

Acute septic arthritis of the right sacroiliac joint following uncomplicated spontaneous vaginal delivery at term: A case report

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ABSTRACT

Introduction: We present a case of acute septic arthritis of the right sacroiliac joint following uncomplicated spontaneous vaginal delivery at term. Postpartum acute arthritis has not been reported adequately in literature. **Case Report:** A 34-year-old female presented with back pain, pelvic pain, and difficulty in walking seven days postnatally. A definitive diagnosis of primary right sacroiliac joint septic arthritis was eventually made by MRI. The patient had 12 days of intravenous antibiotics. During this time, she slowly begun mobilizing again, firstly with the aid of crutches and then independently. **Conclusion:** There is a long list of differential diagnosis of postpartum pelvic and back pain which makes diagnosis of the etiological factor difficult. However, when reviewing a postpartum patient with low back pain or posterior pelvic pain clinicians should consider postpartum sacroiliitis to initiate prompt management and avoid missing a potentially life-threatening diagnosis.

Keywords: Low back pain, Postnatal acute septic sacroiliac arthritis, Posterior pelvic pain, Right sacroiliac joint

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INTRODUCTION

Postpartum pelvic and back pain is an uncommon but disabling entity. Its true aetiology and incidence remain unclear and vary considerably with ethnic and cultural backgrounds [1]. The specific distinction between postpartum lumbar back pain and pelvic pain can be difficult to make at times [2].

We report a case of acute septic arthritis of the right sacroiliac joint following an uncomplicated spontaneous vaginal delivery presented with lower back pain. Sacroiliitis is very rarely associated with pregnancy. However, there are some reported cases with less than 15 returned in a literature review.

It has been suggested that the pathophysiology may be precipitated by relaxation of the pelvic ligaments during the pregnancy. This can result in recurrent microtrauma underpinned by increased pelvic ring movements. These movements can prime the joint surfaces to become more susceptible to infection during transient bacteremia. This is exacerbated by the relatively immunocompromised state of a pregnant patient [3].

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CASE REPORT

A 35-year-old female presented to the labor ward feeling generally unwell, seven days following an uncomplicated spontaneous vaginal delivery of a healthy male infant. She was previously fit and well having had two normal spontaneous vaginal deliveries. She had also experienced progressively worsening right sided lower back pain which made walking even short distances extremely difficult. The pain radiated down to the top of the right buttock and distally down the right leg. Physical examination revealed pyrexia of 39.2°C, tachycardia and tachypnea. She found it painful to weight bear through the right hip and all hip movements were restricted by pain. There was no obvious lumbar spine or knee pathology identified, but the right buttock was extremely tender to deep palpation.

Initial laboratory investigations revealed C-reactive protein (CRP) of 68 mg/L, and white blood cell count of $12.20 \times 10^3/\mu\text{L}$. Over the following 24 hours her CRP was elevated to 312 mg/L and white blood count to $13.80 \times 10^3/\mu\text{L}$. Blood and urine cultures demonstrated no growth but a high vaginal swab cultured a group B streptococcus.

The patient was fluid resuscitated and was commenced on intravenous antibiotics Co-amoxiclav 1.2 g eight hourly and provided with analgesia.

The initial working diagnosis was of an epidural abscess secondary to the epidural analgesia that the patient had received during labor. Consequently, an MRI of the lumbosacral spine was performed at eighth day postpartum which revealed a small amount of free fluid in the right iliac fossa. A trans-abdominal ultrasound was consequently requested which reported no evidence of a collection in the pelvis.

The patient's condition progressively deteriorated with a synchronous worsening of her right sided buttock pain and mobility and a working diagnosis of right hip septic arthritis was thought. A plain anteroposterior pelvis radiograph was requested before proceeding to a right hip aspiration under sterile conditions in the operation theatre. No aspirate was obtained for culture. Consequently, the patient had an MRI pelvis which revealed high signal fat on the T2 in the right sacroiliac joint which indicates sacroiliac joint inflammation (Figure 1). There was also a fluid filled structure extending anteriorly from the right sacroiliac joint. In addition, high signal edema was reported around the gluteal muscles with a further fluid filled structure posterior to the inferior right sacroiliac joint.

A diagnosis of primary right sacroiliac joint septic arthritis was made. The patient had a total of 12 days intravenous meropenem and clindamycin before conversion to oral antibiotics. During this time, she slowly begun mobilizing again, firstly with the aid of crutches and then independently.

The patient was reviewed four weeks following discharge in an orthopedic outpatient clinic. She continued to walk with an antalgic gait but was mobilizing

independently. Her white blood cell count and C-reactive protein had returned to normal.

DISCUSSION

During pregnancy there is increased risk of musculoskeletal disorders and injuries. This is due to numerous anatomical, physiological, and hormonal changes women experience during pregnancy such as change in gait, postural parameters, as well as sensory feedback.

The influences of increased hormones such as estrogen and relaxin initiate the remodeling of soft tissues, cartilage and ligaments. Certain skeletal joints such as the pubic symphysis and sacroiliac joint particularly have increased laxity.

Possible etiologic factors for postpartum pelvic pain include protracted delivery, epidural anesthesia, history of previous back pain, muscle weakness, and excessive pelvic relaxation secondary to increased levels of the hormones progesterone and relaxin during delivery, leading to acute pathologic separation of the symphysis pubis and posterior sacroiliac ligament insufficiency [4].

Pelvic infection can be the underlying etiological factor for postpartum pelvic pain. Approximately 6% of

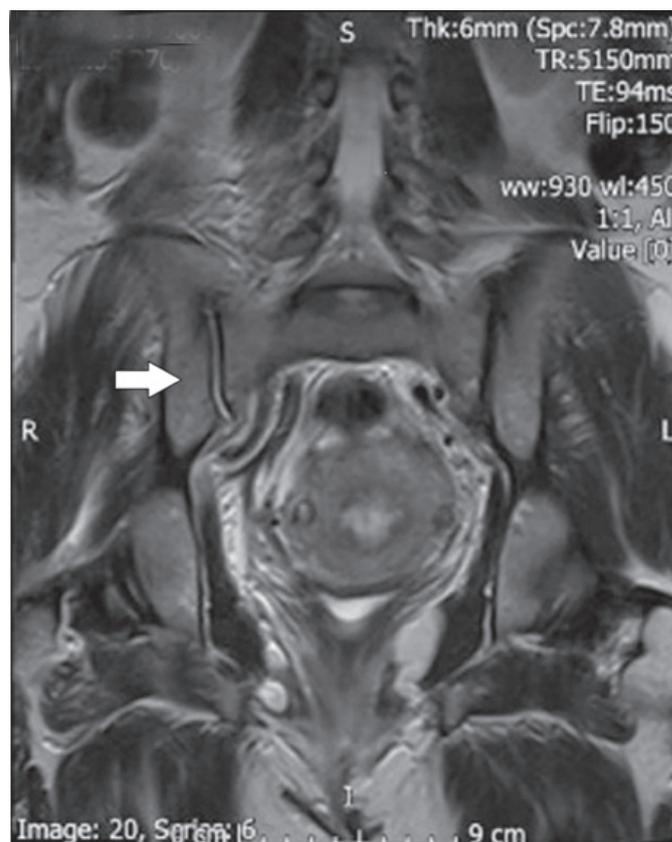


Figure 1: Magnetic resonance imaging scan of pelvis, coronal T2 demonstrating high signal in the right sacroiliac joint. The arrow shows high signal fat on the T2 in the right sacroiliac joint and fluid filled structure extending anteriorly from the right sacroiliac joint.

live births result in postpartum infection in the developed world. The main cause of infection following a normal vaginal delivery is mastitis and urinary tract infection. The majority of postpartum infections are typically gram-positive *Staphylococcus* and *Streptococcus* species [3]. In addition *Escherichia coli*, *Chlamydia trachomatis* and anaerobic bacteria have also been implicated. Group A *Streptococcus* is especially significant. It has been associated with a 20–25% risk of mortality secondary to a toxic shock like syndrome induced by its exotoxin. It should, therefore, be managed with caution. Postpartum septic arthritis is exceptionally rare and there is as such little previously published on the topic.

Nearly half of all postpartum women experience some form of lower back and posterior pelvic pain [5]. These symptoms are most frequently self-limiting and managed conservatively. This case illustrates that some postpartum women who present with seemingly benign symptoms may subsequently develop a rapid clinical deterioration. Indeed, our patient presented with a systemic inflammatory response syndrome secondary to an evolving septic arthritis. Although the focus of sepsis was not immediately identified she was aggressively resuscitated and treated with intravenous antibiotics.

Septic infection of sacroiliac joint usually develops as a result of hematogenous seeding due to a bacteremic episode. It may also occur as a result of joint aspiration or local corticosteroid joint injection or after trauma to the joint without an obvious break in the skin. Bacteria may also gain entry into the joint by direct introduction or extension from a contiguous site of infection [6].

Virtually every bacterial organism has been reported to cause septic arthritis. The microorganisms responsible for bacterial arthritis are largely dependent on host factors. The most common etiological agent of all septic arthritis is *Staphylococcus aureus* and *Streptococcus* spp. is also associated with septic arthritis.

Risk factors for postpartum septic arthritis include recent bacteremia, rheumatoid arthritis, corticosteroid therapy, patients with diabetes mellitus, leukemia, cirrhosis, granulomatous diseases, cancer, hypogammaglobulinemia, intravenous substance abuse, or renal disease.

The classical presentation of acute septic arthritis includes recent onset of fever, malaise, and local findings of pain, warmth, swelling, and decreased range of motion. However, patients may present with atypical symptoms.

As in this case, peripheral blood leukocyte counts might be elevated and most patients display elevated C-reactive protein levels. Aspirated fluid analysis is also very important and should be sent for aerobic, anaerobic, mycobacterial, and fungal culture prior to the initiation of antimicrobial therapy.

Plan radiology and ultrasonography are helpful in diagnosis. Computed tomography scans have limited use during the early stages of septic arthritis, however, they may enable the visualization of joint effusion, and soft tissue swelling therefore, CT scan is more sensitive than plain radiography particularly in sacroiliac joint.

An MRI scan is very useful diagnostic tool for the early determination of sacroiliitis in particular, because sacroiliac joint is difficult to access, due to its ability to displays greater resolution for soft tissue abnormalities than CT scan or radiography. Radionuclide scans are often able to detect localized areas of inflammation.

Patients who start treatment after experiencing symptoms for seven days or more demonstrate a poor outcome. Therefore, prompt diagnosis and rapid initiation of therapy are of the utmost importance in limiting the morbidity associated with septic arthritis. In addition, early physical therapy and aggressive mobilization are important for optimal recovery [6]. Delay in diagnosis can also lead to a longer time being taken to clear the joint infection with appropriate therapy.

The outcome in patients with septic arthritis due to some of the more virulent organisms such as superantigen-producing *S. aureus* and certain gram-negative bacilli is poor in spite of the use of optimal therapy.

CONCLUSION

In conclusion, there is a long list of differential diagnosis of postpartum pelvic and back pain which makes diagnosis of the etiological factor difficult. However, when reviewing a postpartum patient with low back pain or posterior pelvic pain clinicians should consider postpartum sacroiliitis to initiate prompt management and avoid missing a potentially life-threatening diagnosis.

Author Contributions

Osama Eskandar – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

William Carlino – Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published

Guarantor

The corresponding author is the guarantor of submission.

Conflict of Interest

Authors declare no conflict of interest.

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