



Brucellosis-Induced Avascular Necrosis of the Hip in a Middle-Aged Person

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Abstract

Background: Brucellosis is a zoonotic disease mostly transmitted to humans through consumption of unpasteurized dairy products and can lead to a systemic disease with any organ involvement. In this report, we describe a case of brucellosis-induced avascular necrosis of the hip. Brucellosis was diagnosed through serological tests, and avascular necrosis of the femoral head was confirmed by pelvic MRI. The patient was treated with a combination of antimicrobial treatments and referred to the orthopedic service for total hip arthroplasty. Brucellosis may present with unusual manifestations and should be always taken into consideration, particularly in endemic areas.

Keywords: Brucellosis, Necrosis, Hip, Iran

Introduction

Brucellosis is a zoonotic disease mostly transmitted to humans through consumption of unpasteurized dairy products of infected animals (1). It is a serious public health problem particularly in endemic areas, and is accompanied by considerable socioeconomic consequences (2). The disease is endemic in Iran and has a high prevalence in Lorestan Province, central Iran (3).

Brucellosis is a systemic disease that may involve any organ in the body (4). Osteoarticular involvements including arthritis, spondylitis, osteomyelitis, tendonitis, and bursitis occur frequently and are reported in 30-85% of patients with brucellosis (5). The involvement of the large peripheral joints is usually manifested as monoarthritis (1). Although the hip joints involvement may happen in brucellosis, brucellosis-

induced avascular necrosis of the hip has rarely been reported. In this report, we describe a case of brucellosis that complicated by avascular necrosis of the femoral head.

Case presentation

The patient was a 50-year-old rural farmer and rancher who presented with groin pain for six months before admission. He reported no history of trauma, underlying diseases, and steroids and alcohol use. Over the previous six months, he had experienced symptoms including fever, night sweats, weakness, fatigue, anorexia, and weight loss of 10 kg. The patient was visited by a local therapist; in addition there was a delay in timely referral due to his addiction to opium. The groin

pain was his most severe complaint on admission so that he could not bear his weight on the right leg.

The physical examinations on admission showed stable vital signs, there was no organomegaly, and the right hip was in flexion and external rotation position so that any active and passive motion increased the pain.

The results of laboratory study were as follows: Complete blood count (CBC): NL, Liver function test (LFT): NL, Rheumatic factor (RF): Neg, Antinuclear antibody (ANA): Neg, Blood culture: Neg, elevated Erythrocyte sedimentation rate (ESR), C-reactive protein (CRP): Positive, and Standard agglutination test for brucellosis: Positive (Table 1).

Table 1: Laboratory tests values

| Time | On admission | 1 Month | 3 Month | 6 Month |
|------------------|--------------|---------|---------|---------|
| Lab Tests | | | | |
| Wright | 1/320 | 1/160 | 1/160 | 1/40 |
| Coombs | 1/320 | 1/160 | 1/160 | 1/40 |
| Wright | | | | |
| 2ME | 1/160 | 1/80 | 1/80 | 1/20 |
| ESR (mm/1st h) | 60 | 41 | 24 | - |
| CRP | 3 + | 3 + | 1 + | - |

Pelvic radiography and magnetic resonance imaging (MRI) were administered showing avascular necrosis of right femoral head (Fig. 1, 2).



Fig.1: Plain radiography of the pelvis

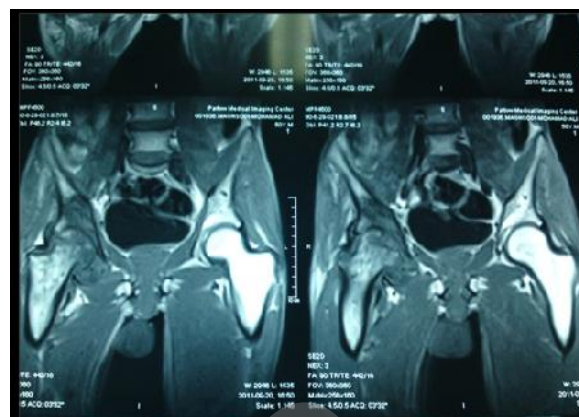


Fig.2: Pelvic MRI on admission showing irregularities and flattening of the femoral head, loss of joint space, and cortical eruption in the femoral head and neck in the right side

The patient was subsequently treated with standard anti-brucellosis regimen: Streptomycin 1gr/d IM for three weeks, Doxycycline 100mg/BID PO, and Rifampin 600mg/d PO. Antimicrobial therapy was continued for six months. Despite the improvement in the patient's general condition and laboratory evidence showing infection control, the patient was suffered from right groin pain and limitation of motion in the hip joint. Therefore, the patient was referred to the orthopedic service.

Discussion

Although osteoarticular involvements, especially arthritis in the large peripheral joints, are among the most common manifestations of brucellosis, no joint destruction has been reported in many studies (5). Despite few reports on the permanent joint complications of brucellosis-induced peripheral joint arthritis, hip joints pyogenic infection has a poor prognosis, particularly if treatment is delayed (6). Delays in diagnosis and treatment of brucellosis-induced hip arthritis could lead to complications including dislocation and avascular necrosis of the femoral head (4). Although aspiration and examination of the joint fluid were not performed due to lack of synovial effusion on admission, considering the positive

serological tests for brucellosis and concurrent avascular necrosis of the femoral head on MRI, it seems that the delay in diagnosis and treatment of brucellosis in this patient had led to avascular necrosis of the femoral head. Finally, the following questions arise: Was avascular necrosis caused by increased intra-articular pressure related to the infection or due to direct involvement of the femoral head by the organism?

Conclusions and Recommendations

Since brucellosis is a systemic infection with a broad clinical spectrum ranging from asymptomatic forms to deaths in severe cases, this disease should be taken into considerations when dealing with any patient with various and nonspecific symptoms in endemic areas with extension of the clinical signs of brucellosis. Moreover, early diagnosis and long-term treatment and follow-up are of great importance in brucellosis.

Ethical consideration

We took informed consent of patient for publishing article.

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