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Clinical case

Bilateral Iliac Osteomyelitis with Gluteal Abscess in a Neonate: A Case Report

Ostéomyélite iliaque bilatérale avec abcès fessier chez un nouveau-né : à propos d'un cas

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Résumé

Introduction : L'ostéomyélite iliaque est une entité rare chez le nouveau-né, d'évolution foudroyante et associée à des séquelles sévères en l'absence de traitement.

Cas clinique : Nous rapportons le cas d'une ostéomyélite iliaque bilatérale chez un nouveau-né de trois semaines, qui présentait depuis deux semaines une tuméfaction ferme, œdématiée et douloureuse de la fesse droite, associée à une réduction de la mobilité du membre. Les explorations biologiques ont objectivé un syndrome inflammatoire et le test GenXpert était négatif. La radiographie du pelvis et l'échographie des hanches ont mis en évidence des lésions ostéolytiques des ailes iliaques ainsi qu'un abcès de la fesse droite, sans épanchement articulaire ni luxation de la hanche. Les examens bactériologiques ont confirmé une ostéomyélite septique des ailes iliaques. Une ponction du pus a été réalisée, associée à une antibiothérapie par voie intraveineuse, avant le parage chirurgical. Cependant, le traitement a été interrompu en raison de la non-observance parentale.

Conclusion : L'ostéomyélite iliaque septique est une urgence chirurgicale qui ne doit pas être méconnue et doit être évoquée devant tout nouveau-né présentant une masse fessière inflammatoire. Un retard diagnostique aggrave significativement à la fois le pronostic fonctionnel et le pronostic vital.

Mots-clés : Ostéomyélite iliaque ; nouveau-né ; abcès fessier.

Abstract

Introduction: Iliac osteomyelitis is a rare entity in neonate with fulgurant progression associated with severe sequelae if left untreated.

Clinical case: We report the case of bilateral iliac osteomyelitis in a three-week-old neonate who presented with a two-week history of a swollen, firm

tender right buttock with reduced limb mobility. Laboratory investigations showed an inflammatory syndrome and negative GenXpert. Pelvic X-ray and hip ultrasound studies demonstrated lytic lesions of the iliac wings and a right gluteal abscess, without joint effusion or hip dislocation. Bacteriological features confirmed a septic iliac wings osteomyelitis. Subsequent aspiration of pus was performed, in addition to intravenous antibiotic therapy, before surgical debridement. However, treatment was discontinued because of parental noncompliance.

Conclusion: Septic iliac osteomyelitis is a surgical emergency that should not be overlooked and should be considered in neonates presenting with an inflammatory buttock mass. Delayed diagnosis significantly worsens both the functional and vital prognosis.

Keywords: iliac osteomyelitis, neonate, gluteal abscess.

Introduction

Septic osteomyelitis is a potentially life-threatening condition. Most cases result from hematogenous spread of a concomitant infection, although direct inoculation following trauma may also occur. Staphylococcus aureus is the most frequently isolated pathogen [1].. This infection most commonly affects the long bones, particularly the femur and tibia. Pelvic involvement is rare in neonates because the transphyseal vascular supply at this age favors the development of septic arthritis rather than osteomyelitis [2–5]. Nevertheless, pelvic osteomyelitis may result in severe long-term complications if diagnosis and treatment are delayed. Iliac osteomyelitis has been reported only sporadically in children and remains an exceptionally rare condition. Its diagnosis is challenging because the clinical manifestations are nonspecific, and early radiographic findings are often absent. Consequently, it is frequently misdiagnosed as septic arthritis of the hip [4]. Three clinical presentations have been described: the gluteal syndrome, the abdominal syndrome, and the lumbar syndrome.

We report here an unusual case of bilateral iliac osteomyelitis with gluteal abscess in a three-week-old girl to highlight the challenges of diagnosis associated with this condition.

Clinical case

A three-week-old girl, with no particular medical history, was admitted to our pediatric surgical emergency department with a two-weeks history of painful swelling of the right buttock and fever. His family history was unremarkable. Serological tests of the mother for HIV and syphilis were negative, and maternal hemoglobin electrophoresis was normal, type A1A2. The pregnancy had not been complicated by hospitalization or premature rupture of membranes. His parents did not report any particular condition or local trauma prior to the onset of her symptoms. She is a term neonate, born by C surgery delivery with a birth weight of 4000 g. Parents were second cousins.

On admission, the neonate was febrile (38.9 °C), weighed 4200g, and her hemodynamic parameters were stable. Clinical examination revealed a rounded, well-circumscribed, firm, tender, and fluctuant swelling in the upper quadrant of the right buttock, measuring 7 × 4 cm. The overlying skin appeared normal, with no extension of the swelling to either groin or the upper thighs. No similar lesion was observed on the left buttock. Examination of the right hip demonstrated a markedly reduced range of motion due to severe pain, particularly during flexion and abduction, with diffuse tenderness over the right groin, greater trochanter, and iliac region. Examination of the left hip and lower limb was unremarkable. The remainder of the physical examination revealed no significant abnormalities.

Laboratory tests showed an inflammatory syndrome (white blood count: 22.5X109L, neutrophil count: 12.1X109L, C-Reactive Protein: 160 mg/l, hemoglobin: 8.4 g/dl), and normal glycemia:0.9 g/l. The tuberculin skin test was positive with induration of 9 mm and the GenXpert test was negative. Renal

function was preserved (urea 0.10 g/l; creatinine 6 mg/l).

Pelvic X-ray showed lytic lesions of iliac (Figure 1). Ultrasonography of the hips and right gluteal region revealed a 26-mL gluteal fluid collection containing fine internal echogenic debris, as well as a 10-mL fluid collection within the right iliacus muscle. No evidence of hip dislocation or joint effusion was identified (Figure 2). Pelvic magnetic resonance imaging (MRI) and bone scintigraphy were not performed because of financial constraints.

Based on the presumed diagnosis of iliac osteomyelitis, ultrasound-guided needle aspiration of the gluteal abscess was performed, yielding 25 mL of thick yellow pus. No drainage catheter was placed.

An intravenous antibiotic therapy was initiated empirically using cefotaxime (100 mg/kg/day in two doses) for ten days, and gentamycin (3mg/kg/day in one dose) for five days, followed by an oral switch of cefixime. Bacteriological culture was reported later as positive for methicillin-sensitive Staphylococcus aureus (MSSA).

The patient's clinical course was favorable, with resolution of both the clinical and biological signs of inflammation. The child's general condition improved, and the swelling markedly decreased. However, treatment was discontinued because of parental noncompliance, and the patient was subsequently lost to follow-up.

Discussion

Bone and joint infections are somewhat uncommon in neonates [3]. It occurs more frequently in infants and older children, with a predilection for long bones such as the femur and tibia [6]. The literature reports that *Staphylococcus aureus* is the most frequently identified pathogen [9]. The exact pathogenesis of neonatal osteomyelitis remains poorly understood. However, the immaturity of the neonatal immune system and the unique vascular anatomy of the metaphyseal region facilitate bacterial seeding specifically transphyseal vascularization and colonization of bone [10]. Pelvic involvement is particularly rare, accounting for approximately 2.3% of all cases of osteomyelitis in children, with the ilium being the most frequently affected pelvic bone [1,2].

In neonates, the clinical presentation is nonspecific and highly variable, including fever, poor feeding, irritability, lethargy, localized swelling or pain, and limitation of limb movement. These manifestations often mimic other pelvic conditions, such as septic arthritis of the hip or pelvic tumors, making the diagnosis particularly challenging [4]. Furthermore, early diagnosis is hindered by the delayed appearance of radiographic abnormalities. Iliac osteomyelitis has three recognized clinical presentations: the gluteal syndrome, the abdominal syndrome, and the lumbar syndrome [7,8]. Our patient presented with the gluteal syndrome, which closely resembled a gluteal abscess. Bilateral iliac involvement, as observed in our case, is exceptionally rare and likely reflects hematogenous dissemination of the pathogen [5]

The diagnosis of iliac osteomyelitis is based on a combination of clinical, laboratory, and imaging findings. Ultrasonography and plain radiography are usually the first-line imaging modalities. They are useful for the early detection of abscesses, osteolytic lesions, and joint effusions, and can also guide percutaneous drainage. Magnetic resonance imaging (MRI) is considered the gold standard for the diagnosis of osteomyelitis because of its high sensitivity and specificity. Bone scintigraphy may be useful for identifying multifocal disease or detecting additional skeletal sites of infection.

In our case, further imaging investigations, including MRI and bone scintigraphy, could not be performed because of financial constraints. This financial problem stemmed from the fact that the father had recently lost his job and did not have health insurance. Prompt initiation of appropriate antibiotic therapy, combined with surgical drainage or debridement when indicated, remains the cornerstone of treatment. However, there is no consensus regarding the optimal total duration of therapy, the route of antibiotic administration, the antimicrobial regimen, or the timing and criteria for transition to oral therapy. Empirical broad-spectrum intravenous antibiotics

should be started as soon as bacteriological specimens have been obtained, as delayed treatment increases the risk of infection progression, permanent osteoarticular damage, growth disturbances, septic shock, and death. Antibiotic therapy should subsequently be tailored according to the causative organism, antimicrobial susceptibility, clinical and laboratory response, local resistance patterns, drug availability, and clinician judgment. Current guidelines recommend a total treatment duration of 3 to 6 weeks for acute hematogenous osteomyelitis in children, although longer courses may be required depending on disease severity and clinical response [12].

In our patient, surgical drainage was indicated. However, because of the family's financial constraints causing a delay in entering the operating room, only ultrasound-guided needle aspiration of the gluteal abscess was performed.

In our context, due to financial constraints and cultural beliefs, parents choose to seek treatment from traditional healers as soon as the first symptoms appear. A refusal to acknowledge the risks of long-term complications and the exhaustion caused by the often lengthy follow-up schedule lead to these patients falling out of follow-up care.Several methods were used to convince the parents, including contacting social services and explaining the potential complications for the newborn.

We plan to collaborate with child welfare services, juvenile attorneys, and the police.

To our knowledge, no cases of successful ultrasound-guided percutaneous drainage of iliac osteomyelitis combined with antibiotic therapy have been reported in the literature. However, this minimally invasive approach has been described in the management of iliopsoas abscesses. In our patient, although surgical debridement and formal drainage were indicated, they could not be performed because of financial constraints. Instead, repeated ultrasound-guided percutaneous aspirations of the abscess, combined with intravenous antibiotic therapy, resulted in marked clinical improvement within 10 days. Subsequent laboratory investigations demonstrated regression of the inflammatory syndrome. Unfortunately, further follow-up was not possible because the patient was lost to follow-up. Consequently, the radiological resolution of the abscess cavity, as well as the long-term functional and anatomical outcomes, could not be assessed.

The patient is at risk of this condition becoming chronic, with multiple recurrences and even fistula formation. Asymmetry of the iliac wings may be observed during growth, as well as limited range of motion in the hip joints. Given the severity of the symptoms, the patient should have been monitored until the end of her growth.

In cases of pelvic swelling in newborns, it is mandatory to perform a blood test to assess inflammation, a frontal pelvic X-ray, and an ultrasound.

Conclusion

Septic iliac osteomyelitis is an exceptionally rare form of osteomyelitis in neonates and children. It should be included in the differential diagnosis of a gluteal mass in neonates to avoid delays in diagnosis and enable timely treatment, thereby improving clinical outcomes. Appropriate imaging plays a pivotal role in establishing the diagnosis and guiding therapeutic management. However, in resource-limited settings where advanced imaging modalities are often unavailable or unaffordable, clinicians frequently rely on clinical assessment and basic imaging to make therapeutic decisions. This case highlights the importance of maintaining a high index of suspicion for iliac osteomyelitis in neonates presenting with atypical gluteal swelling, particularly in low-resource environments, where early recognition and prompt intervention are essential to optimize patient outcomes.

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