


Case Report

An uncommon case of septic arthritis of the sacroiliac joint due to *Streptococcus pyogenes*

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Introduction

Septic arthritis of the sacroiliac joint is a rare condition [1]. The commonest organism to cause pyogenic septic arthritis is *Staphylococcus aureus* and only a few cases due to *Streptococcus pyogenes* have been reported [2]. We report a case of septic arthritis of the sacroiliac joint due to *S. pyogenes*.

Case presentation

A 68-year-old lady presented to the medical casualty unit with fever, chills and rigors for three days and right sided buttock pain for two days duration. Her pain had got worse rapidly and she was unable to stand due to the pain. The rest of her systemic inquiry did not reveal involvement of other joints (including lower back pain) or a history of urinary or bowel symptoms, skin rashes or red eye. She had a history of attending a foot pilgrimage to Kataragama in southern Sri Lanka 5 days prior to the onset of her symptoms.

She had had dyslipidaemia for the last 5 years and was on atorvastatin 20 mg at night. She had unremarkable medical and surgical histories apart from an abdominal hysterectomy for leiomyoma of the uterus 10 years previously. She did not have a history of sexual promiscuity, consumption of unpasteurized milk or a past history or contact history of tuberculosis. She did not have a history of intravenous drug abuse. She was a housewife and had two children aged 25 years and 30 years.

The patient was in severe pain on admission which scored 9/10 on the visual analogy scale. Systemic examination revealed a temperature of 101° F, blood pressure of 110/70 mmHg and a pulse rate of 100/min. She did not have any cardiac murmurs on auscultation. Her

respiratory and abdominal examinations were normal. Examination of the right hip joint revealed normal range of movements and severe pain over the right buttock while performing the Patrick test. There was tenderness over the right sacroiliac joint. The other joints and the respiratory, abdominal and neurological examinations were normal.

Investigations revealed a total white cell count of 14,000/ μ l (neutrophils – 84%), haemoglobin 11.5 g/dL, platelet count 278,000/ μ l. Her initial CRP was 220 mg/l while the ESR was 110 mm in the 1st hour. The radiographs of the chest and pelvis, urinalysis, 2D echocardiogram, liver and renal functions were normal. An urgent ultrasound scan of buttocks and right-side hip joint revealed subcutaneous oedema around the right-side buttock area inferiorly.

A MRI scan was done for further evaluation on day 5 of the illness which demonstrated a small collection of fluid over the anterior margin of the right sacroiliac joint measuring 1cm in thickness. Subchondral bone marrow oedema on either side of the sacroiliac joint was noted. Cartilages and adjacent soft tissue showed a marked contrast enhancement which was in keeping with a diagnosis of septic arthritis of the right sacroiliac joint (Figure 1). The contralateral sacroiliac joint, bilateral hip joints and psoas muscles were normal.

Blood culture, taken on admission, yielded a positive growth of *Streptococcus pyogenes*. The patient was commenced on intravenous cefotaxime 1 g 8 hourly and intravenous vancomycin 500 mg 6 hourly. The fever responded to treatment and the inflammatory markers gradually improved. A total of 2 weeks of intravenous antibiotics followed by 2 weeks of oral antibiotics led to complete recovery.

Discussion

Pyogenic septic arthritis of the sacroiliac joint is rare and accounts for 1% to 2% of all septic arthritis [1]. Diagnosis of sacroiliac joint septic arthritis is challenging and is frequently delayed due to lack of awareness by clinicians and its nonspecific clinical presentation. The clinical symptoms which include lower back pain, gluteal pain, abdominal pain and fever may not be consistently present [1].

It is not surprising that more than half the reported cases were not diagnosed for 10 or more days after onset of symptoms [3]. In one study, which included 39 patients with infectious sacroiliitis, the mean time to diagnosis was as long as 43.3 days with a range of 2 to 365 days [1]. In our patient, the diagnosis of infectious sacroiliitis could be confirmed relatively early due to a high degree of clinical suspicion and early imaging. Although it is believed that the majority of septic sacroiliitis occurs through haematogenous seeding from a pre-existing infection in a distant site, the primary site of infection can be difficult to identify and may never be identified in over 40 % of patients as was the case in our patient [4,5]

Gram-positive cocci, predominantly *Staphylococcus aureus*, have been reported to be the most frequently cultured organisms in cases of infectious sacroiliitis. Less than 20% of reported cases were caused by Gram-negative bacilli, of which *Pseudomonas aeruginosa* and *Escherichia coli* were the most common [4]. *Streptococcus pyogenes* is a known pathogen causing septic arthritis [6] and osteomyelitis [7]. However, *Streptococcus pyogenes* causing septic arthritis in the sacroiliac joint is rare. In a review of 166 patients with infectious sacroiliitis, only three patients had infectious sacroiliitis due to *Streptococcus pyogenes* [2].

Diagnosis of septic arthritis is based on clinical, imaging and microbiological methods. Trauma, immune deficiency, intra-venous drug abuse, pelvic inflammatory disease and pregnancy are known predisposing factors and, in some studies, up to 60% of patients with infectious sacroiliitis had a predisposing risk factor [8].

Aspiration of the sacroiliac joint is difficult to achieve because the joint is deeply seated. However, it has a value in patients with clinical and radiological features suggestive of pyogenic infection but with negative blood cultures to obtain a microbiological diagnosis and determine antibiotic sensitivity patterns [9].

MRI has become the preferred mode of imaging over technetium bone scan in the diagnosis of infectious sacroiliitis [10]. In our patient, a small fluid collection over the anterior margin of the right sacroiliac joint measuring 1cm in thickness and subchondral bone marrow oedema on either side of the sacroiliac joint was seen. Additionally, cartilages and adjacent soft tissue showed a marked contrast enhancement.

Optimal treatment consists of early diagnosis, bed rest and antibiotic therapy according to the sensitivity pattern, if available. Poor antibiotic penetration, presence of abscesses, sequestra or foreign bodies should be considered in patients whose antibiotic therapy alone does not achieve complete resolution of the infectious process [11]. Surgical options in this group of patients include debridement and arthrodesis [12]. Although the short-term outcome of most of the patients following antibiotic treatment is favourable, a high incidence of abscesses, osteomyelitis, and relapse after stopping antibiotic therapy has been reported in intravenous drug abusers [13,14]

In conclusion, the diagnosis of septic arthritis of the sacroiliac joint can be challenging. However, a high degree of clinical suspicion and early MRI of the lumbar spine and sacroiliac joint in a febrile patient with gluteal pain is beneficial to confirm the diagnosis. Isolation of the organism by means of blood culture or joint fluid aspiration is useful to choose specific antibiotics. Timely diagnosis and treatment often lead to complete recovery although consensus on modalities of patient follow-up remain to be established.

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