Pathology Summary

Benign Bone Tumours

Can be incidental findings or locally very aggressive

1. Osteochondroma
    a. Can be associated with Hereditary Multiple Osteochondromatosis
    b. Portion of the physis 'breaks' away and grows off the side of the bone
    c. Cauliflower-like appearance
    d. Histology: cellular cartilage
    e. Malignant transformation can occur – growth in adulthood requires investigation!
2. Giant Cell Tumour
    a. Most common ages 20-40 years
    b. 1% exhibit metastatic behaviour
    c. 20% of all benign bone tumours
    d. Peri-articular location
    e. Mainstay of treatment is surgery (some role for anti-osteoclastic agents)
3. Aneurysmal Bone Cyst
    a. Similar pattern to GCT, but is a distinct entity
    b. Fluid-fluid levels on MRI scans
    c. Mainstay of treatment is surgical, other modalities such as embolization are also used

Malignant Bone Tumours

Require early referral to a subspecialist multidisciplinary centre

1. Osteosarcoma
    a. Most common primary bone sarcoma
    b. Peak in young patients (10-25 years) and older patients (30% are >40 years)
    c. Histologic hallmark is malignant cells producing abnormal osteoid
    d. Metastasize hematogenously, predominantly to lungs, bone
    e. Mainstay of treatment is chemotherapy and surgery (cure rates reported between 60-75%)
2. Chondrosarcoma
    a. Can be primary or arise secondarily from lesions such as enchondromas or osteochondromas
    b. Wide variation in metastatic potential
    c. Can occur in any bone
    d. Mainstay of treatment is surgical
3. Ewing Family Tumour
    a. Characterized by small round blue cells on histology that have specific translocations
    b. Most common ages 5-30 years
    c. Often have a large soft tissue mass associated
    d. Chemotherapy, radiotherapy and surgery all have a role in management

Benign Soft Tissue Tumours

1. Biology
    a. Grow slowly, do not metastasize
    b. Well differentiated appearance similar to normal tissue
2. Some Subtypes
    a. Lipoma
    b. Hemangioma
    c. Schwannoma
    d. Fibromatosis
    Etc …

Malignant Soft Tissue Tumours

1. Biology
    a. Appear to recapitulate different tissue types
    b. Histology shows usual features of malignancy (hypercellularity, pleomorphism, atypia and abnormal mitoses)
2. Some Subtypes
    a. Liposarcoma
        i. Several variants with differing behaviours
        ii. Often spread lymphatically as well as hematogenously
    b. Synovial Sarcoma
        i. Most common young adult soft tissue sarcoma
        ii. Misnomer – does not occur in the synovium!
        iii. Has a specific translocation
    c. Pleomorphic Undifferentiated Sarcoma
        i. “The tumour previously known as MFH”
        ii. High grade
        iii. More common in older people

Metastatic Tumours

Tumours that have spread from elsewhere to the skeleton or soft tissues
Increasing problem

a. Skeleton is the third most common site of metastasis
b. 70% of bone metastases are painful
c. Many different treatment options