



> THE PATIENT

58-year-old man

> SIGNS & SYMPTOMS

- Bilateral shoulder pain
- History of prostate cancer
- Limited shoulder range of motion

CASE REPORT



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*The authors reported no
potential conflict of interest
relevant to this article.*

doi: 10.12788/jfp.0340

> THE CASE

A 58-year-old African American man with a past medical history of prostate cancer, hypertension, hyperlipidemia, osteoarthritis, and gastroesophageal reflux disease presented to our office to establish care with a new provider. He complained of bilateral shoulder pain, that was worse on the right side, for the past year. He denied any previous falls, trauma, or injury. He reported that lifting his grandkids was becoming increasingly difficult due to the pain but denied any weakness or neurologic symptoms. He had been using over-the-counter nonsteroidal anti-inflammatory drugs (NSAIDs), which provided minimal relief.

On physical examination, the overlying skin was normal and there was no tenderness to palpation. His shoulder range of motion was limited with complete flexion, but otherwise intact. Muscle strength was 5 out of 5 bilaterally, and neurovascular and sensory examinations were normal. On the right side, the Empty Can Test was positive, but the Neer and Apley tests were negative. All testing was negative on the left side.

The patient was referred for 10 sessions of physical therapy, which he completed. His pain persisted, and an x-ray of his right shoulder was performed. The x-ray indicated a high-riding humeral head, and magnetic resonance imaging (MRI) of the right shoulder was recommended due to possible rotator cuff tendinopathy.

The MRI demonstrated a full-thickness tear of the distal supraspinatus tendon along with “metastatic lesions” (FIGURE). As a result, a bone scan was obtained and revealed activity in the proximal right humerus; however,

it was nonconclusive for osteoblastic metastasis. A positron emission tomography (PET) scan was ordered, which revealed findings suggestive of bony metastasis in the proximal left tibia, distal shaft of the right tibia, and the right and left humeral heads. The patient was then scheduled for a bone biopsy; a chest, abdomen, and pelvis computed tomography (CT) scan with IV and oral contrast was also ordered.

FIGURE

MRI reveals lesions on right shoulder

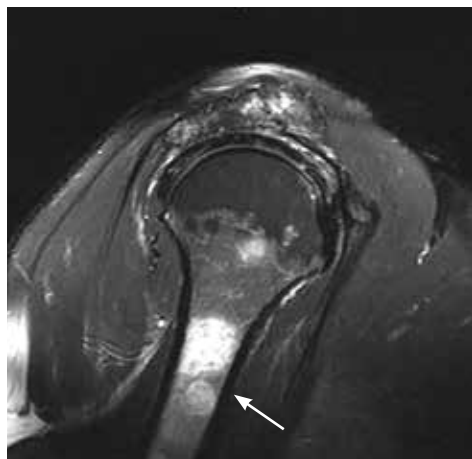


IMAGE COURTESY OF HANY ERAQI, MD

THE DIAGNOSIS

A bone biopsy of the left tibia indicated prominent non-necrotizing granulomatous inflammation and stains were negative for microorganisms. The CT scan demonstrated peribronchial vascular reticulonodular

➤ Up to 50% of patients with bone lesions are symptomatic and may require treatment. Treatment is reserved for these symptomatic patients, with the goal of pain reduction.

opacities in the upper lung zones compatible with sarcoidosis; no metastatic lesions were identified. Laboratory studies were obtained and demonstrated an elevated angiotensin-converting enzyme (ACE) level consistent with sarcoidosis. The cumulative test results pointed to a diagnosis of osseous sarcoidosis.

DISCUSSION

Osseous sarcoidosis is a rare manifestation of larger systemic disease. It is estimated that bony lesions occur in only 3% to 13% of patients with sarcoidosis.¹ Bone involvement is most common in African Americans and occurs primarily in the hands and feet.¹⁻³

Osseous lesions are comprised of noncaseating granulomatous inflammation.^{4,5} They are often asymptomatic but can be painful and associated with overlying skin disease and soft-tissue swelling.^{1,4} Although it's not typical, patients may present with symptoms such as pain, stiffness, or fractures. On CT imaging and MRI (as in this case), osseous lesions can be confused with metastatic bone disease, and biopsy may be required for diagnosis.⁴

■ **There are multiple patterns of bone involvement** in osseous sarcoidosis, ranging from large cystic lesions that can lead to stress fractures to "tunnels" or "lace-like" reticulated patterns found in the bones of the hands and feet.^{2,3,5,6} Long bone involvement is typically limited to the proximal and distal thirds of the bone.⁶ Sarcoidosis is also known to involve the axial skeleton, and less commonly, the cranial vault.⁶ Although multiple variations may manifest over time, skin changes usually precede bone lesions^{3,6}; however, that was not the case with this patient.

Treatment entails pain management

Up to 50% of patients with bone lesions are symptomatic and may require treatment.^{3,5} Treatment is reserved for these symptomatic patients, with the goal of pain reduction.^{2,3,7}

■ **Low- to moderate-dose corticosteroids** have been shown to relieve soft-tissue swelling and decrease pain.^{2,3,7} A prolonged

course of steroids is not recommended, due to the risk of osteoporosis and fractures, and does not normalize bone structure.^{3,7}

■ **Other options.** NSAIDs, such as colchicine and indomethacin, have also been found to be effective in pain management.⁷ Treatments such as methotrexate and hydroxychloroquine may be considered for those cases that are refractory to steroids.²

■ **Given the extent of our patient's disease,** he was referred to multiple specialists to rule out further organ involvement. He was found to have neurosarcoidosis on brain imaging and was subsequently treated with prednisone 10 mg/d. The patient is being routinely monitored for active disease at various intervals or as symptoms arise.

THE TAKEAWAY

Consideration for systemic diseases (eg, sarcoidosis) should be given to patients presenting with musculoskeletal complaints without a significant history of trauma or injury. In those with risk factors associated with a higher incidence of sarcoidosis, such as age and race, a work-up should include imaging and biopsy. Treatment (eg, corticosteroids, NSAIDs) is provided to those patients who are symptomatic, with the goal of symptom relief.³

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