

Bone Cancer

Ewing's Sarcoma

Definition

This is a small, round cell sarcoma of bone. It may arise in any bone, most commonly in the diaphysis (shaft of the bone). Also called a Primitive Neuroectodermal Tumour of Bone or Ewing's sarcoma family of tumours.

Etiology

Unknown

Signs and Symptoms

Pain, swelling, fever

Diagnostic Evaluation

- X-ray of involved site
- MR & CT scan of involved site
- Needle or open biopsy of site after MR & CT scan.
- Chromosomal analysis of the biopsy specimen should be undertaken
- Bone marrow aspirate and biopsy
- CT chest
- Bone scan

Staging

Localized or metastatic

Treatment

1. Surgery:
Surgical resection may be used for the primary lesion if resection can be achieved without major functional deficit, or in young children when radiotherapy would result in major growth impairment.
2. Radiotherapy:
Ewing's sarcoma is radiosensitive so irradiation of the primary tumour (dose up to 5580 cGy) is often used to achieve local control.
3. Chemotherapy:
The use of adjuvant chemotherapy has resulted in a major improvement in survival. Commonly used drugs: vincristine, cyclophosphamide, doxorubicin, dactinomycin, etoposide and ifosfamide

Prognosis

Outcome depends on site and size of the primary, age of the patient, [LDH] and most importantly the presence or absence of metastases.

Localized tumours - 60-75% are cured.

Bone Cancer

Osteogenic Sarcoma

Definition

This is a malignant osteoid producing tumour which most often occurs during the adolescent growth spurt. It arises most commonly in the metaphysis (ends) of the long bones.

Etiology

Unknown

Signs and Symptoms

Pain, swelling, pathological fracture There is often a history of preceding mild trauma which is usually blamed for symptoms initially

Diagnostic Evaluation

- X-ray of involved site
- MR & CT scan of site
- Chest x-ray, chest CT scan, bone scan
- Needle or open biopsy of site after MR & CT scan

Staging

Localized or metastatic

Treatment

- 1 Surgery:
Resection of the tumour is essential. This may be achieved by amputation or limb salvage surgery.
2. Chemotherapy:
 - ~ Use of chemotherapy has significantly improved survival
 - ~ Commonly used drugs: high dose methotrexate, cisplatin, doxorubicin
 - a. neoadjuvant (prior to tumour resection) to shrink primary tumour and treat micro metastases
 - b. adjuvant post operatively to treatment micro metastases and residual disease
3. Radiotherapy:
Osteogenic sarcoma is not radiosensitive so radiotherapy is not used

Prognosis

For non-metastatic disease 55-80% of children are cured depending on site and size of primary