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.

REFERENCES

- Luzar MJ, Sharma HM. Leukemia and arthritis: including reports on light, immunofluorescent and electron microscopy of the synovium. J Rheumatol 1983;10:132-5.
- Usalan C, Ozarslan E, Zengin Normal, Buyukayk Y, Gullu YH. Acute lymphoblastic leukaemia presenting with arthritis in an adult patient. Postgrad Med J 1999;75:425-7.
- Douer D, Weinberger A, Djaldetti M, Pinkhas J, De Vries J. Successful treatment of severe bone pain and acute arthritis in chronic myelomonocytic leukaemia by cytosine arabinoside. Ann Rheum Dis 1977;36:192-3.

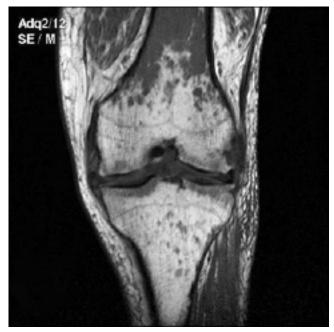




Figure 1. Coronal MRI of the left knee in a patient with chronic myelomonocytic leukemia, showing diffuse infiltration of bone marrow in femur and tibia. Multiple coalescent hypointense nodules in T1 sequence (A) and hyperintense in fat-suppressed proton-density sequence (B) localized in metaphysis and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

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