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Pyogenic sacroiliitis: A rare paediatric case

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Abstract
Pyogenic sacroiliitis is rare, representing only 1-2% of all cases of septic arthritis in children [10]. Initial symptoms are usually nonspecific and difficult to differentiate from septic arthritis of the hip. Diagnosis of pyogenic sacroiliitis has been difficult in the past due to its deep location and may be delayed due to the lack of specific clinical signs. Delay in diagnosis may lead to several complications, such as abscess or sequestration formation, prolonged period of sepsis, and long-term joint deformity [11]. Newer diagnostic techniques such as bone scanning, computed tomography (CT), and magnetic resonance imaging (MRI) aid in early diagnosis and treatment [12].

Keywords: pyogenic sacroiliitis, septic arthritis, hip deformity, staphylococcus aureus, antimicrobial therapy

Introduction
Pyogenic sacroiliitis accounts for 12% of all cases of septic arthritis with less than 200 cases reported in the English literature since the beginning of the twentieth century. Considerable delay between presentation and diagnosis is seen because of unusual presentation and diagnostic dilemma. Cultures of joint fluid usually grow Staphylococcus aureus. Most reported cases required prolonged antimicrobial therapy of six to nine weeks.
The majority of pyogenic sacroiliitis cases are caused by Staphylococcus aureus [10]. The risk factors for pyogenic sacroiliitis include intravenous drug abuse, pregnancy, trauma, and infection of other organ systems [11]. Since 2007, methicillin-resistant S. aureus (MRSA) has emerged as a cause of pyogenic sacroiliitis, and cases with community-acquired (CA)-MRSA as the causative pathogen have been reported. Most studies of CA-MRSA-associated pyogenic sacroiliitis have been conducted in young children or adolescents; there are limited data available for adult patients. In most patients with septic arthritis caused by CA-MRSA, intravenous antibiotics are switched to oral trimethoprim–sulfamethoxazole (TMP-SMX) or clindamycin.

Case report
The case report is of a 6 year old male child. He presented with fever since 5 days to the paediatric department of Navodaya medical college & research centre, Raichur. He was admitted once he also complained of adominal pain after 5 days of high grade fever. He was evaluated for source of infection but nothing worked out. Later, after 2 days he complained of pain in the right buttock. The x- ray, ultrasonography gave negative results. After 3 days he was unable to walk and was referred to orthopedic department. On clinical examination, the boy was running high grade fever of 39-40 degree celcius. He had tachycardia. The abdominal examination was normal. On physical examination revealed exquisite tenderness on palpation of the right hip and right sacroiliac joint & he had flexion deformity of 45% degree at right hip joint. Initial blood reports were normal. Repeat blood tests showed leukocytosis (12,300 cells/cumm) with neutrophilia (72%). C-reactive protein being high (16mg/L) and ESR was 40 mm/1st hour. First blood culture was sterile and repeat blood culture was also sterile. The admitting diagnosis was septic arthritis of right hip joint, empirical antibiotic therapy (oxacillin) was started and skin traction applied.
Plain radiograph of the pelvis & ultrasonography of the hip were normal. CT scan of the pelvis was performed, it revealed apparent widening of the right sacroiliac joint with infiltration.

MRI showed right iliac osteomyelitis with associated 1.2*2.7*5.4 cm abscess in the iliacus muscle extending superiorly into the quadrates lumborum.

Patient was taken to operation theatre, under general anaesthesia incision and drainage of abscess was done. Sample sent for Gram stain, ZN stain, AFB, histopathology, culture & sensitivity. Culture and sensitivity report isolated staph aureus, sensitive to vancomycin/linezolid. Patient was started intravenous linezolid for 3 weeks and discharged. 3 weeks oral linezolid was advised at the time of discharge. Patient was pain free and flexion deformity subsided at the time of discharge.

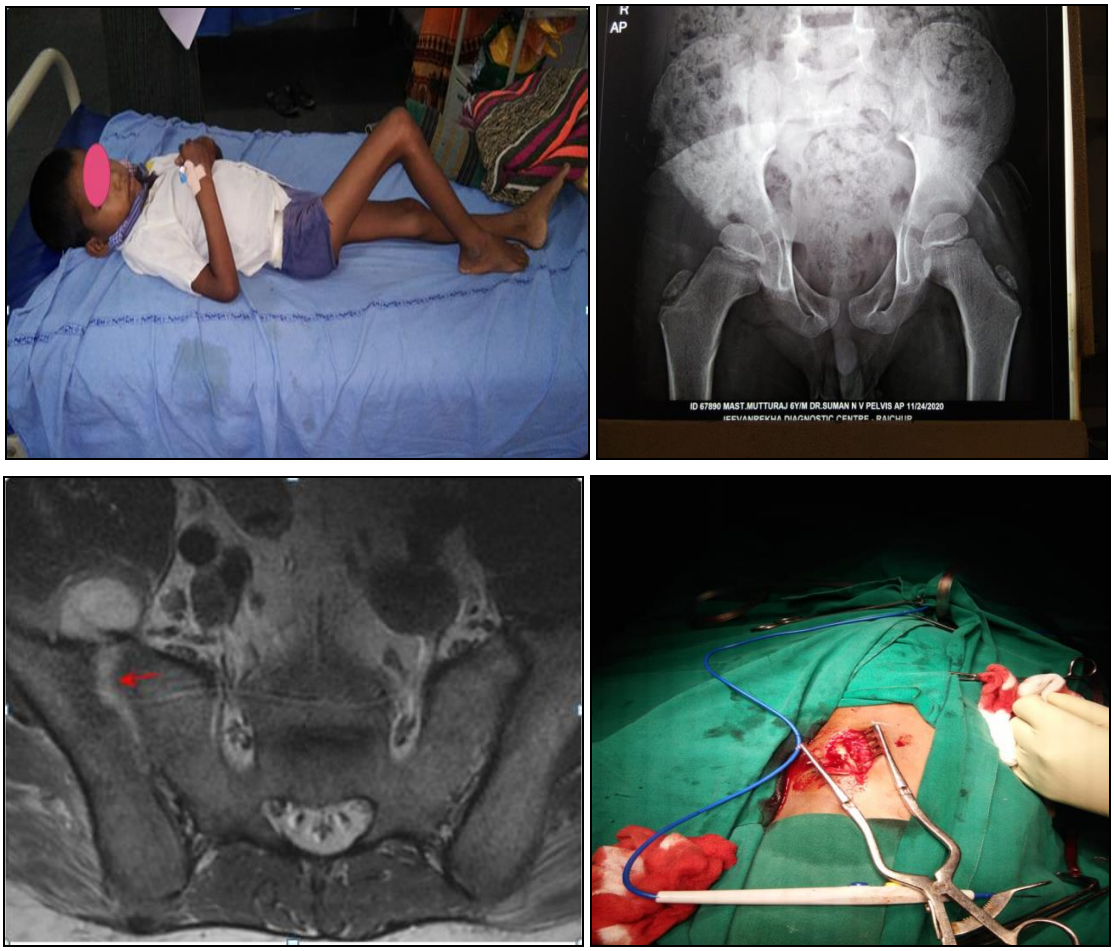

Fig 1: An intra-operative image, under general anaesthesia patient positioned in supine position, incision taken over iliac crest to expose iliac bone and Iliacus muscle for drainage of abscess

Discussion

Pyogenic sacroiliitis is quite rare disease in children and remains a diagnostic challenge. Schaad *et al*. had reported77 cases of pyogenic sacroiliitis in patients <17 years old in a review of the literature from 1941 to 1979 [4]. Wu *et al*. reported a series of 33 cases of pyogenic sacroiliitis and they identified 11 cases aged less than 15 years [5]. Wada *et al*. reviewed eight pediatric patients with sacroiliitis identified between 2000 and 2005 [6].

The typical symptoms of fever, buttock pain, and limping gait are often absent. Furthermore, because of the complex anatomy of the sacroiliac joint, the pain is commonly found to be referred to other sites such as the lower back, abdomen, thigh, or hip and can mimic a number of processes other than sacroiliitis [5]. General features of sepsis such as tachycardia and tachypnea are usually seen at initial presentation [10]. Clinical examination is decisive: sacroiliac joint palpation, FABER test.

There is no specific blood test which points to the diagnosis of pyogenic sacroiliitis; white blood cells count may be increased or normal; ESR and CRP may be elevated in the majority of cases, but while they are sensitive, they may not be specific [12]. Blood cultures should be performed before antibiotherapy. The most common bacterial pathogen recovered from blood and/or from the synovial fluid specimen is Staphylococcus aureus, accounting for 80% of pyogenic sacroiliitis in paediatric patients.

MRI is the imaging technique with the highest sensitivity and specificity (95% and 100%, resp.) for the confirmation of the diagnosis of pyogenic sacroiliitis. MRI combines good visualisation of the complicated anatomy of the sacroiliac joint with the ability to localise different degrees of inflammation and edema. It has the ability to visualise fluid in the sacroiliac joint, bone marrow edema, and soft tissue abscess.

In sacroiliitis with local abscess formation, MRI can detect spinal involvement which is important in the decision of surgical intervention. Medical management of pyogenic sacroiliitis is early diagnosis, antibiotic therapy, and bed rest. Antibiotic should be direct against Staphylococcus aureus and intravenous oxacillin should be the drug of choice for empirical therapy followed by oral oxacillin (after normalisation of both symptoms and blood biology) for a total duration of 4–6 weeks. If pathogen is identified antibiotherapy is adjusted. In cases of poor response to initial empirical antistaphylococcal therapy, the clinicians should prescribe antimicrobials with coverage of gram-negative pathogens.

Conservative management therapy has been proved to be effective in a series of patients with soft tissue abscesses [6]. However surgical drainage is indicated in presence of sequestrum formation, osteomyelitis, and failure of medical management. Pyogenic sacroiliitis should always be included in the differential diagnosis of any child with fever and buttock, hip, or back pain. FABER test should be performed routinely in these patients and if positive, an MRI is recommended to rule out pyogenic sacroiliitis.

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