

Tumor Matrix

- **Osteoblastic**
 - **Fluffy, cotton-like or cloud-like densities**
 - ♦ Osteosarcoma
- **Cartilaginous**
 - **Comma-shaped, punctate, annular, popcorn-like**
 - ♦ Enchondroma, chondrosarcoma, chondromyxoid fibroma

Tumor matrix

- Osteoblastic
- Cartilaginous
-



Osteosarcoma

Tumor matrix

- Osteoblastic
- Cartilaginous
-



Chondrosarcoma

Primary malignant tumors

- osteosarcoma
- chondrosarcoma
- fibrosarcoma
- Ewing sarcoma
- giant cell tumor
- primary lymphoma of bone
- malignant fibrous histiocytoma

Radiological feature of Primary malignant tumors

- poorly defined margin
- wide zone of transition
- the lesion destroy cortex of bone
- periosteal reaction
- soft tissue mass
- irregular margin
- Bone destruction

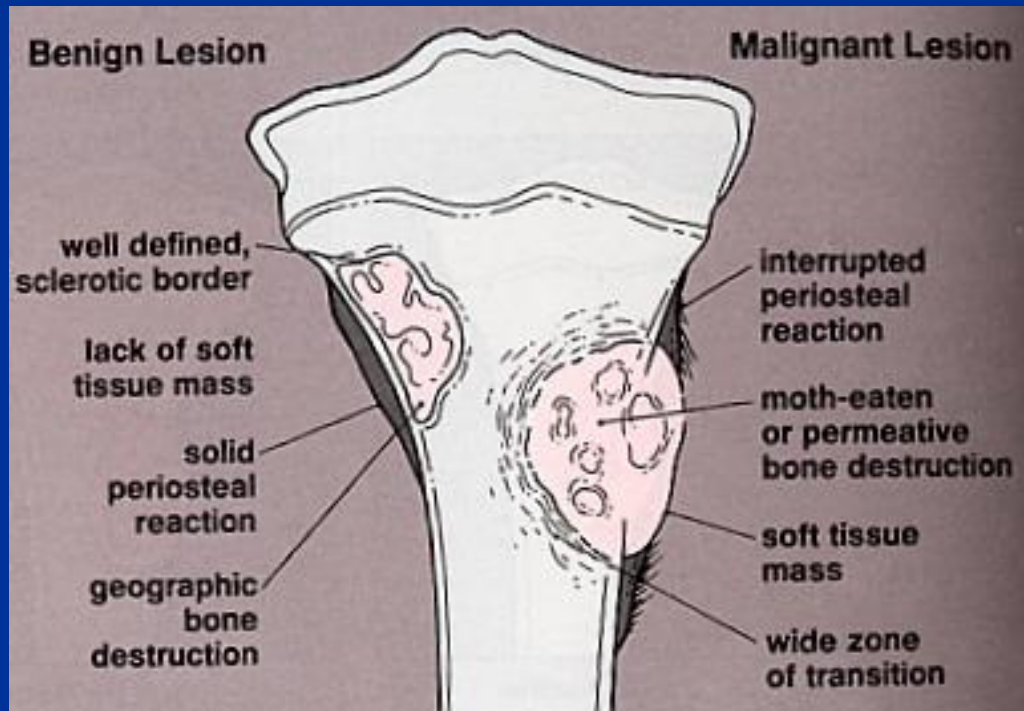
Benign tumor

- Aneurysmal bone cyst
- osteoma
- simple bone cyst
- Fibrous dysplasia
- Brown tumor
- Enchondroma
- eosinophilia granuloma
- osteoid osteoma

Radiological feature of Benign tumor

- Well defined edge
- regular margin
- expansile
- thin cortex
- no soft tissue mass
- pathological fracture
- Little or no periosteal reaction

Benign vs. Malignant



In the Transverse Plane

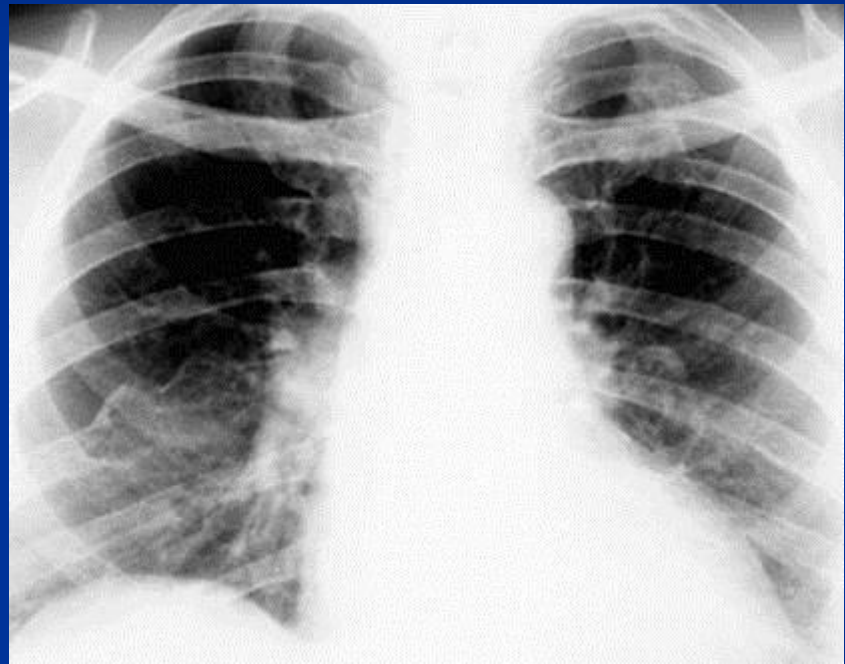
- **Central**
 - Enchondroma
- **Eccentric**
 - GCT, osteosarcoma, chondromyxoid fibroma
- **Cortical**
 - Non-ossifying fibroma, osteoid osteoma
- **Parosteal**
 - Parosteal osteosarcoma, osteochondroma

In the Longitudinal Plane

- **Epiphyseal**
 - GCT, chondroblastoma
- **Metaphyseal**
 - Osteomyelitis, osteo- and chondrosarcoma
- **Diaphyseal**
 - Round cell lesions, ABC, enchondroma

Expansile lesions

- Multiple myeloma
- Mets
- Aneurysmal bone cyst
- Fibrous dysplasia
- Brown tumor
- Enchondroma
- Lymphoma
-



Multiple Myeloma

Expansile lesions

- Multiple myeloma
- Mets
- Aneurysmal bone cyst
- Fibrous dysplasia
- Brown tumor
- Enchondroma
- Lymphoma
-



Renal Cell Carcinoma

Expansile lesions

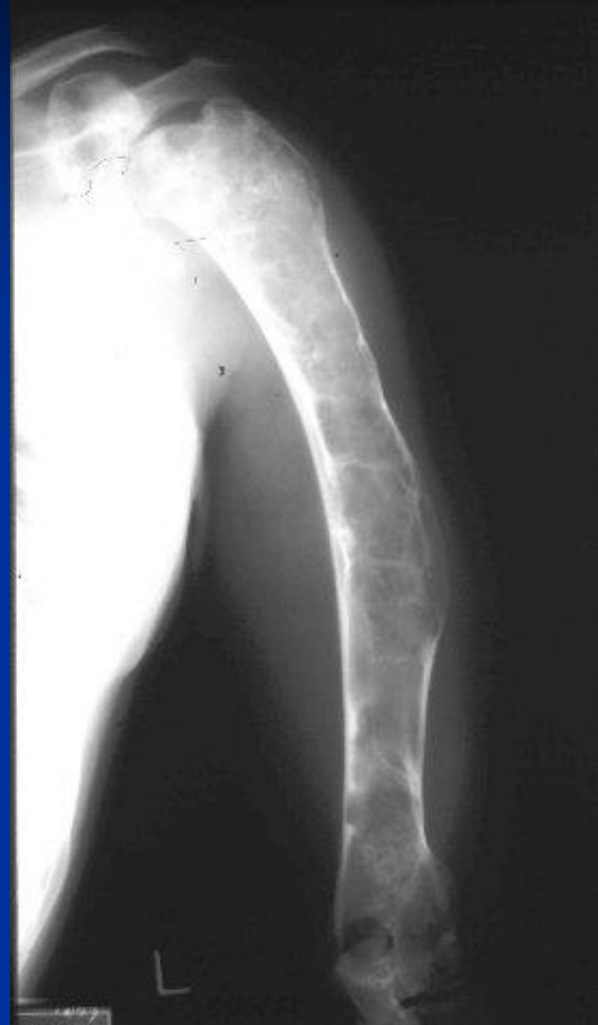
- Multiple myeloma
- Mets
- Aneurysmal bone cyst
- Fibrous dysplasia
- Brown tumor
- Enchondroma
- Lymphoma
-



Aneurysmal Bone Cyst

Expansile lesions

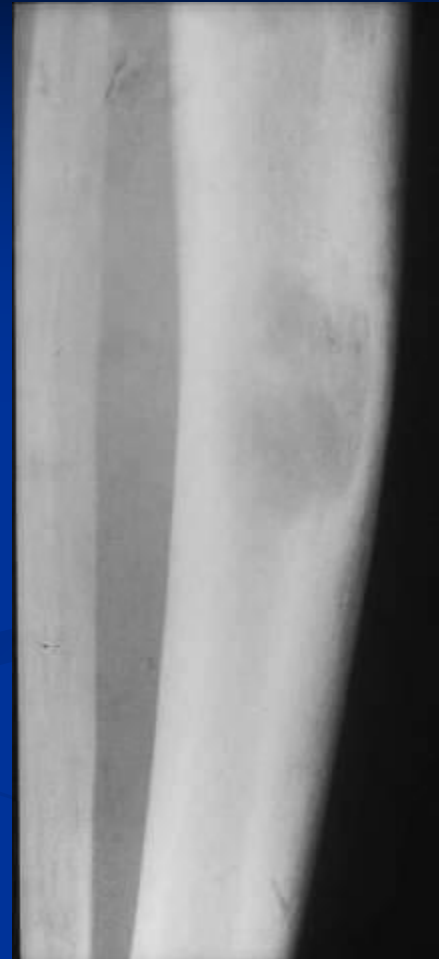
- Multiple myeloma
- Mets
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- Enchondroma
- Lymphoma
-



Fibrous Dysplasia

Expansile lesions

- Multiple myeloma
- Mets
- Aneurysmal bone cyst
- Fibrous dysplasia
- Brown tumor
- Enchondroma
- Lymphoma
-



Brown Tumor

Expansile lesions

- Multiple myeloma
- Mets
- Aneurysmal bone cyst
- Fibrous dysplasia
- Brown tumor
- Enchondroma
- Lymphoma
-



Enchondroma

Expansile lesions

- Multiple myeloma
- Mets
- Aneurysmal bone cyst
- Fibrous dysplasia
- Brown tumor
- Enchondroma
- Lymphoma
-



Lymphoma

Tumor Types

Characteristic Locations

- **Simple bone cyst**
 - Proximal humerus
- **Chondroblastoma**
 - Epiphyses
- **Giant Cell tumor**
 - Epiphyses

Characteristic locations

- Simple bone cyst
 - Proximal humerus
- Chondroblastoma
 - Epiphyses
- Giant Cell tumor
 - Epiphyses



Characteristic locations

- Simple bone cyst
 - Proximal humerus
- Chondroblastoma
 - Epiphyses
- Giant Cell tumor
 - Epiphyses



Chondroblastoma

Characteristic locations

- Simple bone cyst
 - Proximal humerus
- Chondroblastoma
 - Epiphyses
- Giant Cell tumor
 - Epiphyses



Giant Cell Tumor

Lytic Lesions in Children

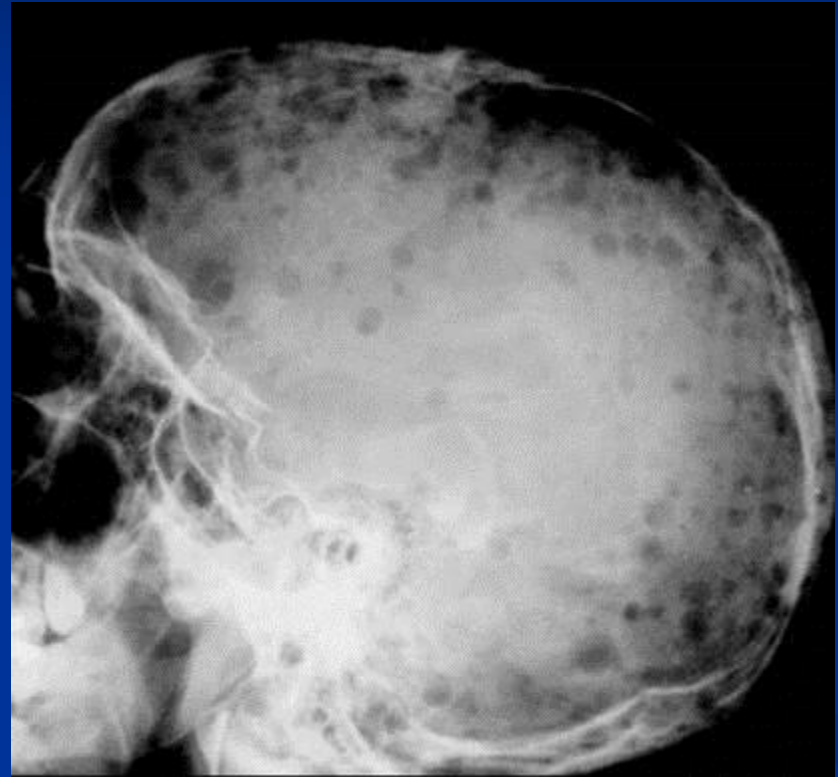
- Eosinophilic granuloma
- Neuroblastoma
- Leukemia



Eosinophilic granuloma

Lytic Lesions in Children

- Eosinophilic granuloma
- Neuroblastoma
- Leukemia



Leukemia

Sclerotic Cortical Lesions



Osteoid Osteoma



Brodie's abscess

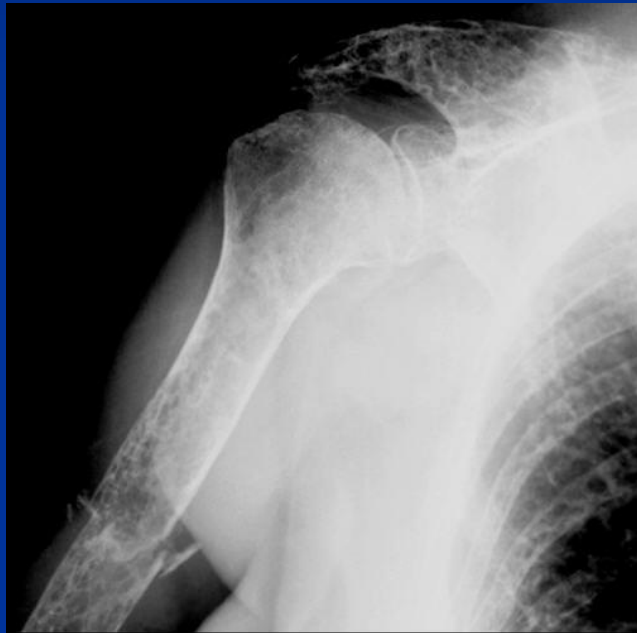


**Healing Stress
Fracture**

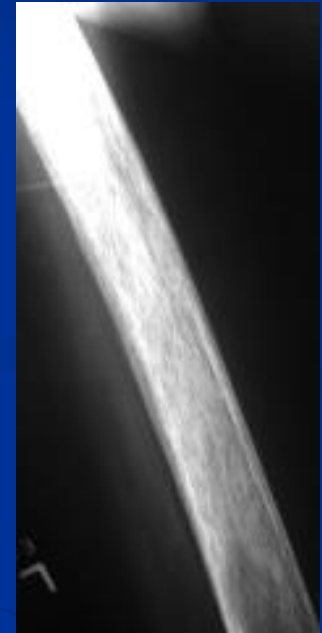
Patterns of Destruction



Geographic



Moth-eaten



Permeative

Less malignant

More malignant

Geographic Bone Destruction

- Destructive lesion with sharply defined border
- Implies a less-aggressive, more slow-growing, benign process
- Narrow transition zone

Patterns of Bone Destruction

- Geographic
- Moth-eaten
- Permeative



Non-ossifying fibroma

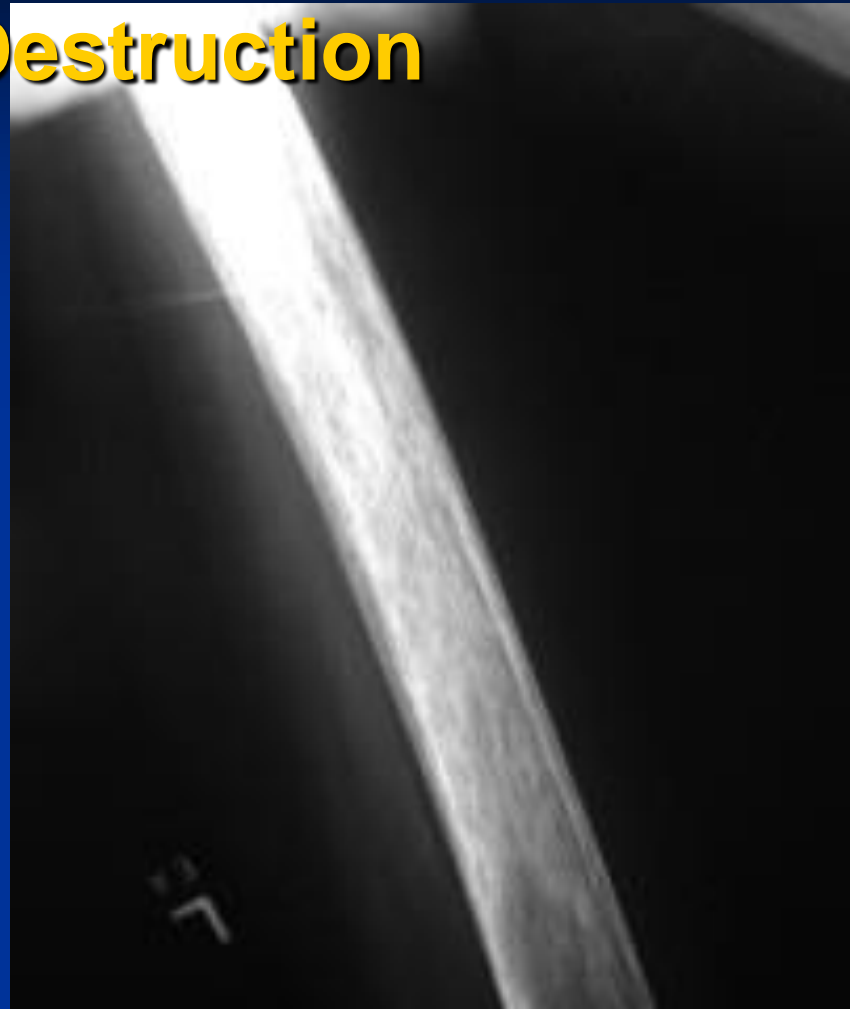
Geographic Lesions

Examples

- **Non-ossifying fibroma**
- **Chondromyxoid fibroma**
- **Eosinophilic granuloma**

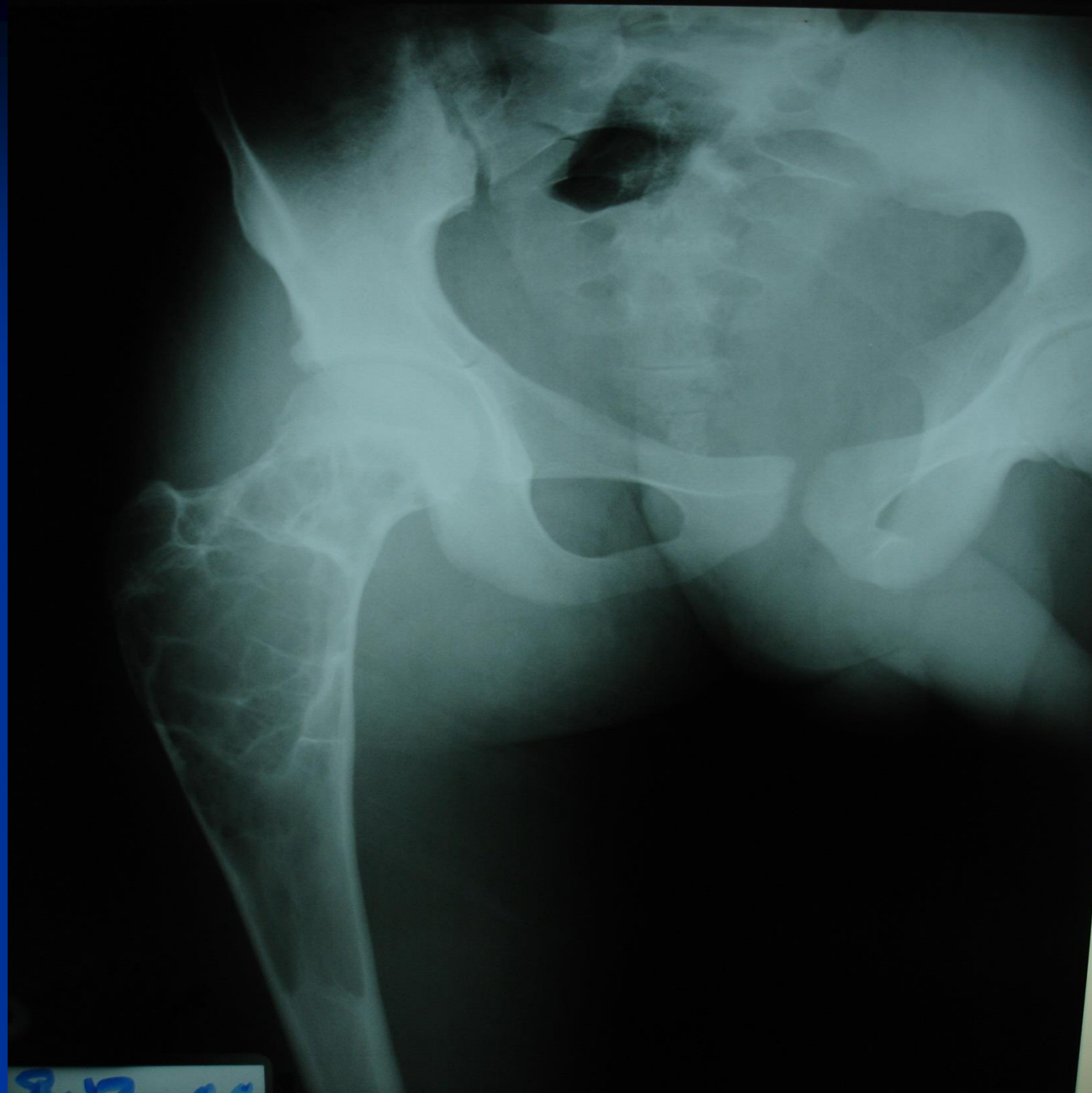
Patterns of Bone Destruction

- Geographic
- Moth-eaten
- Permeative



Leukemia





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THANK YOU