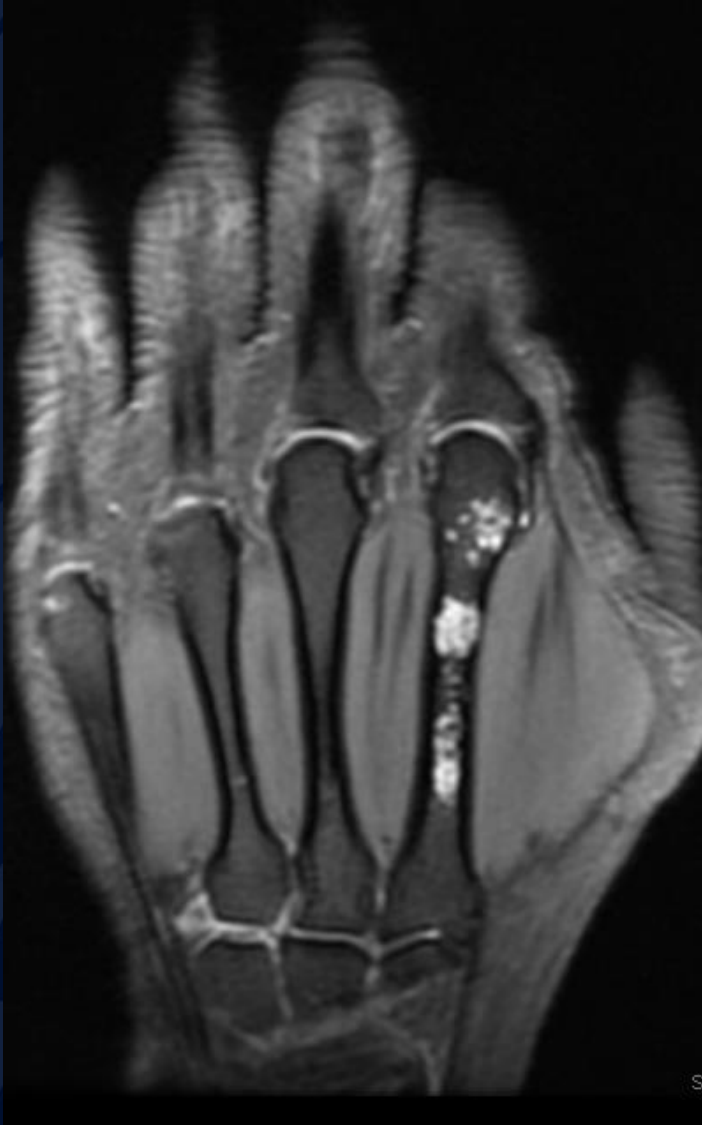


A large, stylized oak leaf graphic in a dark blue color, positioned on the left side of the slide and partially overlapping the text.

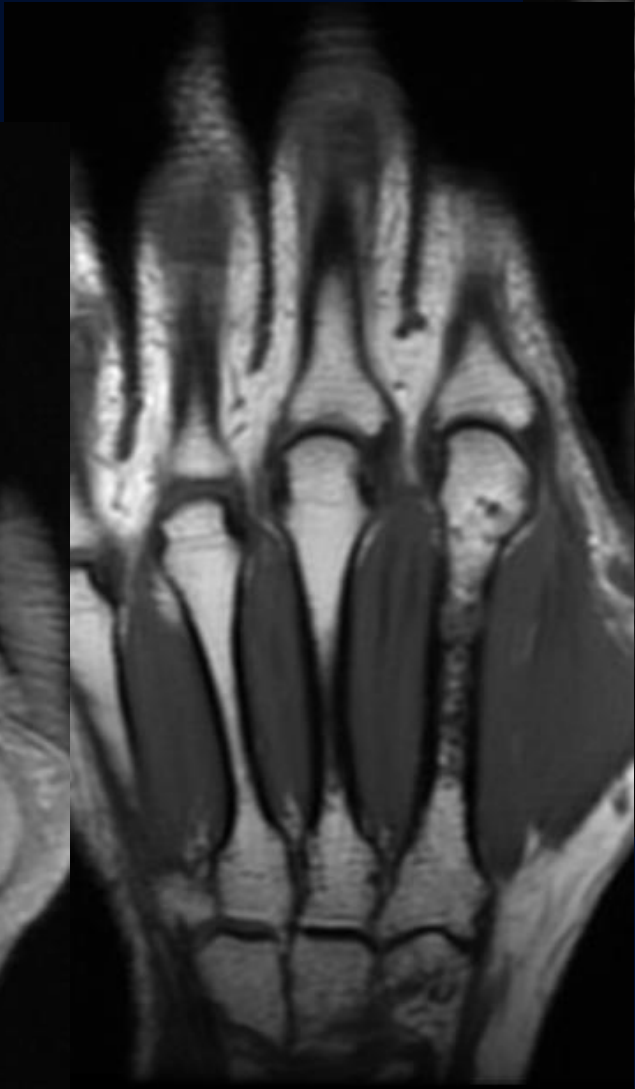
# 52-year-old female presents with hand pain

John J. DeBevits IV, MD

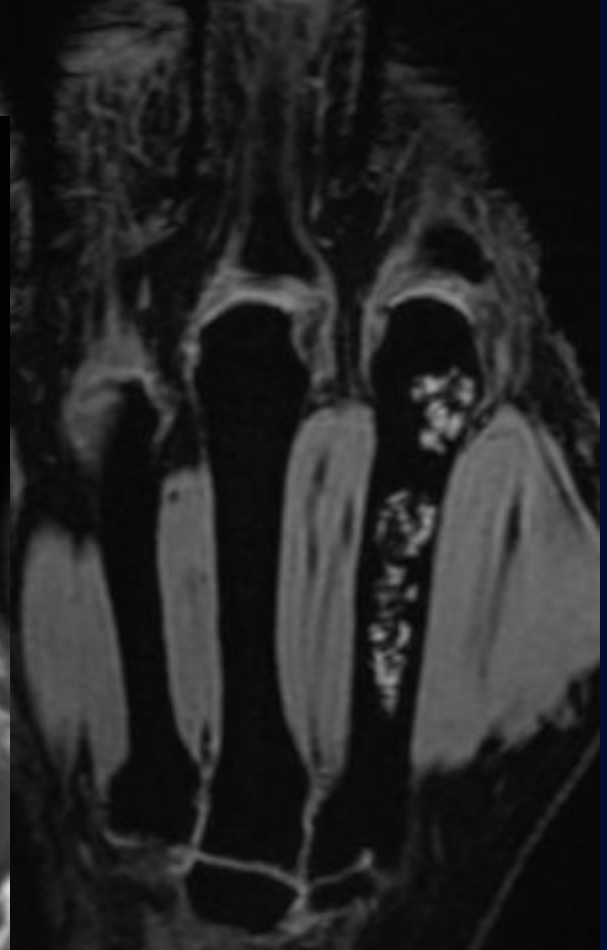




Cor T2 FS



Cor T1



Cor 3D MERGE

A large, stylized oak leaf graphic in a dark blue color, positioned on the left side of the slide. The leaf has a prominent central vein and several smaller veins branching off it. The leaf's edge is serrated.

?

# Enchondroma of the hand



PA hand radiograph demonstrates a second metacarpal lesion which is mildly expansile and contains heterogeneous internal matrix. No periostitis pathological fracture.



Coronal PD FS (top left), T1 (top right) and MERGE 3D (bottom) demonstrate a multicentric lobulated expansile mass within the 2<sup>nd</sup> metacarpal extending from the proximal shaft to the metacarpal neck. Margins are well-circumscribed and sclerotic and there is stippled central calcification compatible with chondroid matrix. No periostitis or perilesional edema.

# Enchondroma

- Benign tumor of hyaline cartilage originating in medullary bone
- Occur any age, but majority in 3<sup>rd</sup>-5<sup>th</sup> decades
- Usually asymptomatic → clinical pain not localizable to a joint should raise suspicion for low-grade chondrosarcoma
  - May also be heralded radiographically by extensive endosteal scalloping or a change in character of the lesion
- Generally painless, but may undergo pathological fx or malignant transformation as above
- If small, may either follow or choose to ignore if painless
- If large, may perform marginal or wide resection



# Enchondroma

- 50% occur in hands and feet → in small tubular bones, an expanded, bubbly appearance is typical
- Also seen in long bones (prox humerus > prox and distal femur > prox tibia)
- Central, metaphyseal
- Chondroid matrix may be subtle or absent
- Calcification is typical within long bone lesions, but typically absent in enchondroma of the hand
- T1WI: low to intermediate signal
- Fluid-sensitive sequences: lobulated high signal typical of benign cartilage lesions
- Matrix seen as low signal or signal void

# References

1. Douis H et al. The imaging of cartilaginous bone tumours. I. Benign lesions. *Skeletal Radiol.* 41(10):1195-212, 2012
2. Murphey MD et al. Enchondroma versus chondrosarcoma in the appendicular skeleton: differentiating features. *Radiographics.* 18(5):1213-37; quiz 1244-5, 1998
3. Herget GW et al. Insights into enchondroma, enchondromatosis and the risk of secondary chondrosarcoma. Review of the literature with an emphasis on the clinical behaviour, radiology, malignant transformation and the follow up. *Neoplasma.* 61(4):365-78, 2014