70 year old male with history of metastatic prostate cancer presents with cough

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Paget disease of the rib
Plain radiographs

Expansion and sclerosis of the right 6th rib.
Expansion and sclerosis of the right 6th rib.
Paget Disease (bone)

**Paget disease of the bone:**
- Chronic bone disorder characterized by excessive abnormal bone remodeling.
- Frequently affects the pelvis, spine, skull and proximal long bones and has characteristic radiographic features.

**Distribution of Paget disease:**
- Mono-ostotic (10-35%) or poly-ostotic (65-90%).
- Skull: 25-65%.
- Spine: 30-75%.
- Pelvis: 30-75%.
- Proximal long bones: 25-30%.
Paget Disease (bone)

- **CT Findings:**
  - Early lesions: Lytic, thinned cortex
  - Later lesions: Mixed lytic/sclerotic
  - Disordered, thickened trabeculae
  - Cortical thickening
  - Deformity: Protrusio, varus hips, anterior bowing tibia, basilar invagination
  - Enlargement of involved bone in all dimensions
  - Lesion in long bone begins at subchondral region, progresses toward diaphysis
  - Sharp oblique delineation at lesional border with normal bone
  - Termed blade of grass or flame-shaped

- **MR Findings:**
  - Histologic composition of marrow space changes from lytic through blastic disease
  - Often contains more marrow fat than adjacent normal bone

- **Bone scan:** ↑↑ uptake when lesions are active
Paget Disease (bone)

**Fibrous Dysplasia:**
- Calvarial and base of skull distribution identical. **Appearance may not be distinguishable from Paget disease**
- If homogeneous ground-glass appearance is present, diagnostic of fibrous dysplasia (FD)
- FD may enlarge bone but generally without trabecular coarsening or cortical thickening

**Sclerotic Metastases:**
- Blastic lesions in same distribution as Paget disease
- No trabecular coarsening or enlargement of bone

**Multiple Myeloma:**
- Early lytic lesions of Paget disease may be similar
- Myeloma does not enlarge bone or trabeculae
References:


