

## Acute Septic Sacroiliitis Secondary to Trauma in a Teenage Basketball Player

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Received: April 23, 2019; Published: May 31, 2019

### Abstract

Infectious sacroiliitis, irrespective of the responsible bacterium, is a complex infection due to the deep localization of the joint, its low incidence, and the resulting diagnostic errors [1]. Unilateral sacroiliitis is a relatively uncommon problem with diverse etiologies including infection and trauma [2]. The most frequently reported case of acute sacroiliitis is pyrogenic, which is typically unilateral, and is mostly a disease of young adults that occurs with explosive onset of symptoms including severe buttock pain and fever [3]. Magnetic Resonance Imaging (MRI) is considered the gold standard in diagnosing unilateral sacroiliitis as it has a high sensitivity in identifying lesions in the early stage. Blood markers and laboratory investigations can help confirm the diagnosis and identify a treatment regimen [2]. We describe a rare case of acute, infectious, unilateral septic sacroiliitis caused by *S. aureus* secondary to a trauma in a teenage basketball player.

**Keywords:** Septic Sacroiliitis; Osteomyelitis; Soft Tissue Abscess; Bacteremia

### Introduction

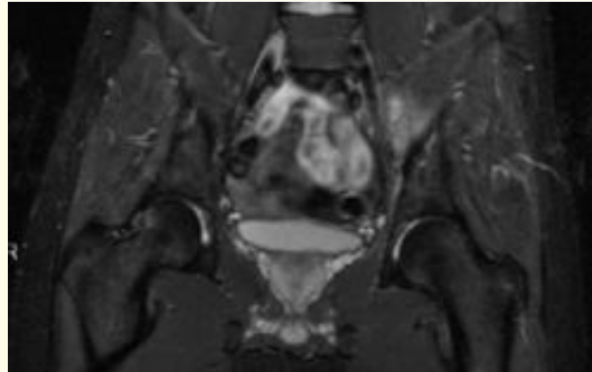
Infectious sacroiliitis, irrespective of the responsible bacterium, is a complex infection due to the deep localization of the joint, its low incidence, and the resulting diagnostic errors [1].

### Case Report

The patient was a 15-year-old, otherwise healthy young man who was seen initially at an urgent care clinic with a chief complaint of left buttock pain the day after a fall during a sports contest. He reported that he was playing in a high school basketball game and fell directly onto the left buttock onto the hardwood court. He reports that he was able to finish the game; however, that same evening, he awoke from sleep with significant sharp pain in his left buttock with radiation into his left thigh. X-rays of his lumbar spine and left hip were ordered at the urgent care and read as normal. He was treated with acetaminophen/hydrocodone, cyclobenzaprine, and methyl prednisone for suspected low back injury. His symptoms worsened.

Two days later, he was clinically evaluated by his pediatrician, who noted swelling along the left low back and buttock region. He was using a walker for ambulation due to pain. He was referred urgently to orthopedics for evaluation. Two days later, he was seen by an orthopedic surgeon. At this point he was still unable to ambulate without assistance and had significant pain with any movement of the hip. He was instructed to remain non-weight bearing and referred for MRI of his hip to evaluate for an occult fracture and further diagnosis.

Review of the MRI one day later showed abnormal signal intensity within the left iliac bone and left sacrum (Figure 1). Preliminary diagnosis was a sacroiliac (SI) joint contusion, although the pelvis was not adequately visualized. He was then referred for an MRI of his pelvis, and instructed to discontinue methyl prednisone and cyclobenzaprine, and instead prescribed ketorolac for pain control.



**Figure 1:** MRI showing abnormal signal intensity within the left iliac bone and left sacrum.

Later that day, he presented to our pediatric orthopedic office. He was in significant discomfort and unable to ambulate using crutches or a walker. His father was carrying him. He reported frequent urination and was using a urinal to avoid movement. He complained of significant pain with any movement of the trunk or lower extremity. On physical examination he was found to have visible soft tissue fullness along the left buttocks and posterior hip. He reported marked tenderness to palpation along the entire left lower back and buttock region and focal tenderness along the sacroiliac joint extending into the lower ischium. No palpable mass was identified. His strength was grossly intact with normal reflexes and the ability to resist manual muscle testing. He was sent directly to the Emergency Department for an urgent pelvic MRI and further evaluation and diagnosis.

In the Emergency Department he was found to be afebrile (37.6°C). Complete Blood Count and an MRI of the pelvis were performed. He was discharged home for outpatient follow-up the next day. The next morning, his laboratory investigations and MRI results were reviewed. The blood labs showed leukocytosis of 22k with 65% PMN. His serum C-reactive protein (CRP) was elevated (64.9 mg/dL). The MRI study of the pelvis showed fluid and edema extending into the overlying left iliacus muscle (Figure 2). A small 2.2 mm x 0.87 mm fluid collection was seen along the anterior margin of the sacroiliac joint, deep to the overlying iliacus muscle.



**Figure 2:** MRI of the pelvis showed fluid and edema extending into the overlying left iliacus muscle.

These diagnostic findings and abnormal laboratory results were consistent with septic sacroiliac joint, osteomyelitis, and soft tissue abscess. The patient was instructed to return to Emergency Department for immediate admission. Later that day, he underwent a procedure of CT guided drainage of the abscess and was started on high dose IV antibiotics.

Cultures of the aspirated fluid and blood both grew methicillin-sensitive staphylococcus aureus. He was administered and responded well to IV antibiotics with gradual improvement in his pain. After 5 days of IV antibiotics he was discharged home on a prolonged course of high dose oral Keflex. He remained partial weight bearing upon discharge but this also improved over the following week.

He was seen for follow-up two weeks later with a persistent limp and mild sacroiliac joint pain. He was started in physical therapy. After 5 physical therapy visits over a 4-week period, he made a full recovery. He was back to sports, playing basketball at 6 weeks after his hospitalization (8 weeks after initial injury).

### Discussion

Informed consent was obtained from the patient for the use of his information and radiographs. Institutional review board approval for case reports is not required at our institution.

Septic sacroiliitis is relatively uncommon and can be difficult to diagnose [4]. The delay in diagnosis detailed in this case is a good example of that challenge. On review of the medical records, there was denial of fever and chills. It is unclear whether the medications he was taking prevented a febrile response. He was not taking any medications for the treatment of acne such as isotretinoin. Septic sacroiliitis often presents with a triad of fever, antalgic gait, and buttock pain, and is common in children and young adults [5]. In this case, the infection potentially developed within the SI joint after hematogenous spread combined with the recent trauma. A delay in diagnosis could allow for the development of a fluid collection/abscess within the adjacent soft tissue and associated osteomyelitis [6].

Despite normal plain X-rays, diagnostic imaging with MRI of the hip and pelvis were paramount to identifying the final diagnoses and appropriate treatments. Furthermore, since acute unilateral sacroiliitis can also be a manifestation of reactive inflammatory arthritis which may yield MRI appearances mimicking infection, laboratory investigations ultimately helped to identify the pathogen and appropriate therapy [7]. Previous literature has shown that significant differences in laboratory results were not found between inflammatory and infectious pediatric patients with sacroiliitis [8]. This outlines the nonspecific clinical and laboratory presentation of sacroiliitis and its difficult diagnosis as well as the importance of compiling clinical, laboratory, and imaging results into the diagnosis and treatment.

### Conclusion

We have reported a case of *S. aureus* bacteremia and septic sacroiliitis secondary to sports injury in a healthy young teenager. Previous literature has commented that early and targeted antibiotic therapy with surgical drainage is essential in the management of septic sacroiliitis [5]. In this case, the patient indeed improved through this management. Physical therapy also aided in his rehabilitation, particularly with the normalization of ambulation and functional return to sports.

### Disclosure

No conflict of interest or sources of support.

### Bibliography

1. Matt M., *et al.* "Infectious sacroiliitis: retrospective analysis of 18 case patients". *Médecine et Maladies Infectieuses* 48.6 (2018): 383-388.

2. Kanna RM., *et al.* "Unilateral sacroiliitis: differentiating infective and inflammatory etiology by magnetic resonance imaging and tissue studies". *European Spine Journal* 28.4 (2018): 762-767.
3. Slobodin G., *et al.* "Acute Sacroiliitis". *Clinical Rheumatology* 35.4 (2016): 851-856.
4. Hermet M., *et al.* "Infectious sacroiliitis: a retrospective, multicenter study of 39 adults". *BMC Infectious Diseases* 12 (2012): 305.
5. Al-Farsi F., *et al.* "Acute streptococcus mitis sacroiliitis in a teenager with unclear source of bacteremia: a case report and literature review". *Case Reports in Infectious Diseases* (2018): 2616787.
6. Mancarella L., *et al.* "Septic sacroiliitis: an uncommon septic arthritis". *Clinical and Experimental Rheumatology* 27.6 (2009): 1004-1008.
7. Dubash S., *et al.* "Acute unilateral sacroiliitis mimicking infection on magnetic resonance imaging with response to nonsteroidal anti-inflammatory drugs: a distinct presentation of spondyloarthritis?" *Journal of Rheumatology* 45.12 (2018): 1708-1710.
8. Vardi Y., *et al.* "Pediatric infectious sacroiliitis: characterization and differentiation from noninfectious etiologies". *Pediatric Infectious Disease* (2019).

**Volume 10 Issue 6 June 2019**

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