Lymphoma of Bone

Lymphoma of bone accounts for approximately seven per cent of all primary malignant tumors of bone and can be divided roughly into two clinical groups – Hodgkin's lymphoma of bone and non-Hodgkin's lymphoma of bone. Hodgkin's lymphoma of bone carries a much better prognosis for survival. It tends to be localized and presents with a radiographic appearance that includes a dense, sclerotic response. The non-Hodgkin's lymphomas can be divided into two categories. The systemic form, the most common form with generalized involvement of the entire lymphatic system including soft tissue and bone, carries a poor prognosis. The less common form that is found in bone and does not have systemic manifestations carries a better prognosis for survival. To meet the strict criteria for a primary lymphoma of bone, disease must be contained within the skeletal system for at least six months before becoming disseminated to other lymphatic organs such as lymph nodes and spleen, at which time the prognosis for survival becomes much worse. The age group for primary lymphoma of bone is between 25 and 50 years. The most common bones involved are the spine and pelvis in 50 per cent of the cases. In the extremities, the most common location is the femur followed next by the humerus and tibia with multiple skeletal sites involved in approximately 25 per cent of cases.

Radiographically, the primary lymphoma takes on a permeative lytic appearance in cortical bone in a diaphyseal-metaphyseal location, but can also involve epiphyseal bone as well. Because of the permeative nature of the bone destruction, pathological fractures are common, similar to the situation with Ewing's sarcoma. In both primary lymphoma and Ewing's sarcoma, large soft tissue masses can also be found. With H&E staining, the histological appearance of lymphoma and Ewing's sarcoma can be quite similar but with specific immunohistochemical staining techniques, B cell and T cell subtypes of lymphoma are identified and clearly separated from Ewing's sarcoma. As with Ewing's sarcoma, the advent of chemotherapy dramatically improved the prognosis for survival that, for a solitary primary lymphoma of bone, is like Ewing's sarcoma with a 70 per cent chance of survival at five years. However, with more disseminated involvement of multiple bones or other lymphatic organs, the prognosis drops dramatically to 10-25 per cent. As with Ewing's sarcoma, the lymphoma of bone is quite sensitive to external beam radiation therapy. However, the complications (including pathological fracture) are a problem and the orthopaedic oncologist will attempt a wide local resection of the tumor if possible or, in cases with more extensive involvement, an intralesional approach with a long stem cemented prosthesis with adjuvant

methyl methacrylate may be indicated to avoid pathological fracture. Where there is systemic involvement with extensive metastatic disease, patients can be considered for bone marrow transplantation. The same holds true of Ewing's sarcoma.