Hairy Cell Leukemia and Bone Pain

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70-year-old woman named Mrs. P was diagnosed with hairy cell leukemia in 2001. She was treated with chemotherapy (cladribine [Leustatin[®]]) at the time of presentation and again at relapse in 2005 and 2009. With each relapse, her leukemia responded to chemotherapy and she achieved remission. Three years into her last remission, Mrs. P presented to a follow-up appointment with complaints of hip and back pain. She had been in a motor vehicle accident three months earlier and was experiencing mild musculoskeletal pain. She was seeing her general practitioner and a chiropractor on a regular basis and taking overthe-counter analgesia for pain. No further intervention was deemed necessary at the time.

Three months later, with her disease still in remission, Mrs. P experienced severe back pain with tenderness on vertebral palpation. She had limited mobility and had lost 6 kg since last follow-up. She was not eating well because she found meal preparation painful and had lost interest in her everyday activities. Her blood workup reported a normal white blood count, mild neutropenia and hemoglobin, and platelets slightly less than normal. To better assess her pain, plain film x-rays were performed which showed subtle displaced rib fractures in keeping with her reported trauma. She was started on calcium and vitamin D while awaiting additional investigation. Bone mineral density showed osteoporosis and she was at high risk for fracture based on the following risk factors: female gender, advanced age, positive family history of osteoporosis and fractures, underlying hematologic malignancy, and having been a previous smoker.

Despite being started on bisphosphonate therapy to strengthen her bones, little improvement was noted in her symptoms. A bone scan showed multiple areas of lucency throughout the pelvis and bilateral proximal femur (right greater than left) in keeping with metastatic disease. Her biochemistry panel was normal, and no detectable monoclonal protein or free light chain disease was detectable. A bone marrow biopsy was negative for the presence of multiple myeloma or malignancy other than her known hairy cell leukemia, so computed tomography (CT) scans were used to rule out the presence of a second malignancy. Surprisingly, widespread abdominal lymphadenopathy was found, with the largest retroperitoneal node measuring 4.4 cm x 2.1 cm. At this point, Mrs. P was admitted to hospital in severe pain crisis. She was bedridden and experiencing severe anxiety and panic attacks because of her physical deterioration. A consult for psychiatry was initiated. CT scans revealed multiple lytic lesions in the pelvis and proximal aspect of each femur and throughout the lumbar/thoracic spine and ribs, consistent with widespread