Adamantinoma

- Rare, slow-growing, primary malignant bone tumors that in the vast majority of cases occur in the tibia of young patients
- Typically presents in the 2nd to 3rd decades as a locally aggressive mass 3-15 cm in diameter.
- Slight male predilection (M:F = 1.3:1).
- Patients usually present with dull pain of gradual onset.

Imaging

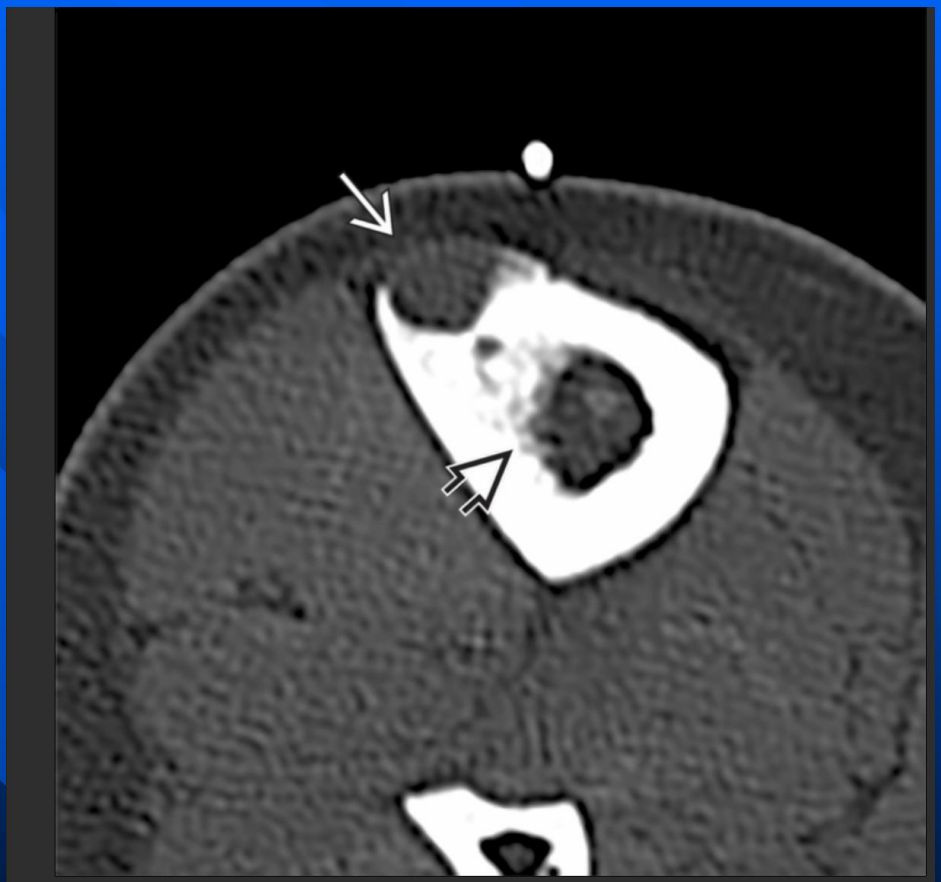
- Occurrence is almost exclusively confined to the tibial diaphysis (especially the anterior cortex) .
- Since it is a low-grade malignancy, it has the propensity to metastasize to distant locations including lung, bone, lymph nodes, pericardium, and liver
- Typically, it appears as a multilocular or slightly expansile osteolytic cortical lesion.
- May be visualized as areas of lysis interspersed with areas of sclerosis.
- Lesions tend to have an eccentric epicenter and a lack of periosteal reaction.
- There may be locally aggressive disease at presentation.

Check list

- Consider
  - Adamantinoma, OFD-like adamantinoma, and OFD (osteofibrous dysplasia) thought by some to represent spectrum of similar disease
    - » Frequent reports of marginal excision of lesions initially reported to be OFD or OFD-like adamantinoma resulting in aggressive recurrence and being reclassified as adamantinoma
    - » Histopathology, ultrastructure, and cytopathology suggest they are closely related
      - Progressive complexity of chromosomal aberrations, increasing from OFD to adamantinoma
      - Of these, only adamantinoma develops metastases
      - Suggests multistep neoplastic transformation
- Reporting Tips
  - Since OFD and adamantinoma cannot be differentiated reliably by imaging, report possibility of both lesions
  - Tissue should be carefully examined to determine where individual case lies along this spectrum

View Full Screen Image

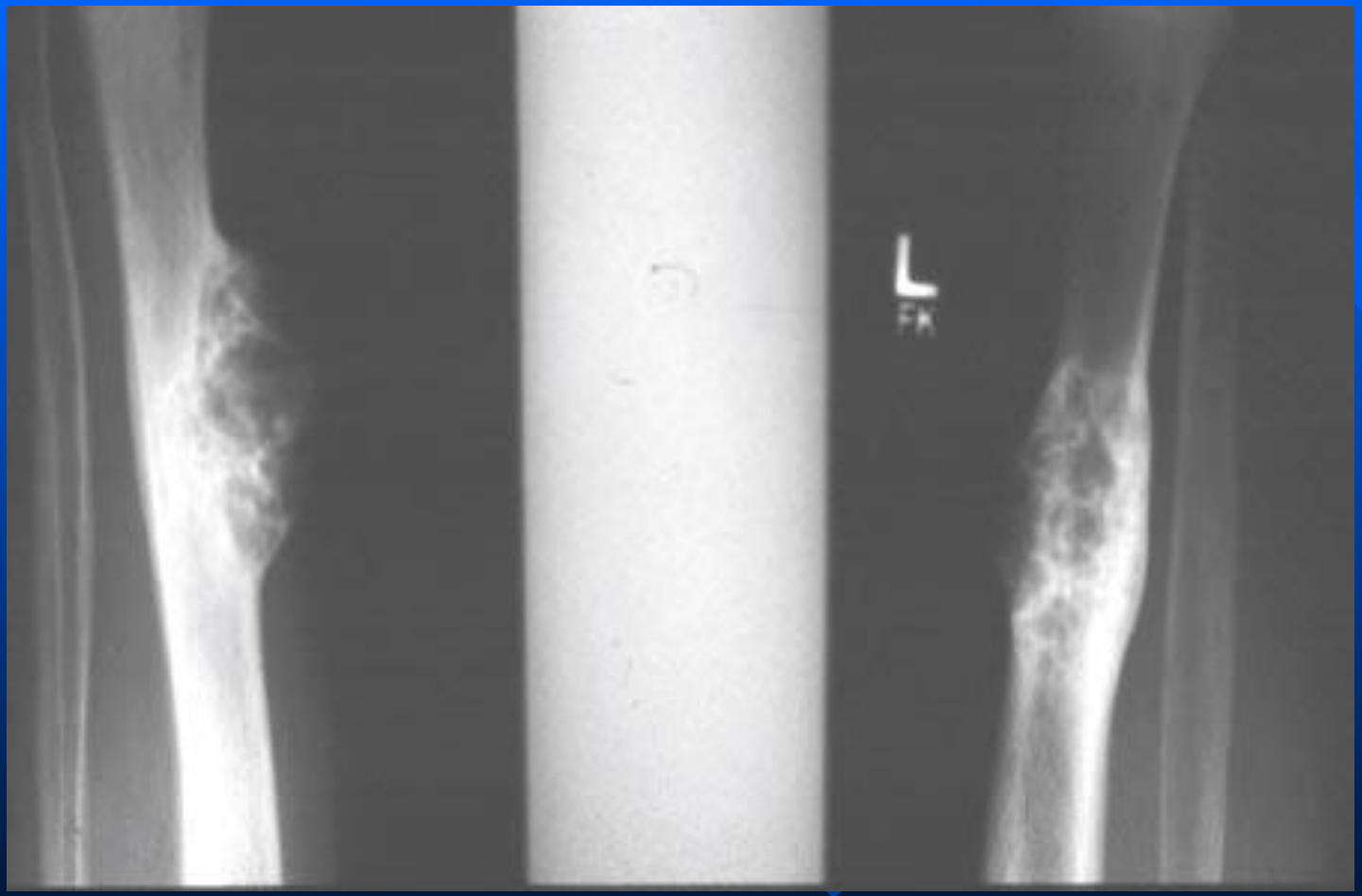
Lateral radiograph in a 25-year-old man with adamantinoma of the right distal tibia shows a mixed lytic and sclerotic lesion (between ⇨) with intramedullary and cortical components. A more lytic component in the anterior cortex → results in severe cortex thinning.



View Full Screen Image

Axial CT in the same patient shows the lytic anterior cortical lesion → as well as the intramedullary fibrous component ⇨.

Adamantinoma



Adamantinoma

Central well-defined expansile lesion of homogeneous intermediate signal intensity (asterisk) with small satellite foci (black arrows) and decreased signal in the periphery of the lesion consistent with sclerotic changes (white arrows)