

Leukemic Infiltration of the Knee

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An otherwise healthy 68-year-old man was seen with a 10 day history of pain and swelling of the left knee. He had no history of trauma. Physical examination revealed an erythematous, painful, swollen left knee. Hematological studies showed a hemoglobin of 83 g/l, leukocytes $149,000 \times 10^9/l$ (51.3% neutrophils, 4.7% lymphocytes, 31.2% monocytes, 10.70% eosinophils), platelets 198,000, and a sedimentation rate of 103 mm/h. Blood chemistry was normal. Antinuclear antibodies, rheumatoid factor, hepatitis A, B, C, Epstein-Barr virus, and cytomegalovirus were negative. Posteroanterior radiographs of the knees showed osteoarthritic changes. Synovial fluid analysis revealed a high white blood cell count (80% monocytes, 13% segmented neutrophil granulocytes, 2% metamyelocytes, and 5% lymphocytes) compatible with leukemic infiltration, no crystals on polarizing microscopy, and a negative Gram stain. No immunochemical stain was done. Coronal magnetic resonance imaging (MRI) of the left knee showed diffuse infiltration of bone marrow in femur and tibia (Figure 1). A bone marrow biopsy confirmed the diagnosis of chronic myelomonocytic leukemia (CMML) as part of a myelodysplastic syndrome. He was given hydroxyurea, cytarabine, and prednisolone, with prompt remission of both

the arthritis and hematological disorder. Together with leukocytosis 2 and 3 months later ($150,000 \times 10^9$ and $223,000 \times 10^9$, respectively), he had episodes of arthritis of the left knee and right shoulder. All resolved with new courses of chemotherapy. He died of sepsis 4 months after diagnosis.

Leukemic arthritis^{1,2}, defined as joint pain and swelling associated with peripheral blood or bone marrow leukemia, is a rare complication. Ours is the second published case of CMML arthritis in which no other cause was found³. This condition must be considered in the differential diagnosis of an arthritis of unknown origin in a patient with a leukemoid reaction.

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Figure 1. Coronal MRI of the left knee in a patient with chronic myelomonocytic leukemia, showing diffuse infiltration of bone marrow in femur and tibia. Multiple coalescent hypointense nodules in T1 sequence (A) and hyperintense in fat-suppressed proton-density sequence (B) localized in metaphysis and epiphysis of femur and tibia.