

IMAGES IN EMERGENCY MEDICINE**Infectious Disease**

Girl with left-sided hip pain and fever

Rebecca Rossi MD | Hilina T. Kassa MD, MHS | Magdy W. Attia MD

Emergency Services, Nemours/Alfred I. duPont Hospital for Children, Wilmington, Delaware, USA

Correspondence

Hilina T. Kassa, MD, MHS, Emergency Services, Nemours/Alfred I. duPont Hospital for Children, 1600 Rockland Road, Wilmington, DE 19803, USA.

Email: Hilina.Kassa@nemours.org**1 | CASE PRESENTATION**

A previously healthy 13-year-old girl presented to the pediatric emergency department (PED) with 5 days of progressively worsening left-sided hip pain and 4 days of fever. Although she was able to bear weight on the left leg, she walked with a limp. There was no preceding trauma or illness. In the PED, she was febrile to 39.5°C and tachycardic with other vital signs appropriate for her age. On examination, she had full range of motion of the left hip with significant tenderness only to palpation over the left iliac crest and left gluteal region. Examination was otherwise unremarkable with no overlying skin changes, warmth, edema, or breaks in the skin. Initial laboratory studies revealed abnormalities, including pancytopenia (WBC 2.5 k/uL, hemoglobin 11.5 g/dL,



FIGURE 1 Contrast-enhanced coronal image of the pelvis demonstrating diffuse enhancement involving the iliacus (i) and gluteal (g) muscles surrounding the left iliac bone. There is no rim-enhancing collection to indicate an abscess

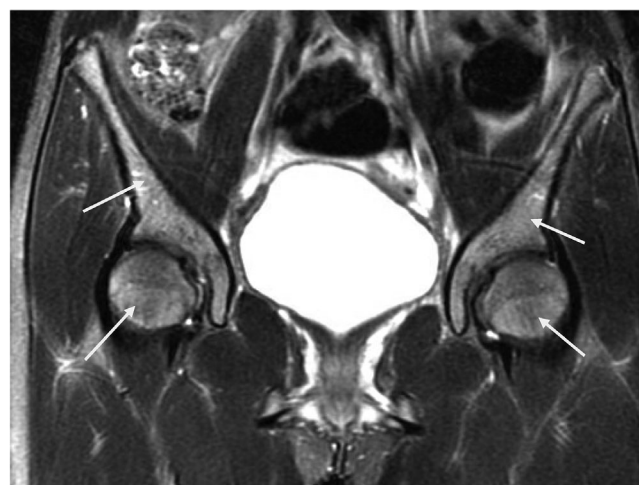


FIGURE 2 Diffusely increased T2 signal intensity within the osseous structures of the pelvis. Findings may be secondary to red marrow reversion or myeloid hyperplasia, which can be seen in times of hematopoietic stress

and platelets 32 k/uL), elevated inflammatory markers (C-reactive protein 12.6 mg/dL and erythrocyte sedimentation rate 31 mm/hour), and elevated liver enzymes (alanine aminotransferase 153 U/L and aspartate aminotransferase 221 U/L). The working diagnosis at this point was acute osteomyelitis of the iliac bone. Magnetic resonance imaging (MRI) of the pelvis was performed with and without contrast and revealed abnormal signal intensity and contrast enhancement of the left iliacus and gluteal musculature surrounding the left iliac wing without evidence of abscess (Figure 1). In addition, diffusely increased T2 signal and slightly decreased T1 signal intensity was noted throughout all visible osseous structures (Figure 2). Hours after initial presentation, blood culture resulted positive for methicillin-sensitive staph aureus (MSSA).

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2 | DIAGNOSIS

2.1 | Acute bacterial myositis (pyomyositis)

This patient's MRI findings were consistent with myositis. Given her MSSA bacteremia and imaging finding consistent with soft-tissue infection, the most likely diagnosis is pyomyositis without abscess formation. Acute bacterial myositis can be caused by contiguous spread from a soft-tissue infection, penetrating trauma, or hematogenous spread. When the source is hematogenous, it is referred to as pyomyositis and is often associated with abscess formation. MSSA is the most common pathogen in these cases.¹ Although primary pyomyositis is rare in temperate climates, its incidence outside of tropical climates has been increasing in recent years. Risk factors include immunodeficiency (eg, HIV), diabetes mellitus, malignancy, and local muscle trauma. MRI is the imaging modality of choice, and treatment includes drainage of the abscess with pathogen identification when possible, followed by targeted antibiotic therapy.² This patient's abnormal bone mar-

row enhancement on MRI and significant cytopenia initially raised suspicion for a malignant process such as leukemic infiltration of the bone marrow. However, given that the patient's cytopenia resolved with antibiotic treatment, bone marrow abnormalities were likely secondary to infection. The patient completed a 3-week course of cephalexin and made a full recovery.

REFERENCES

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