Case Report of Iliac Osteomyelitis in A Child, Presenting as Septic Arthritis of the Hip

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What to Learn from this Article?
Differentiation between pelvic osteomyelitis and hip septic arthritis in a child

Abstract

Introduction: Osteomyelitis of the pelvis can be a difficult condition to diagnose and can present in a number of different ways. The ilium is the bone most frequently affected and staphylococcus aureus is the organism most commonly responsible.

Case Report: This case report describes a six year old girl, who presented with right sided hip pain, fevers and altered weight bearing. She was initially diagnosed with septic arthritis of the hip and underwent open joint washout. A magnet resonance imaging scan was subsequently performed which confirmed the diagnosis of iliac osteomyelitis with abscesses of the iliopsoas and iliacus. The patient underwent further operative debridement and required prolonged antibiotic therapy but she eventually made a full recovery.

Conclusion: Pelvic osteomyelitis can present very similarly to hip septic arthritis and early magnetic resonance imaging is beneficial in diagnosing the condition. Surgical intervention can be required if there is abscess formation, although recovery is usually very good and the incidence of long term complications is rare.

Keywords: Pelvic osteomyelitis; Iliac osteomyelitis; Hip septic arthritis.

Introduction

Osteomyelitis of the pelvis is uncommon but can be associated with significant diagnostic difficulty [1,2,3]. It is usually caused by haematogenous spread of organisms; in most cases staphylococcus aureus but multiple other organisms have also been identified as causative agents [4]. The disease can mimic many different pathologies including the acute abdomen, septic arthritis, typhoid fever, nephrolithasis, osteomyelitis of the proximal end of the femur, discitis and neoplasia [1,3]. This case report highlights the similarity in presentation of iliac osteomyelitis to septic arthritis of the hip.

Case Report

A six year old girl presented to the Orthopaedic department with a five day history of right hip pain, fevers and difficulty weight bearing. There was no history of trauma or any recent illness. The patient was of Somail origin but there was no recent history of travel or infectious contacts and no significant past medical history.

On examination she had a temperature of 39.5 degrees Celsius and the right hip was held in flexion, with localised anterior joint...
Clinical features associated with pelvic osteomyelitis include hip or thigh pain, present in 98% of cases, fever present in 57% and altered weight bearing in 46% [1,2,5,7]. In addition there is often tenderness on palpation of the sacro-iliac joint, decreased straight leg raising and pain on lateral pelvic compression. Flexion of hip may occur as a result of irritation of the iliopsoas muscle by abscess formation [8].

Blood tests typically show raised inflammatory markers, with an elevated ESR present in 90% of cases and a raised white cell count in 59% to 66% of cases [1,2,3,5]. Blood and tissue cultures are positive in only 50% to 78% of cases and negative cultures do not exclude infection [1,3,5].

Initial radiographs are usually normal, as the typical radiographic features of osteomyelitis usually take two to three weeks to become visible [5,9]. Ultrasound scans can demonstrate deep soft tissue swelling in pelvic osteomyelitis [7] and radionuclide bone scans can indicate pyogenic infection at an early stage [1,3,5].

Computed tomography can also allow early diagnosis, demonstrating the site and extent of infection, as well as the presence of lytic lesions, sequestrum or traumatic fractures [2,5,10].

MRI is, however the gold standard investigation and is reported as being 97% sensitive and 94% specific for the diagnosis of pelvic osteomyelitis. It is able to demonstrate marrow oedema as being 97% sensitive and 94% specific for the diagnosis of pelvic osteomyelitis. It is able to demonstrate marrow oedema and hyperaemia of the infected bone early in disease onset, as well as the presence of soft-tissue and intra-osseous abscess [9,10].

Treatment of pelvic osteomyelitis usually consists of IV antibiotics alone, as the good blood supply to the pelvis means the risk of sequestrum is reduced and the ligamentous structure minimises the spread of infection [1,5,10]. Surgery is generally only advocated if there is extensive osseous involvement, failure to respond to antibiotic therapy or abscess formation requiring drainage [1,5,10].

Prognosis is normally good with prompt treatment, with 95% to 97% of patients making a full recovery [3,5]. Complications can, however occur if treatment is delayed and include the development of chronic osteomyelitis, growth arrest, fusion of the sacro-iliac joint and irregularity of the acetabulum [5,9].

### Conclusion

This case report highlights the difficulty in diagnosing pelvic osteomyelitis and the similarity in presentation to septic arthritis of the hip. The most common clinical features of pelvic osteomyelitis include hip or thigh pain, fever and altered weight bearing. MRI is the gold standard investigation and can diagnose the disease at an early stage. In general antibiotic therapy alone is adequate but if there is abscess formation then this will require operative debridement.

### Clinical Message

Pelvic osteomyelitis can be difficult to diagnose and can mimic several different conditions, including hip septic arthritis. A high index of clinical suspicion is required and MRI scanning should be performed early to prevent delays in diagnosis.
References

1. Highland T, Lamont R. Osteomyelitis of the Pelvis in Children. J Bone Joint Surg [Am] 1983; 65: 230-234
2. Rand N, Mosheiff R, Matan Y, Porat S, Shapiro M, Liebergall M. Osteomyelitis of the pelvis. J Bone Joint Surg [Br] 1993; 75-B:731-733
3. Zvulonov A, Gal N, Segev Z. Actue hematogenous osteomyelitis of the pelvis in childhood: Diagnostic clues and pitfalls. Pediatric Emergency Care 2003; 19(1): 29-31
4. Calza L, Manfredi R, Briganti E, Attard L, Chiado F. Iliac osteomyelitis & gluteal muscle abscess caused by Streptococcus intermedius. J Med Microbiol 2001; 50:480-482
5. Davidson D, Letts M, Khoshhal K. Pelvic osteomyelitis in children: a comparison of decades from 1980-1989 with 1990-2001. J Pediatric Orthopedics 2003; 23:514-521
6. Beaupre A, Carroll N. Three Syndromes of Iliac Osteomyelitis in children. J Bone Joint Surg [Am] 1979; 61: 1087-1092
7. Mah ET, LeQuesne GW, Gent RJ, Paterson DC. Ultrasonic signs of pelvic osteomyelitis in children. Pediatr Radiol 1994; 24: 484-387
8. Beslikas TA, Panagopoulos PK, Gigis I, Nenopoulos S, Papadimitriou NG, Christoforides JE. Chronic osteomyelitis of the pelvis in children and adolescents. Acta Orthop Belg 2005; 71: 405-409
9. Connolly SA, Connolly LP, Drubach LA, Zurakowski D, Jaramillo D. MRI for detection of abscess in acute osteomyelitis of the pelvis in children. Am J Roentgenol 2007; 189: 867-872.
10. Viani RM, Bromberg K, Bradley JS. Obtruator internus muscle abscess in children: report of seven cases and review. Clin Infect Dis 1999; 28:117-122.

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