Coxofemoral joint tuberculosis: regarding one case

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Introduction

For centuries tuberculosis has plagued humankind[1], being considered the main cause of death due to a single infectious agent in adults all over the world, according to WHO data[2]. This disease can take several forms, such as pulmonary, lymphatic, genitourinary, among others. One of them is osteoarticular tuberculosis, which has existed for thousands of years and still strikes children and adolescents with a stable incidence in both developed and developing countries. The osteoarticular disease constitutes 10 to 20% of extrapulmonary tuberculosis cases and 1% to 3% of all tuberculosis cases[2-6]. The bone impairment is predominant in the vertebral column[7]. As to joint impairment, it is less usual and occurs, in 50 to 73% of cases, in load-bearing joints, such as the hip and the knee[8-10]. The occurrence of tuberculosis in the coxofemoral joint is reported in a pediatric patient at a Teaching Hospital, showing how difficult the early diagnosis of this disease can be.

Case report

M.M., 8 years old, female, white, previously healthy, was admitted to the Orthopedics and Traumatology Service of a Teaching Hospital in March, 2004, complaining about pain in her right hip and claudication with no apparent cause which had persisted for one month. The pain was more intense and frequent at night. The patient denied a history of previous trauma. The physical examination did not show any phlogistic signs. She presented a decrease in the amplitude of movement in the right hip (abduction, flexion and extension reduction in the right hip), pelvic obliquity and muscular atrophy in the lower right limb. She did not present any impairment in the left coxofemoral joint. Having as the main diagnostic hypothesis a transitory hip synovitis, which is considered the most frequent cause of pain in children's hips, followed by rheumatic disease, a laboratorial and imaging[11] investigation began.

In the patient's first visit to the hospital presenting the clinical picture of hip pain, an X-ray was requested, which did not evidence any alteration. After nine months, the patient returned to the Orthopedics and Traumatology outpatient clinic with the same complaints; however, she was unable to walk due to pain. In this occasion, another hip X-ray was requested, evidencing a slight decrease in the articular space of the right hip, besides a flattening of the ipsilateral femoral head (Figure 1). Her hemogram showed no alteration, however there was a CRP of 2.6 mg/dL (< 0.5 mg/dL). After that, an ultrasound was performed, which showed a small articular effusion in the right hip. A triphasic bone scintillography was performed which showed an increase in the osteoblastic activity in the right coxofemoral joint with local hyperemia, suggesting inflammatory arthropathy and aseptic necrosis in a late stage. When performing a scintillography with gallium 67, there was a greater concentration of gallium in the medial face of the right coxofemoral joint, suggesting the existence of a local infectious process. A computed tomography of the hip showed a diffuse protusion of the cavity of the right femoral head, besides an articular effusion with no signs of significant capsular thickening (Figure 2). At last, a magnetic resonance imaging scan was requested in which bone and soft tissues impairment appeared, probably of inflammatory nature (Figure 3). After 10 months

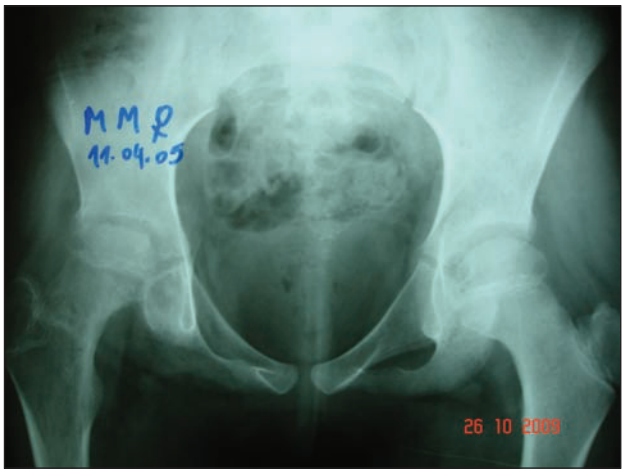

Figure 1 – Pelvic panoramic AP radiography, showing a decrease in the articular space on the right, besides a flattening of the ipsilateral femoral head.

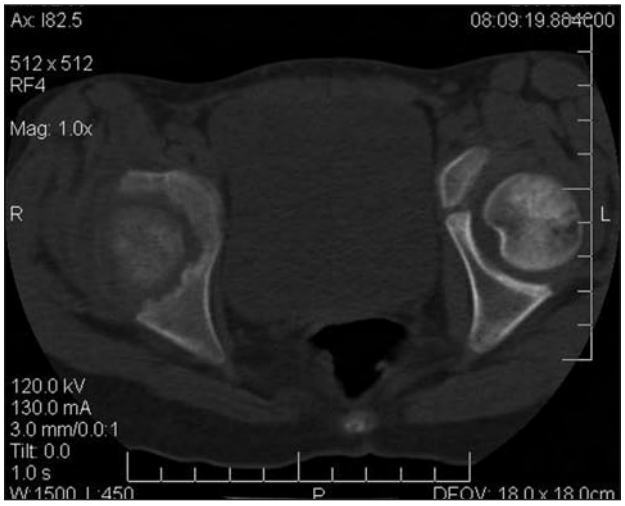

Figure 2 – Computed tomography of the hip showing a diffuse protusion of the cavity of the right femoral head, besides an articular effusion with no signs of signi cant capsular thickening.

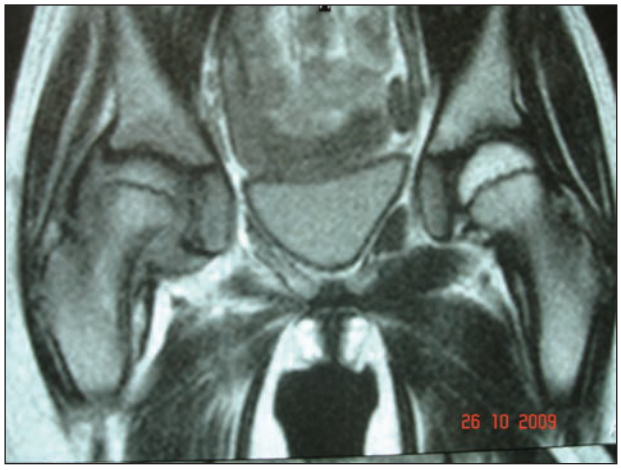

Figure 3 – Magnetic nuclear resonance imaging scan showing large poorly delimited areas of hiposignal T1 in the bone marrow of acetabular, head and femoral neck bones. Signs of moderate right coxofemoral joint effusion.

of painful symptomatology in the right hip and with no established diagnosis, the patient was submitted to an arthrocentesis of the right hip, which drained sanguineous, purulent secretion in small quantity. The biopsy of the capsule and the synovial membrane revealed a chronic granulomatous inflammatory process with areas of necrosis. The BAAR research was negative in the sample. The rheumatological tests of the synovial liquid were negative. According to Mantoux's reaction, or purified protein derivatives (PPD) test, the induration halo was 15 mm. In this occasion, the patient reported having had previous contact with an uncle who presented a clinical picture of pulmonary tuberculosis. The patient had a scar from the BCG vaccine. One month after the arthrocentesis, there was fistulization, and some material was collected, which came positive for BAAR research, thus confirming the diagnosis of coxofemoral joint tuberculosis. On February 2, 2005, a triple treatment was initiated with rifampicin, isoniazid and pyrazinamide, which was maintained for two months and was followed by four more months of Rifampicin and isoniazid, as dictated by the Centers for Disease Control and Prevention Guidelines (CDC)[12]. It was arlso requested that the patient used Canadian crutches, providing a partial support for 20% of her weight on the right hip. When her treatment was completed, she had no more pain complaints and her physical examination showed no alterations, only a slight decrease in the articular space in the right hip, which was evidenced by an X-ray.

Discussion

Presently, coxofemoral joint tuberculosis shows rare prevalence in the pediatric setting, mainly when it does not impair other systems[4]. Its incidence is higher in male children and it is more common in immunodepressed individuals[13-14]. In immunocompetent individuals, extrapulmonary tuberculosis comprises 15 to 20% of all the forms of tuberculosis. On the other hand, in immunodepressed individuals, extrapulmonary tuberculosis comprises 50% of the cases[15]. Differently, in this case we are dealing with a female, immunocompetent patient.

Extrapulmonary forms of tuberculosis, among them the osteoarticular, present unspecific and insidious symptoms, with a consequent delay in diagnosis and in the institution of an adequate treatment[16-23]. The time interval between the appearance of symptoms and the beginning of treatment can reach one year[9,21]. The absence of a concomitant pulmonary clinical picture makes the diagnosis even more difficult. This can be understood from physiopathogeny, where the hematogenic dissemination of the micobacterium from the lung happens years before, soon after the primary infection. When the bone infection manifests, the original focus has already healed. There is a long quiescence of the bacillus in the bone, as occurs in every secondary clinical picture[2,22-23]. Approximately 50% of patients suffering from bone or articular tuberculosis present negative findings in a thoracic X-ray, making a diagnosis even more difficult[24].

As to the confirmation of a diagnosis, once the clinical characteristics are unspecific, additional tests are highly valuable. Laboratorial tests are usually normal, except for the HSS, which usually presents itself elevated[19,25]. Just as in the case reported, most patients present a positive tuberculin test (PPD), although this test has little value, especially in areas where there is high prevalence of tuberculosis[5,19,21]. Among the imaging exams, a magnetic resonance imaging scan is the gold standard and, in our case, it has been quite useful to reveal signs compatible with osteoarticular tuberculosis[26].

A definitive diagnosis must be based on bacteriological and/or histological findings, that is, bacillus culture and bone and synovial biopsies. However, it is difficult to obtain a sample of the bacillus through biopsy or surgery, and the culture through the Löwenstein-Jensen medium, besides its slow growth – about one month –, has limited sensitivity (4.2 to 28.0%) in children. A bacilloscopy is positive in only around 40% of the cases[7-10]. Therefore, in most cases, for the reasons presented above, a diagnosis is made by taking into account the clinical and epidemiological picture, ratified by compatible imaging findings. An adequate therapeutic response also constitutes a counterproof of the etiology.

Treatment of musculoskeletal tuberculosis is essentially clinical (medication based). Traditionally, the treatment time must be extended from 12 to 18 months, due to a concern related to the low penetration of the drugs in the bone and fibrous tissues. However, studies have proclaimed shorter courses of treatment and have shown that periods of six to nine months containing rifampicin are as effective as longer treatments without rifampicin. In the same way, the guidelines about tuberculosis treatment from the Centers for Disease Control and Prevention (CDC) recommend a treatment of six months for all extrapulmonary tuberculosis cases, except those impairing the meninges. These guidelines also consider a lengthening of the therapy when the patient presents a low response to treatment[12]. In this case, a short-term treatment of six months was applied, which proved to be effective, and the patient was cured.

The usefulness of the case report is to warn about the difficulty and the importance of an early diagnosis of articular pain in a child's hip with tuberculous etiology. The clinical picture is insidious[27], associated with a high clinical unspecificity. Its management is clinical and must start early in order to avoid more severe sequelae, such as hip fibrous ankylosis, which was the outcome for almost 100% of the patients in the pre anti-tuberculosis-chemoterapy era[28,29].

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