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Management of subacute acetabular osteomyelitis in a child

Prise en charge de l'ostéomyélite subaiguë de l'acétabulum chez l'enfant

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Summary

Clinical manifestations of subacute osteomyelitis may lead to delayed diagnosis. Acetabular subacute osteomyelitis is an uncommon disease. Bone tumors are usually suggested first. Diagnosis is often made based on radiological findings. We report on the case of a 9-year-old girl who consulted at the emergency department because of limping and pain in her left limb lasting 2 weeks. No fever was reported. Physical examination found a clear, painful reduction in hip mobility. X-ray findings revealed a posterior loss of bone in the acetabular wall. MRI found a mild invasion of the periarticular hip joint and muscles. The surgical exploration of the hip found a collection in the posterior acetabular wall suggesting septic disease. Bacteriological and pathological exams confirmed acetabular subacute osteomyelitis. Nine months after surgery, antibiotic therapy, and physiotherapy, the patient was painless and the hip mobility showed near normal values with a reduction in external rotation and flexion. The aim of this case report is to review the characteristics of subacute acetabular osteomyelitis, including therapeutic modalities, underlining surgical debridement as a rule for both diagnosis and treatment.

Résumé

L'ostéomyélite subaiguë est une forme particulière de l'ostéomyélite. Ses manifestations cliniques semblent être atténuées et peuvent entraîner un retard diagnostique. L'ostéomyélite subaiguë acétabulaire est rare. Les tumeurs osseuses sont souvent évoquées comme diagnostic différentiel. Le diagnostic positif est radiologique. Nous rapportons le cas d'une enfant de 9 ans ayant consulté pour une boiterie et une douleur de la hanche gauche évoluant depuis deux semaines sans fièvre. À l'examen physique, il existait une limitation douloureuse de la mobilité de la hanche. La radiographie standard a révélé une image lytique du pourtour acétabulaire en faveur de l'infection. L'imagerie par résonance magnétique a objectivé une invasion du tissu péri-articulaire. Un abord chirurgical par voie postérieure a mis en évidence une collection de la paroi postérieure du cotyle évoquant une infection. Les résultats bactériologiques et histologiques étaient en faveur d'une ostéomyélite subaiguë. Neuf mois après l'intervention chirurgicale, l'antibiothérapie et la rééducation fonctionnelle, la mobilité de la hanche était libre, avec une réduction de la rotation externe. Cette observation rappelle les caractéristiques de l'ostéomyélite acétabulaire subaiguë et permet de revoir les options thérapeutiques en insistant sur l'intérêt tant diagnostique que curatif de la chirurgie.

1. Introduction

Subacute hematogenous osteomyelitis may be difficult to diagnose because the characteristic signs and symptoms of the acute form are absent. It has an insidious onset, lacks a systemic reaction, and may mimic various benign and malignant diseases, especially bone tumors. Indeed, delayed diagnosis and treatment are often seen. The primary form of acute hematogenous osteomyelitis, which occurs mainly in children, must be distinguished from subacute osteomyelitis, which may occur after inadequate or partial treatment with antibiotics and from other forms of the condition such as chronic recurrent multifocal osteomyelitis and the SAPHO syndrome (synovitis, acne, pustulosis, hyperostosis, and osteitis). Pelvic

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osteomyelitis is uncommon. Diagnosis can be difficult because pain may be referred to the hip, thigh, or abdomen because of the deep location of the infection, especially in the acetabular portion of the ilium bone. We report on a case of subacute acetabular osteomyelitis in a young girl and review the literature on clinical presentation, diagnostic tools, and treatments.

2. Case report

This 9-year-old girl consulted at the emergency department because of limping and left hip pain that had started 2 weeks before with no fever, urinary symptoms, or infectious events. Physical examination showed a reduction in hip mobility. Laboratory findings revealed no particular inflammatory profile. An anteroposterior pelvic X-ray view revealed a bone defect in the posterior acetabular wall *(fig. 1)* that was shown to be an abscess on tomodensitometry (TDM) *(fig. 2)*. Moreover, magnetic resonance imaging (MRI) concluded in a mild ailment of the posterior acetabular wall affecting the hip joint and the periarticular muscles *(fig. 3)*. The surgical exploration through a Moore approach found a posterior acetabular intraosseous abscess associated with arthritis. Infection was confirmed by pathological examination, whereas cultures were negative *(fig. 4)*. After antibiotic therapy and rehabilitation, no pain was reported 9 months postoperatively and hip mobility was nearly normal. Biological findings were normal and radiography revealed fibrosis of the posterior acetabular wall.

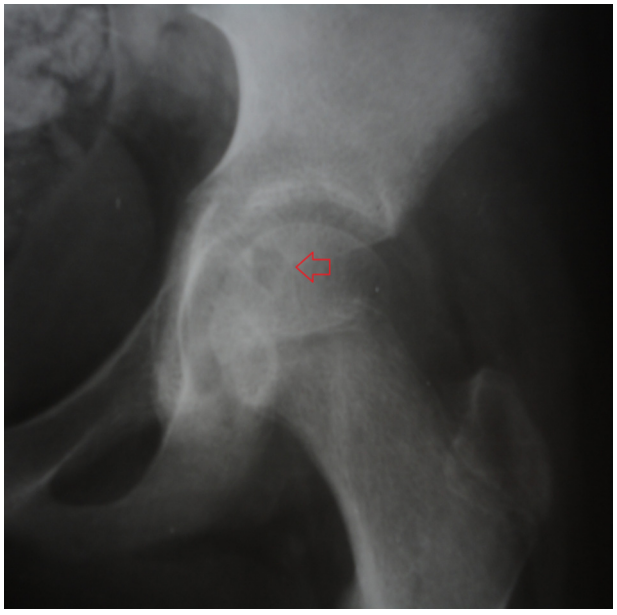

Figure 1. Anteroposterior X-ray of the left hip: bone defect of the posterior wall of the acetabulum.

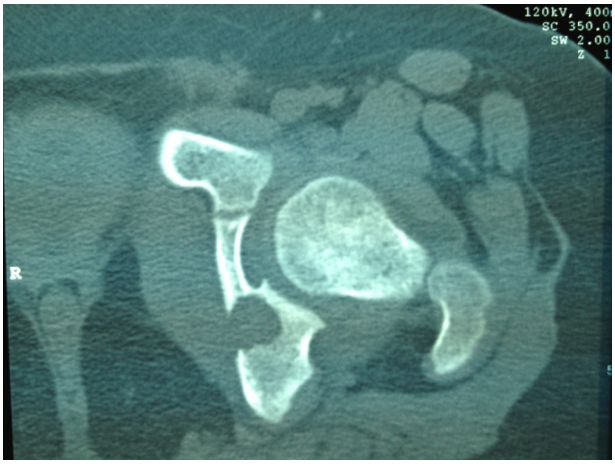

Figure 2. Tomodensitometry of the left hip: longitudinal view showing the bone destruction of the posterior wall.

3. Discussion

The first case of osteomyelitis was described in 1863 [1,2]; however, the term "subacute" was coined in 1881 [1,2] and rarely appeared in literature before 1950. The first case of pelvic osteomyelitis was described in 1890 [2]. Subacute osteomyelitis is defined as an infectious process in bone characterized by mild localized bone pain without systemic manifestations. [3] It is a rare disease [4]. The clinical presentation is muted and diagnosis is usually missed at the first consultations [4]. Although the rate of pelvic osteomyelitis is between 2% and 11% of all cases of osteomyelitis, the acetabular subacute form is rare [4,5]. The most commonly involved anatomical sites in pelvic osteomyelitis are the ilium (38%), the ischium (19%), the pubis (14%), and the acetabulum (12%) [5]. It occurs mainly in children and is regarded as a separate entity from acute osteomyelitis [6]. The indolent course of subacute osteomyelitis is thought to be the result of an altered host–pathogen relationship, in which there is an increased host resistance and decreased bacterial virulence [6]. Furthermore, patients with subacute pelvic osteomyelitis seem to be less severely affected than those with the acute form [7]. The incidence of joint involvement with osteomyelitis of the acetabulum in pediatric patients has been reported to be 66% [8].

This infectious affection reveals several problems in pediatric orthopaedic practice. In fact, the clinician is faced with indeterminate symptoms and a worrisome description [9] because several other infectious diseases involving the pelvic organs give the same clinical presentation as acetabular osteomyelitis. Different syndromes, variously described as spinal, abdominal, sciatic, and gluteal syndrome are suggested, and the diagnosis of subacute osteomyelitis is often delayed [8,9]. Furthermore, and in daily practice, hip pain and intolerance to bearing weight are always considered as common presentations of septic arthritis or acute osteomyelitis of the upper