

Coexistence of Brucellosis and Ankylosing Spondylitis: A Pediatric Case Report

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Abstract

The coexistence of brucellosis and ankylosing spondylitis is a rare association, described in few report cases of adults but not children. This clinical case presents the first pediatric case of combination of brucellosis and ankylosing spondylitis. A 14-years-old boy diagnosed with ankylosing spondylitis associated with subacute brucellosis. The dual treatment of brucellosis and ankylosing spondylitis improved patient outcomes. Practitioners should be aware of the possibility of this co-existence mainly observed in endemic areas of brucellosis such as the Mediterranean basin.

Keywords: Ankylosing Spondylitis; Brucellosis; Association; Child

Introduction

Ankylosing spondylitis (AS) is a chronic inflammatory autoimmune disease that mainly affects young adults male [1]. Brucellosis is considered one of the most common contagious and transmissible zoonoses [2]. Brucellosis has a wide clinical spectrum and clinical signs depend on the stage of the disease and the organs affected [3]. It is sometimes difficult to distinguish between spinal brucellosis and ankylosing spondylitis, given the similarity of clinical features leading to delayed diagnosis with the onset of complications from brucellosis infection [4]. This clinical case described a case of a 14-years-old boy diagnosed with ankylosing spondylitis associated with subacute brucellosis.

Case Report

A 14-years-old, previously healthy, admitted to our hospital with complaints of hip, knees, ankles, elbows, wrists and back pain over a period of approximately 3 years. The patient had consulted general medicine on multiple occasions and even other specialties, he was diagnosed at disease onset as rheumatic fever treated by benzathine benzylpenicillin and vitamin D3 but without any noticeable improvement. The physical examination revealed growth retardation and pubertal delay, severe neck stiffness limiting movement, spinal pain with vicious posture, pain on palpation of tendon insertion zones in knees, ankles (Achilles tendon) and muscular atrophy of lower limbs. The MSK Ultrasound examination showed a hip synovitis with moderate effusion and synovial thickening. Computed tomography of the cervical-dorsal-lumbosacral spine showed bilateral erosive sacroiliitis and cervical ankylosis at the C2-C3, C3-C4 and C4-C5 levels of the posterior apophyseal joints (Figure 1).



Figure 1: CT scan of the cervical-dorsal-lumbosacral spine.

The laboratory test results were as follows: elevated C-reactive protein (CRP), elevated fibrinogen, increased erythrocyte sedimentation rate (ESR), inflammatory anemia hyper gamma globulinemia, hyper α_2 globulin, a rose Bengal test was positive, and Wright's seroagglutination test was positive twice (Ig M and Ig G), the quantiferon test was negative, rheumatoid factor was negative, ANA was negative and HLA-B27 antigen was negative.

The patient was given a course of treatment comprising of doxycycline at 200 mg/day and rifampicin at 600 mg/day for 3 months, gentamicin (3 mg/kg/day) for 3 weeks as treatment of brucellosis. During this antibiotic regimen 100 mg of diclofenac was sustained and biological medication with adalimumab (HUMIRA) initiated after the end of antibiotic therapy. At the time of writing, the patient was undergoing maintenance treatment with Humira with spacing of doses for complete cessation of medication due to the favorable evolution of the disease.

Discussion

Brucellosis is one of the most common zoonotic infections globally [5]. This bacterial disease is transmitted to humans through the consumption of infected, unpasteurized animal milk, or through direct contact with infected animals [6].

Brucellosis is a systemic disease with the potential to affect any organ or system, and can therefore mimic many multisystem diseases, which also display a high degree of clinical polymorphism. The clinical course of brucellosis may be acute, sub-acute or chronic, and may be interspersed with relapses as *Brucella* spp. are intracellular bacteria and can survive and multiply in phagocytic cells of the hosts. The multiple complications of the disease are very frequent and can affect several systems, mainly the osteoarticular, gastrointestinal, hematological, genitourinary, cardiovascular, respiratory and central nervous systems [7-10]. Complications of the osteoarticular system are the most common, occurring in almost half of all brucellosis cases. Spinal involvement is more common in men, with an incidence ranging from 2% to 65%, [11], which can partly resemble the manifestations of ankylosing spondylitis. So, it is sometime difficult to distinguish the features of sacroiliitis and spinal involvement of brucellosis from those of ankylosing spondylitis, but their treatment is very different [12].

A study has identified indicators that can help in the differential diagnosis of brucellosis and ankylosing spondylitis. These indicators include disease duration, contact history of livestock, features of LBP, myalgia, fever, and HLA-B27. To confirm the diagnosis of brucellosis, the GICA test and MRI of the sacroiliac joints are the best methods [13].

Many authors presented clinical cases of brucellosis occurring in a patient with spondyloarthritis [4,12,14,15]. In our patient's case, ankylosing spondylitis was initially suspected, as he presented with inflammatory pain, elevated CRP and ESR, and a characteristic CT image of the sacroiliac joints. The evidence against this diagnosis was the negative HLA B27 typing, but the good response of the pain to NSAID treatment and the improvement in the child's condition after initiation of biotherapy confirmed the diagnosis. The subacute brucellosis has been diagnosed on the basis of the results of biological examinations, and therefore required appropriate antibiotic treatment.

Conclusion

Association of two different diseases like brucellosis and ankylosing spondylitis, which may share some clinical, radiological and laboratory findings, may pose some difficulties in differential diagnosis. Brucellosis must be suspected and investigated in endemic areas, as the treatment is different.

Conflict of Interest

No conflict of interest declared by the authors.

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