A large, stylized leaf graphic in a dark blue color, positioned on the left side of the slide, partially overlapping the text.

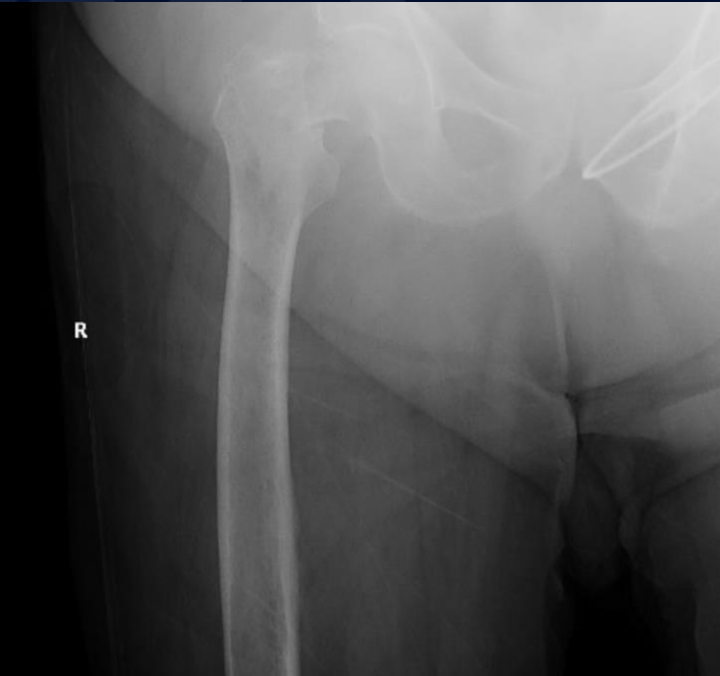
75-year-old male presenting diffuse pain and inability to bear weight

Perpetual Taylor, MS3

Radiograph



Radiograph



Radiograph



CT

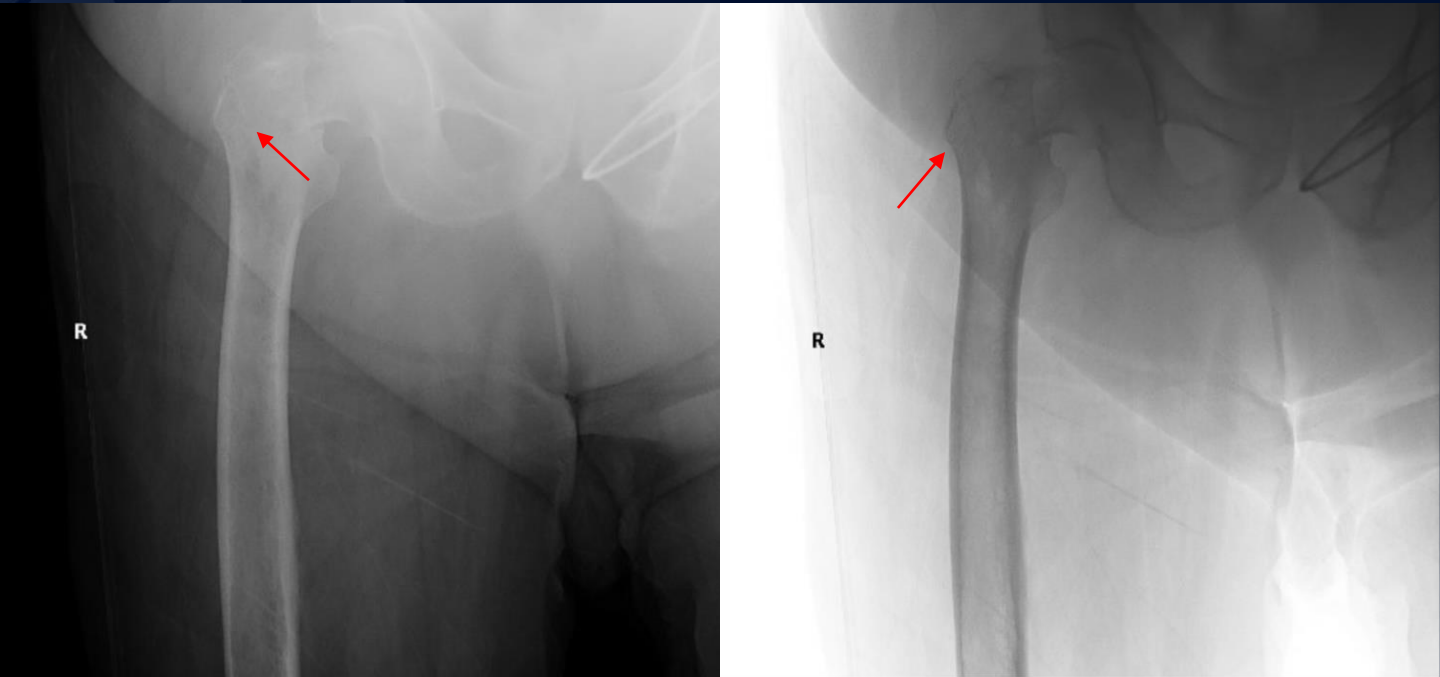


A large, stylized oak leaf graphic in a dark blue color, positioned on the left side of the slide. It features a prominent central vein and several smaller veins branching out, with a scalloped edge.

?

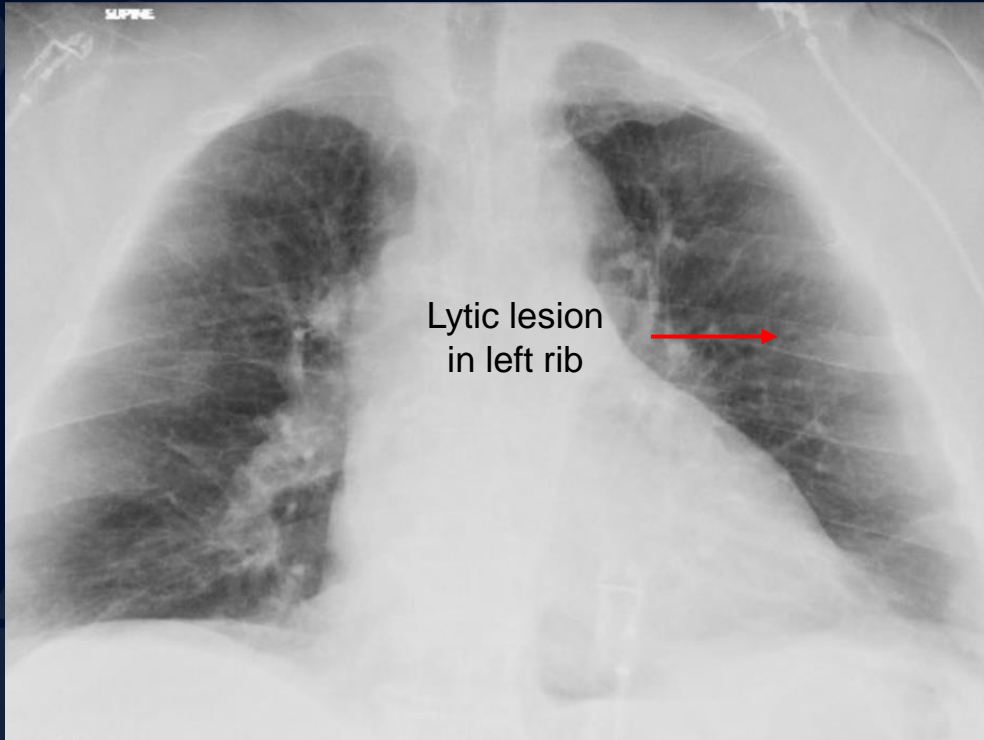
Multiple Myeloma

Radiograph



Right intertrochanteric proximal femur fracture

AP Radiograph



Skeletal Survey



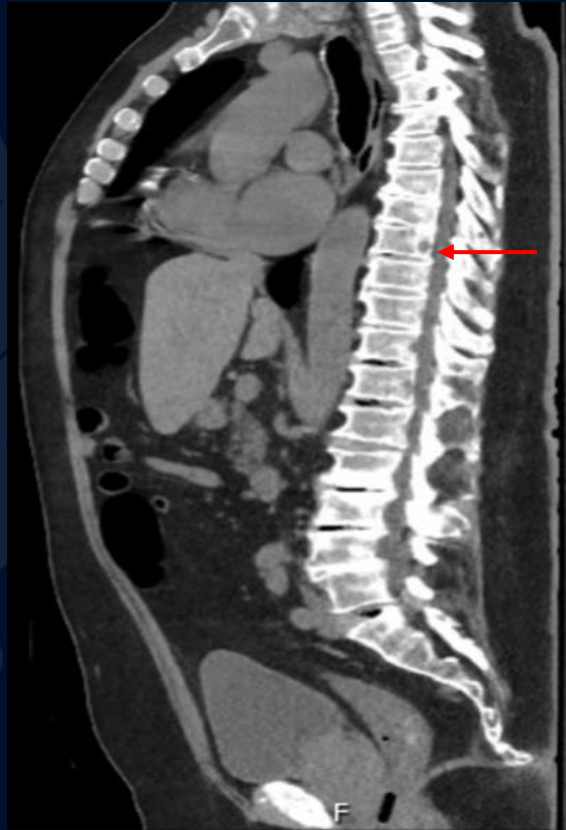
Lytic lesions on diaphysis of right humerus

Subtle lytic lesions of right radial diaphysis and distal right humerus



Punched-out lytic lesions

CT



T8 posterior vertebral body lytic lesion

Multiple Myeloma

Epidemiology

- ~ 1 to 2% of cancers and 17% of hematologic cancers
- Annual incidence of about 7 per 100,000 in the U.S
- Most common in African American men aged 65 to 75

Etiology

- Hyperplasia of plasma cells in bone marrow

Diagnosis

- Serum protein electrophoresis (SPEP) - monoclonal spike
- Urine protein electrophoresis (UPEP)
- Serum free light chain analysis - elevated light chain
- Serum protein immunofixation - immunoparesis
- Urinalysis - light chain casts
- Peripheral blood smear - Rouleaux formation
- Bone marrow biopsy - >10% plasma cells
- **Whole body MRI/F-FDG-PET/CT**
- **Skeletal survey- punched-out lytic lesions, osteopenia, and pathologic fractures**

Multiple Myeloma

Clinical Presentation

- Hypercalcemia
- Renal failure
- Anemia (typically normocytic)
- Bone pain
- Weight loss
- Infection

Differential

- Osteoporotic fracture (i.e., vertebral compression fracture)
- Trauma-related fracture
- Hyperparathyroidism
 - Primary
 - Secondary
 - Tertiary
- Small cell lung secreting PTHrP
- Osteomalacia
- Paget's disease
- **Multiple myeloma**

Treatment

- Proteasome inhibitors
- Induction chemotherapy
- Hematopoietic stem cell transplant
- Anti-CD38 monoclonal antibody
- Palliative radiation therapy

References

- Laubach, J. P. (2022). *Multiple myeloma: Clinical features, laboratory manifestations, and diagnosis*. UpToDate. Retrieved March 29, 2023, from https://www-uptodate-com.online.uhc.edu/contents/multiple-myeloma-clinical-features-laboratory-manifestations-and-diagnosis?search=multiple+myeloma&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1#H38
- Laubach, J. P. (2023). *Multiple myeloma: Overview of management*. UpToDate. Retrieved March 29, 2023, from https://www-uptodate-com.online.uhc.edu/contents/multiple-myeloma-overview-of-management?search=multiple+myeloma&topicRef=6649&source=related_link