Brown Tumors: Severe Osteitis Fibrosa Cystica

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A 21-year-old woman was referred to the endocrinology clinic for evaluation of hypercalcemia. She presented with a 2-year history of progressive asthenia, adynamia, fatigue, and generalized bone pain. She belonged to a rural community where she was initially diagnosed with rheumatoid arthritis and treated with nonsteroidal anti-inflammatory drugs, azathioprine, and methotrexate. The symptoms progressed, and 6 months before the consultation she was confined to bed. During the previous year, she had hip, distal femur, and proximal humerus pathologic fractures. Nevertheless, she refused to seek any formal medical attention and agreed to be evaluated only when the pain became unbearable. On physical examination she had normal vital signs and generalized bone pain with deformation on the fracture sites. Her corrected calcium level was 11.7 mg/dL, phosphorus 2.4 mg/dL, alkaline phosphatase 2032 IU/L, parathyroid hormone 1670 pg/mL, 25-hydroxyvitamin D 11 ng/mL, and urinary calcium 325 mg/24 h. Radiographs showed generalized osteolitic lesions with characteristic subperiostial resorption of phalanges along with multiple cysts and tumors in the proximal humerus, femur, and ankles (Figures 1 and 2; Supplemental Figure 1, available online at http://www.mayoclinicproceedings.org). A computed tomographic scan showed multiple lytic lesions in the pelvis and lumbar vertebrae consistent with brown tumors (Supplemental Figure 2, available online at http://www.mayoclinicproceedings.org). Histopathology revealed fibrotic tissue, multinucleated osteoclastic giant cells, and hemosiderin deposition, consistent with brown tumors. Nephrolithiasis was documented, and technetium-99m sestamibi localized a right parathyroid adenoma. She had a bilateral parathyroid exploration and subsequently developed hungry-bone syndrome, which was successfully managed with intravenous or oral calcium and calcitriol. At 2-month follow-up, her bone pain disappeared and bone turnover markers were within the normal range.

FIGURE 1. Generalized osteolitic lesions, subperiostial resorption, and multiple cysts of the metacarpals and phalanges.

FIGURE 2. Left pathologic fracture of the femur diaphysis with cortical bone resorption, cysts, and brown tumors.

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SUPPLEMENTAL ONLINE MATERIAL

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