52-year-old female presents with hand pain

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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\textsuperscript{nd} 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\textsuperscript{rd}-5\textsuperscript{th} decades
- Usually asymptomatic $\rightarrow$ 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