Case of the Month

Marie B. Wiles, MHS, PA-C

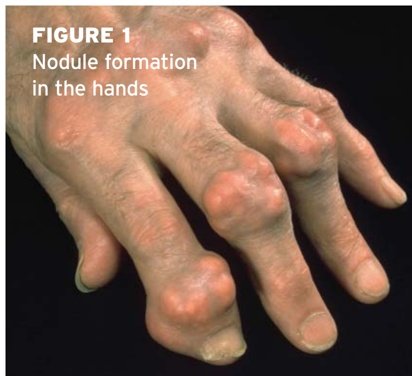

FIGURE 1 Nodule formation in the hands

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CASE

The patient is a 47-year-old white male who presented to our clinic for medication refills. His medical history was significant for type 2 diabetes, hypertension, hyperlipidemia, and chronic back and joint pain. His medications included rosuvastatin (Crestor), valsartan (Diovan), folic acid, metformin, pentoxifylline (Trental), amitriptyline, carbamazepine (Tegretol), and methotrexate.

The patient first noticed joint nodule formations in 1999. Over the past 9 years, his condition worsened and he developed associated joint pain and swelling. He was initially treated with ibuprofen. This medication was changed to methotrexate 3 years before this visit, but his symptoms had not improved. No radiographs or laboratory test results were available for review, and the patient denied a history of joint fluid aspiration. His pertinent family history was negative.

Physical examination The patient appeared well and was in no acute distress. His vital signs were normal. Musculoskeletal examination revealed numerous variably sized nodules on the hands, forearms, elbows, left midfoot, pinnae of the ears, and prepatellar areas. Significant joint deformity secondary to nodule formation was noted on the hands. The patient had no ulnar deviation, boutonniere, or swan-neck deformity. Range of motion in the wrists, elbows, ankles, and knees was limited bilaterally. Muscle strength was normal with the exception of reduced hand grip strength. Shoulder and hip joints were normal.

Rheumatoid factor (RF) test was negative. Blood tests did not show anemia or an elevated WBC count. Radiographs were significant for joint space narrowing consistent with arthritis in the radiocarpal joints. Soft tissue swelling and erosive changes were noted in the metacarpophalangeal joints. Joint fluid was aspirated from the left olecranon bursa nodule and sent for evaluation.

WHAT IS YOUR DIAGNOSIS?

- *Rheumatoid arthritis*
- *Gout*
- *Osteoarthritis*
- *Infectious arthritis*

DISCUSSION

Crystal examination of the joint fluid revealed negatively birefringent monosodium urate crystals consistent with a diagnosis of tophaceous gout. Joint fluid evaluation is the most useful laboratory test for making this diagnosis.[1] Both rheumatoid arthritis (RA) and gout are inflammatory diseases that may show elevated leukocyte levels in joint fluid.[1,2] Uric acid crystals are seen on joint fluid examination in approximately 90% to 95% of cases of gout; a finding that confirms the diagnosis.[1]

This patient's negative RF further substantiated the diagnosis of gout. A positive RF is seen in 80% to 90% of RA cases, with seropositive patients presenting with more severe disease.[3] Although uric acid levels may be elevated in gout, these tests are not sensitive or specific enough to make the diagnosis.[1,2] The ESR may be elevated in both gout and RA.[1-3]

In both diseases, radiographs can be normal or may show inflammatory and erosive joint changes.[3] Erosive lesions with an overhanging rim of bone, termed *rate bites*, are highly suggestive of gout.[1] In contrast, erosions associated with RA occur at the margins of bone and cartilage.[1]

Gout may manifest similarly to nodular RA when multiple joints are involved and tophi, which resemble rheumatoid nodules, are present.[2] Joint pain and swelling are manifestations of both diseases, usually affecting the small joints of the extremities. Unlike RA, gout spares the hip and shoulder joints.[1] RA nodules are often seen at the elbow joints, but they may affect any involved joint, as well as the tendons. Gouty tophi are typically found on the external ears, hands, feet, olecranon, and prepatellar bursa (see Figure 1).[1]

Treatment Methotrexate was discontinued and the patient was started on colchicine, 0.6 mg twice a day. Additionally, allopurinol, 300 mg daily, was added for gout prophylaxis. The patient was referred to a rheumatologist for medical management of this gout. On follow-up, his joint pain was improved with a gradual reduction noted in the gouty tophi. Fortunately, he had experienced no complications from the 3 years of methotrexate treatment.

Comment RA and gout may manifest similarly, as was seen in this case; however, physical examination, laboratory, and radiographic findings were more consistent with a diagnosis of gout. Joint fluid evaluation should be performed to confirm the diagnosis. A misdiagnosis can be devastating. RA is often a disabling disease with a variable prognosis. Drugs used to treat RA, such as methotrexate, can have serious toxic side effects. JAAPA

Marie Wiles works in a private internal medicine practice in South Hill, Virginia. She has indicated no relationships to disclose relating to the content of this article.

Erich Fogg, PA-C, MMSc, department editor

REFERENCES

1. Andreoli TE, Carpenter CJ, Griggs R, Loscalzo J, eds. *Cecil Essentials of Medicine*. 6th ed. Philadelphia, PA: Saunders; 2004.
2. Tierney LM Jr, McPhee SJ, Papadakis MA, eds. *Current Medical Diagnosis and Treatment*. 42nd ed. New York, NY: Appleton & Lange; 2003.
3. *Gout and rheumatoid arthritis*. Epocrates [Mobile device software]. Version 1.0. San Mateo, CA: Epocrates Inc.; 2003.