

Complete Femoral Osteonecrosis in the Setting of Myelodysplastic Syndrome

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Abstract: A 76-year-old man was diagnosed with a hematological neoplasm combining myelodysplastic and myeloproliferative characteristics back in July 2021. Five months after the diagnosis, his condition got more severe when the blasts rose up to 14%, so he was started on hypomethylating agent-based therapy. A few weeks later, the patient was hospitalized after developing fever and a pain in the right thigh. To exclude any source of occult infection, an ¹⁸F-FDG PET/CT was performed. FDG PET/CT showed a complete lack of metabolism in the right femur. An MRI and a biopsy confirmed the suspected diagnosis of osteonecrosis.

Key Words: ¹⁸F-FDG, myelodysplastic syndrome, myeloproliferative neoplasm, osteonecrosis

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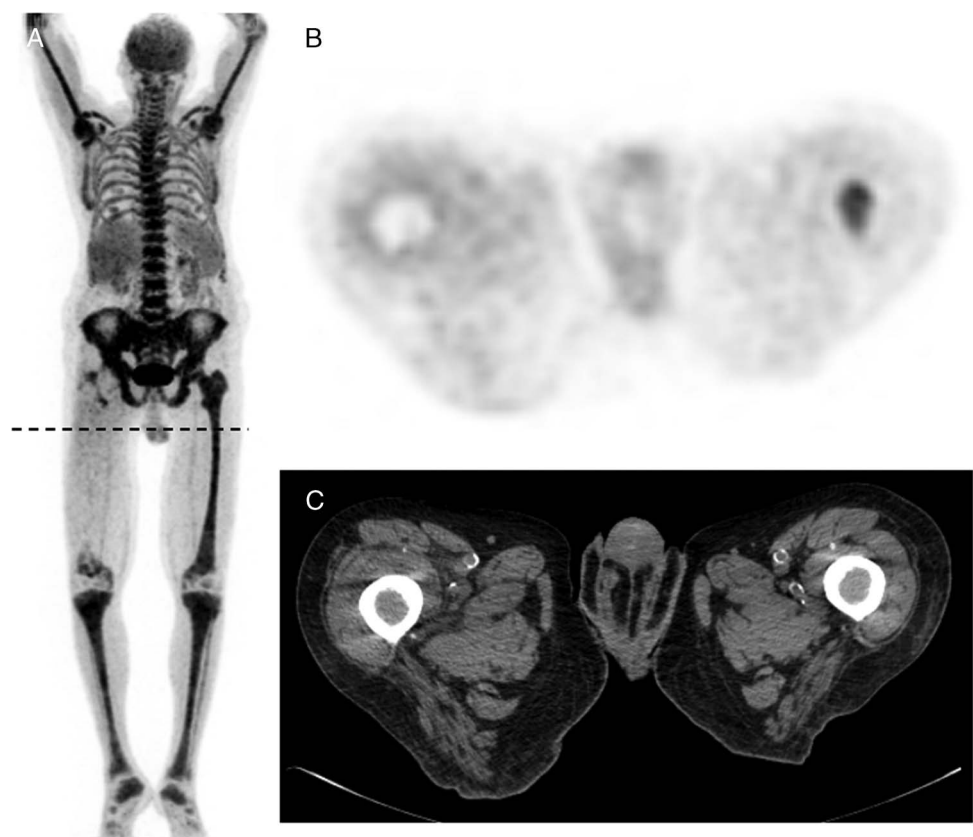


FIGURE 1. The maximal intensity projection image (A) and the corresponding PET (B) and CT (C) axial slices show absence of FDG uptake nearly in the entire femur.

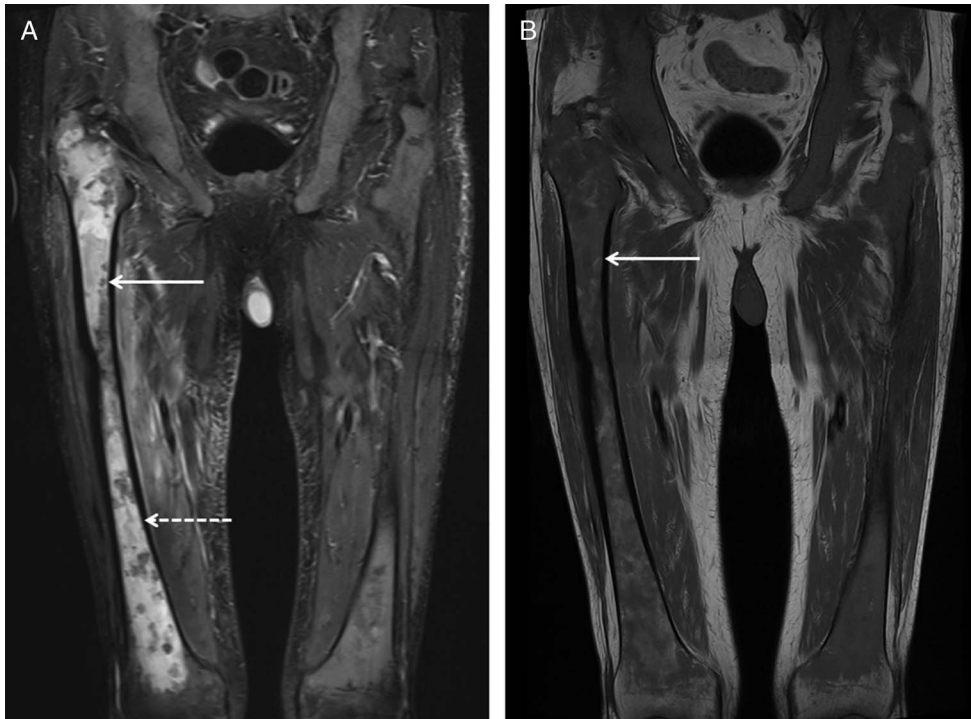


FIGURE 2. MRI T2-weighted images (A) showed medullary replacement in high signal (dotted arrow) with low-signal patches (plain arrow). On the T1-weighted images (B), those patches were surrounded by high-signal borders (arrow). Those were stigmata of either osteitis or osteonecrosis. Femoral biopsy confirmed the diagnosis of osteonecrosis. In the end, unfortunately, the patient died not long after. After talking with the hematologist, it seemed that the most likely cause of osteonecrosis was the rise of blasts in combination with a possible preexisting microvasculopathy that happened to be worse in the right femur.^{1,2} After exhaustive literature review, this seemed to be the first reported case of complete femoral osteonecrosis visualized on FDG PET/CT,^{3,4} moreover, in a context of myelodysplastic/myeloproliferative characteristics.^{5–8} All other cases were limited to the head of the femur specifically, and none of them concerned malignant hemopathies.