Pseudoseptic Arthritis with Low Synovial Fluid Glucose in Familial Mediterranean Fever

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CASE DESCRIPTION

PATIENT DESCRIPTION

CASE 1
A 49 year old male was admitted to the orthopedic surgery department with monoarthritis of the right knee accompanied by fever and chills. He had been previously diagnosed with FMF along with his two siblings and was treated with 2 mg colchicine daily for over three decades. His disease had manifested as recurrent short attacks of knee or ankle monoarthritis once every 4-6 months, sometimes accompanied by erysipelas and/or eloid erythema, which was treated by non-steroidal anti-inflammatory drugs (NSAIDs) or local glucocorticoid injection during attacks. Otherwise, his past medical history was unremarkable. His last arthritis attack started 2 days before the current admission and presented with fever of 38.7°C and sharp right knee pain and swelling unresponsive to NSAIDs. On admission, the patient’s right knee was warm and extremely painful. It contained a large amount of effusion. Blood tests demonstrated leukocytosis of 15,000/mm3, CRP levels of 90 mg/L, and a glucose reading of 37 mg/dl. The patient underwent arthroscopic surgery of the right knee and kept receiving wide spectrum antibiotics. Meanwhile, synovial fluid cultures and polymerase chain reaction (PCR) tests for bacterial and mycobacterial infections came back negative. Pseudoseptic arthritis related to FMF was suspected and oral prednisone at a dosage of 40 mg daily was added. There was immediate improvement in the patient’s clinical state and steroids were tapered. Four weeks later the patient developed monoarthritis of the right ankle, accompanied with fever of 38.7°C and chills. Blood tests demonstrated leukocytosis of 15,000/mm3, CRP levels of 90 mg/L, and a glucose reading of 111 mg/dl. Synovial fluid analysis showed 49,000/mm3 WBCs, of which 97% were neutrophils and glucose levels of 40 mg/dl. Again, broad spectrum intravenous antibiotics were instituted, but with no improvement. Blood and synovial fluid cultures and PCR results were negative. The addition of systemic glucocorticoids again led to rapid and full resolution of the ankle arthritis. These episodes of pseudoseptic arthritis were believed to be a manifestation of uncontrolled FMF, and the patient was prescribed canakinumab. No episodes of arthritis have been seen for more than 1 year.

PATIENT DESCRIPTION

CASE 2
A 29 year old female patient with known FMF, homozygous for M694V, presented with swelling of her right knee, abdominal pain and fever of 39°C. Her past medi-
Classically, the arthritis of FMF is accompanied by other manifestations such as fever, abdominal pain and/or serositis. However, about 5% of FMF arthritis presents as mono- or oligoarthritis with no other FMF-related symptoms. This presentation is referred to as protracted arthritis [4]. The synovial fluid in FMF arthritis is sterile, ranging from cloudy to purulent, and contains a large percentage of neutrophils. Uthman and colleagues [5] have suggested that fever and monoarthritis in FMF may be confused with infection. To the best of our knowledge, low synovial glucose levels in FMF arthritis have not been previously reported. The mechanisms of diminished intra-articular glucose content in the course of acute but aseptic arthritis have not been elaborated, but in light of existing reports of low synovial glucose levels in pseudoseptic arthritis in patients in other rheumatic diseases, a common pathway to pseudoseptic arthritis with low synovial glucose: identification of crystals by gram stain. Am J Med Sci 1985; 289:68-9.


CONCLUSIONS
In summary, two patients with FMF pseudoseptic arthritis with low synovial fluid glucose are reported. Knowledge of this phenomenon can be useful in clinical practice and may prevent unnecessary invasive treatment for presumed joint infection in some patients.

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References