LYMPHOMA OF BONE

Dr. Michelle Atkinson

**DEFINITION:** A neoplasm of the lymphoreticular system (lymph nodes, spleen, thymus and mucosa-association lymphoid tissue MALT mainly gut associated GALT)

Malignant lymphoma of bone is morphologically similar to the lymph node counterparts ie NonHodgkins or Hodgkins (rare). When malignant lymphoma is responsible for a bone lesion it may be:

1. A primary osseous lesion with no distant disease.
2. Multiple skeletal sites but no involvement of any soft tissue.
3. A bone lesion with involvement of other soft tissue sites eg spleen, liver, lymph nodes.

Primary osseous lymphoma is rare - 3% of bone tumours. In clinical cases of lymphoma, involvement of the bone is unusual but at autopsy 20% show bone involvement.

**EPIDEMIOLOGY:** Male: Female, 4:3, both in primary and total groups. Can occur at any age but is rare in the very young. 20% are in the sixth decade of life.

**LOCATION:** Most involve bone containing haematopoietic tissue most commonly the femur then the ilium. It is very rare to involve the small bones of the hands and feet except with generalised disease. The distribution of primary lesions is similar to that of disseminated lymphoma.

**PRESENTATION:** Local pain in, classically, a patient in good general health. Pain is a constant feature often present several months, occasionally years. Swelling, tenderness and warmth in local area. No fever, no weight loss. Neurologic symptoms if tumour in spinal column. Enlarged regional lymph nodes, distant lymph nodes, spleen, liver and other bony sites should be examined.

**XRAY:** Findings vary so much that none are considered characteristic. *Extensive* involving 25-50% of affected bone, sometimes entire bone. *Destructive* lesion: radiolucent, mottled, patchy, moth-eaten and sometimes the outline of the bone is completely lost. *Infiltrative*, permeative, poorly defined interface with normal bone. 50% have a mixture with small areas of *sclerosis*. Nearly all destroy cortical bone and 25% thicken the cortex. Often large, obvious *soft-tissue* extension. Periosteal new bone formation uncommon. Sclerosis may precede diagnosis by several years and in flat bones may resemble Paget's. When confined to marrow cavity, plain x-ray negative but bone scan and MRI positive. A classic presentation of (rear) Hodgkins disease in bone is the solitary *ivory* vertebra. 25% present with pathologic *fracture*.

**PATHOLOGY:** Greyish-white fish-flesh tissue infiltrating bone. The main mass and extraosseous extension (nearly always present) are in the metaphyseal region. Residual trabeculae lead to a firm gritty consistency. Soft tissue mass friable. Margins in bone and soft tissue are indistinct.

**HISTOLOGY:** *Diffuse* rather than nodular. *Infiltrative* leaving normal structures behind. Grows between bony trabeculae and permeates marrow fat. *Mixed size and shape* of tumour cell. Crush artefact is more common in lymphoma than in other small cell malignancies particularly Ewings. Reactive fibrosis. Reed-Sternberg cell may be present. Small round cell tumour.
DDx. Metastatic carcinoma, osteosarcoma, Ewings tumour, EG, chronic osteomyelitis.

**DIAGNOSIS**: Biopsy, peripheral blood film, skeletal survey, bone scan, bone marrow examination. CT scan of abdo + chest to assess lymph node involvement.

**TREATMENT**: Radiation +/- surgical excision. Regional lymph nodes = radiation. Chemo for disseminated. ?? for solitary bone involvement.

**PROGNOSIS**: The best prognosis of all primary bone tumours. 40-50% = 5 years survival. (22% for disseminated disease) multiple bone involvement 42% 5 years. Histologic and immunohistochemical types no prognostic significance. Those in mandible / maxilla very good prognosis +/- cure.

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