50F with chronic right shoulder pain

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2 years earlier
Enchondroma
“Rings and arcs”
chondroid matrix

Well defined

Intramedullary

No cortical destruction

No periosteal reaction
Lobulated high fluid signal typical of benign cartilage lesions
Enchondroma

- **Location**: Metaphysis - prox humerus > prox/dist femur > prox tibia
- **Chondroid matrix** – “rings and arcs” classic, but can be variable…
  - dense, absent, very subtle, or punctate
- **In larger bones** – usually not big enough to cause expansion
  - Can cause mild scalloping of endosteal cortex
    - If >2/3 cortical thickness or >2/3 length of central lesion may be transformation to chondrosarcoma
- **Usually <5cm length**
- **Look different in pediatrics**:
  - Relatively large
  - Endosteal scalloping
  - Less chondroid matrix
Enchondroma

• Can change over time…
  – Increase size and increase matrix calcification
  – Think transformation to chondrosarcoma when:
    • new lytic destruction at edge of lesion W/O matrix
    • destruction of established chondroid matrix

• Differentiating enchondroma from low-grade CS - MR may be useful but often not diagnostic

• Differentiating from infarct on radiograph difficult: but infarct usually has more prominent sclerotic margin, serpiginous distribution, and multifocal.
  – Can distinguish on MR
Enchondroma

- Presentation: usually incidental bc asymptomatic BUT…
  - Can be painful
  - Cannot always distinguish from adjacent joint pain
  - Can have pathologic fracture
  - If malignant degeneration is usually painful
- Majority in 3^{rd}-5^{th} decade of life; M=F
- 2^{nd} most common benign bone tumor
- Rx:
  - Small – most do nothing
  - Large – marginal(curettage+bone graft) or wide resection(if suggestion of chondrosarcoma this is curative)
    - If no chondrosarcoma on histology – no sarcoma follow up
References

1. https://www.ncbi.nlm.nih.gov/pubmed/?term=24645839%5Bpmid%5D

2. https://www.ncbi.nlm.nih.gov/pubmed/?term=23771600%5Bpmid%5D