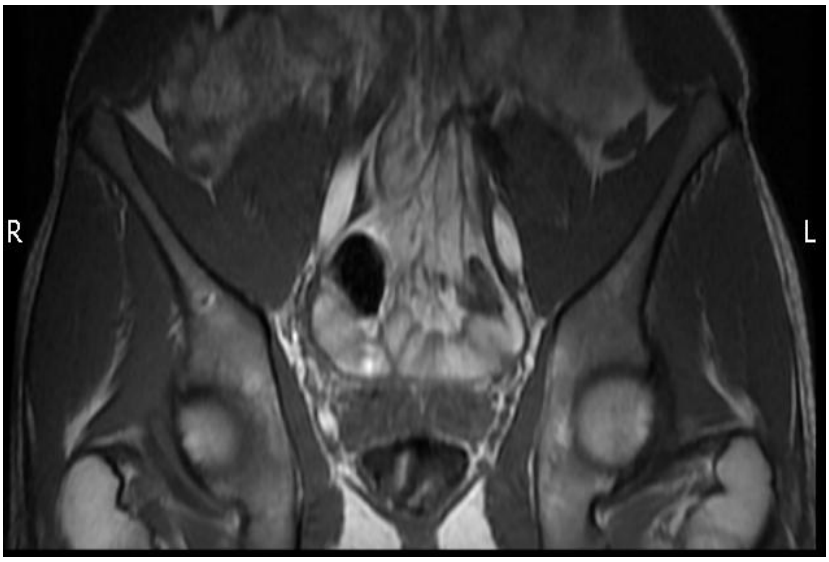
Doxycycline and streptomycin combination or rifampicin and trimethoprim/sulfamethoxazole combination can be used in treating brucellosis. Another option is rifampicin with ofloxacin (7).

CASE

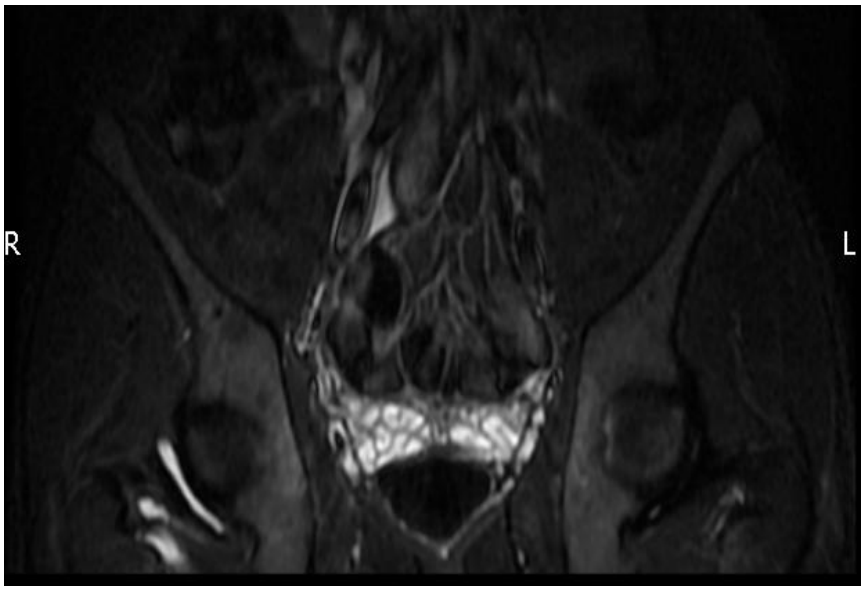
A nineteen year old male patient was hospitalized in our internal diseases clinic with complaints of intermittent fever, hip and lumbar pain which was going on for three weeks. Inquiries revealed that there was nobody in the patient's family with similar complaints. Physical examination gave a body weight of 64 kgs, height of 174 cm, a blood pressure of 110/80 mmHg, a pulse of 84/min rhythmical, and a body temperature of 36.3 °C. He had no lymphadenopathy and liver and spleen wasn't palpable. Patient had hip pain while sitting and standing up and he had difficulty in walking although pain, swelling, sensitivity, temperature rise was not present in other joints. In laboratory examination it was determined that haemoglobin 14 gr/dl, white blood cell count 6500/mm3, erythrocyte sedimentation rate 40 mm/hour, c-reactive protein 3 mg/dl (normal 0–0.8 mg/dl) and peripheral blood smear containing 72% leucocyte, atypical cell wasn't detected. Liver enzyme tests, bilirubin and kidney function tests at normal limits, rheumatoid factor negative, C3 and C4 complement tests are between normal limits and anti-nuclear antibody (ANA) and anti-dsDNA were negative.

Rose Bengal and tubular agglutinations tests were found to be negative when he was brought into the hospital. Blood and urine cultures were non-reproductive and posteroanterior lung graphy was normal.

In sacroiliac joint and both hips joint magnetic resonance scanning active sacroiliitis signs on left and effusion was present on right hip joint (Figore1-Figure2).



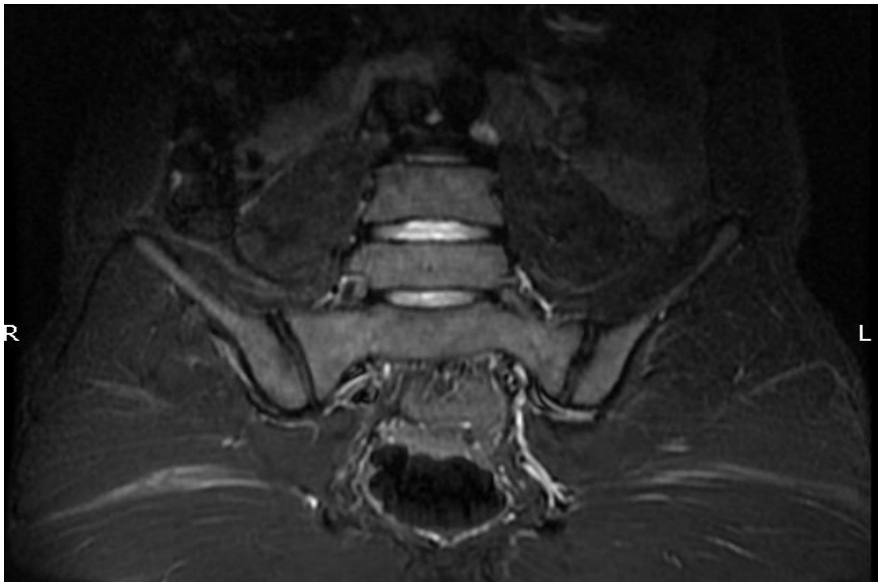
A



B

Figure-1: Coronal plan T1 weighted (A) and STIR (B) image demonstrates effusion on right side hip joint

A



B

Figure-2: Coronal plan T1 weighted (A) and STIR (B) image demonstrates mild sclerosis on surface of left sidesacroiliac joint

With seronegative arthritis prediagnosis according to these results and non-steroidal anti-inflammatory treatment was started and he was monitored. Within first week recovery was present on patient's complaints, he applied again on second week with increased fever and lumbar and hip pain complaints, brucella agglutination was detected as 1:320 and brucella group bacteria reproduced in obtained in blood culture. Tetracycline and streptomycin treatment was administered on patient. The patient's complaints regressed and his pain subsided on tenth day of treatment. The patient's treatment was completed in six weeks. His complaints did not repeat in three-month follow-ups.

In this case, we wanted to emphasize the significance of the repetition of diagnostic tests when brucellosis is considered clinically and that brucellosis should be differential diagnosis in the presence of radiological sacroiliitis by the reason of a 19 year old male patient who applied with hip pain, that brucellosis was not considered due to the negative tubular agglutination tests, who was followed up with non-steroidal treatment and whose repeated agglutinations tests became positive after no improvement on his pain and increasing gait disturbance.

DISCUSSION

Though brucellosis is encountered frequently throughout the world, it is more common in especially Mediterranean countries, Arabian peninsula, Mexico and South America and Indian peninsula (6, 8).

The diagnosis, treatment, and follow-up of the disease are crucial for Turkey is an endemic region in terms of brucellosis. Despite the struggle programs in our country, infection rate is still high, damaging national economy by affecting both animal industry and

human health. It is encountered commonly in Eastern and Southeastern Anatolian Regions of our country. Brucella rate increases in regions where herby cheese is consumed, because it occurs by not boiling the milk sufficiently or not subjecting it to pasteurization, and regions whre it occurs consists of Van in the first place, and cities like Diyarbakir, Bitlis, Siirt, Batman, Kars, Hakkari. Herby cheese has to be produced in the spring season, for sheep milk production increases in the months April, May, and June, and the herbs used in its making grow during these months. This situation explains why brucellla cases increase especially during spring months (1).

In order to diagnose, firstly the patient should be suspected of having brucella for symptoms of Brucellosis is diverse. Complaints can either be acute onset or sneaky and developed in a long period of time. Fever, arthralgia, hepatosplenomegaly are the basic symptoms seen in majority of patients despite the diversion of its clinical symptoms (5, 9). The most common complication is bone and joint involvement (10).

Sacroiliac joint is the most involved joint in adults whereas peripheral joints, especially the knee joint is the most involved one in children (11).

Sacroiliac joint is involved unilaterally in young adults like our patient. Although, the studies of Tasova et al. (11) states that bilateral involvement is more common. In magnetic resonance scanning of our patient, the presence of unilateral joint involvement and hip joint effusion brings brucella infections to mind. Brucella should be in foreground in regions where brucellosis is encountered commonly in patients with joint pain. The definitive diagnosis is the reproduction of bacteria in culture, however, it requires at least a 4-day span and it isn't always successful. This is the reason why serological tests are more useful for the physician.

Even if the serological tests are negative, when brucella is suspected, clinical tests should be repeated or false negatives should be kept in mind.

False negatives can be seen in early stages of the disease and with practitioner inflicted reasons. In early stages of the disease negative result in tests can be named as "prozone period" (5). Patients with acute brucella infection respond with antibodies forming over 1:160 agglutination titer. Increasing in agglutination titer can be seen in relapses (9). Decreasing in titer begins after three months; however, it can stay high rated for a year (5).

In our case, while the first test was negative, the test after three weeks is strongly positive, it brings to mind that first test is a false negative; however, it should be kept in mind that prozon period can be the reason of the negative result in patients with typical symptoms.

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