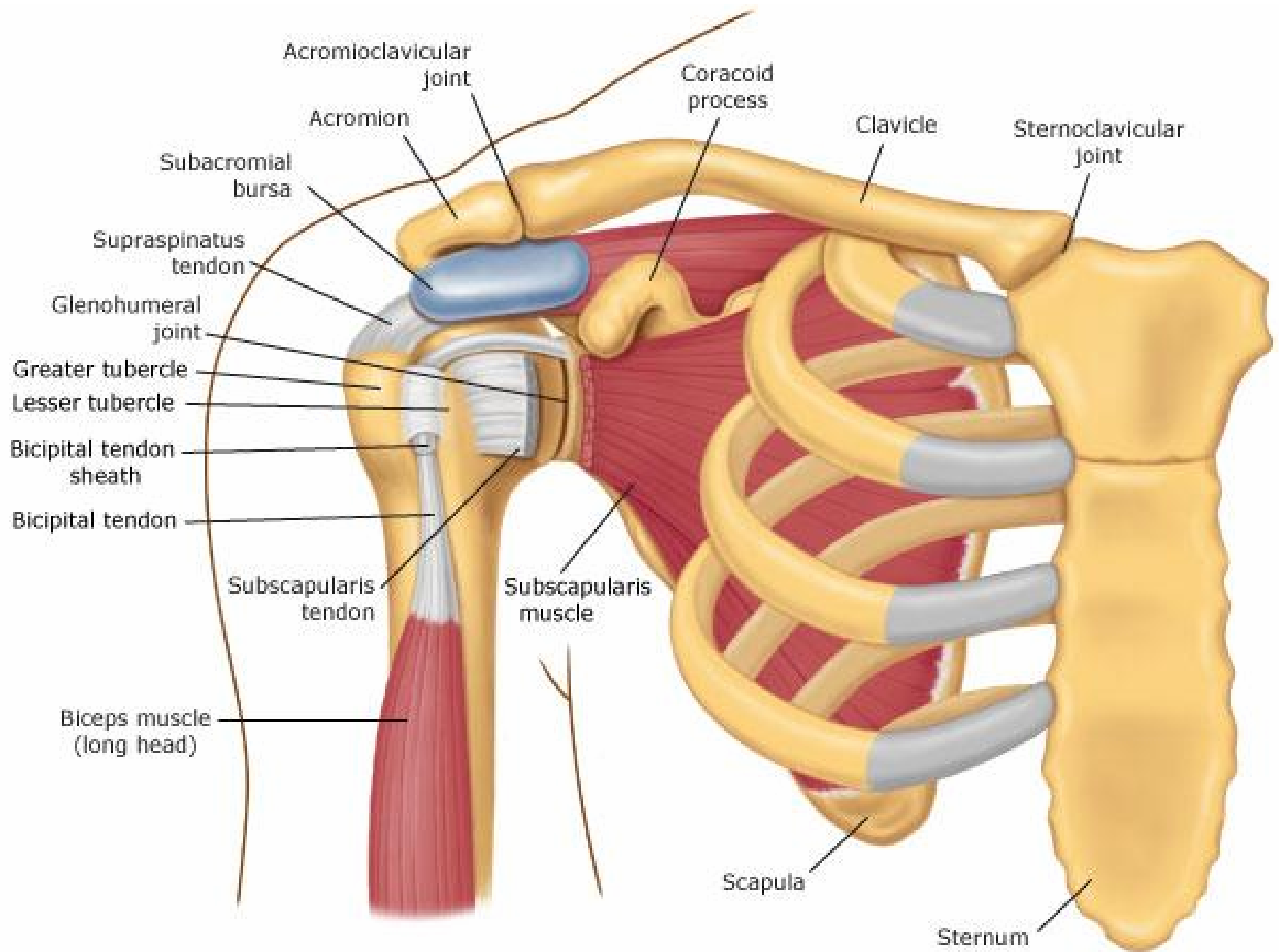


*My patient has
shoulder pain*

Hiren R. Patel, MD
Atlantic Medical Imaging

Shoulder Pain

- Some facts
 - Common
 - 10% of all American, each year
 - Usually multi-factorial
 - Complex motion
 - Many important surrounding structures
 - Expensive
 - Billions of dollars spent
 - Debilitating
 - Big impact on routine activities of daily living



Shoulder Pain

- Types
 - glenohumeral
 - acromioclavicular
 - subacromial
 - rotator cuff
 - biceps
 - labrum
 - capsule
 - other
- Acute vs. Chronic

Shoulder Pain

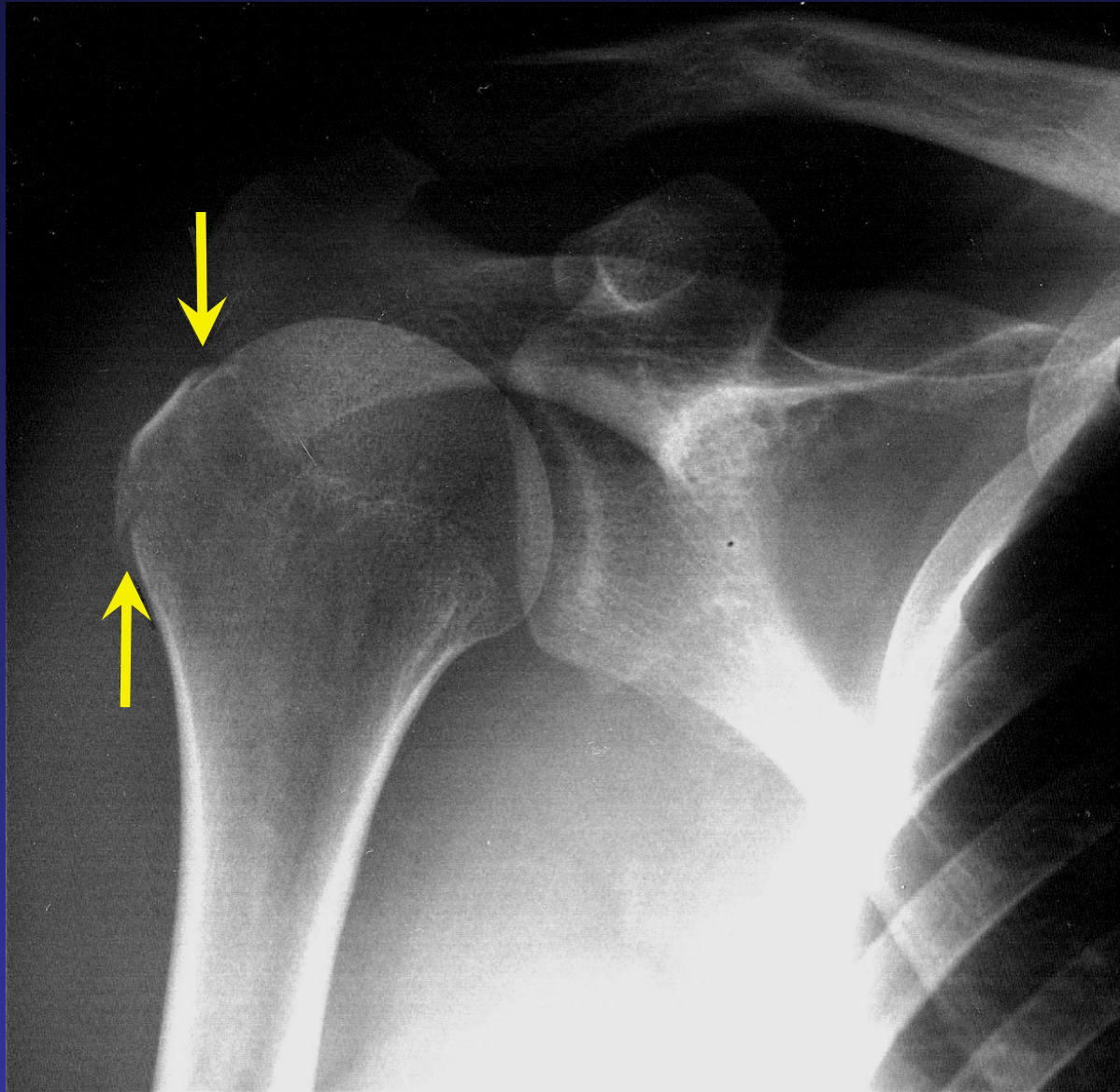
- Initial work-up

- Plain x-rays

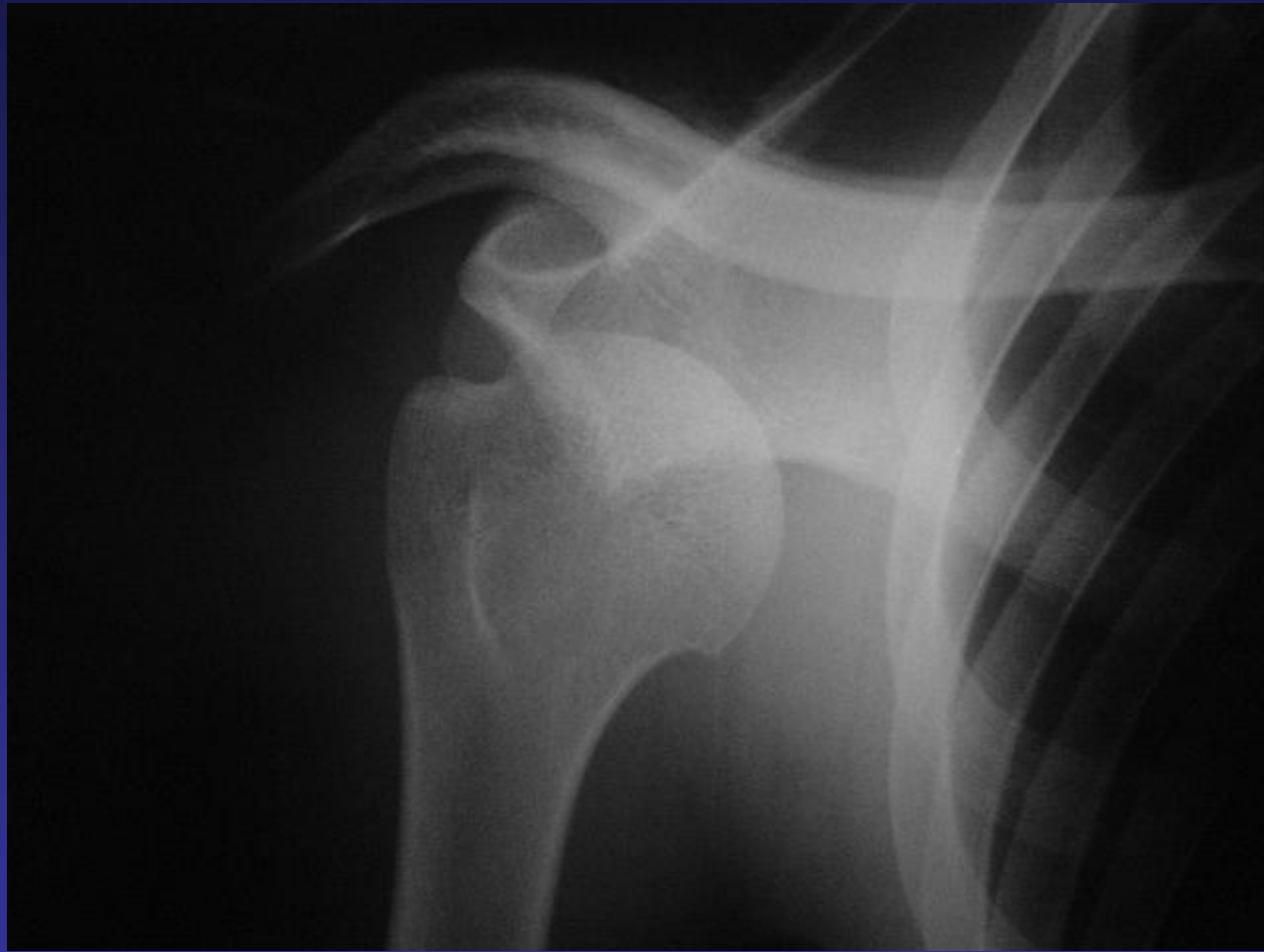
- Quick, inexpensive and widely available
 - No contrast or special tech skills needed
 - Excellent bone & alignment characterization

- Assess

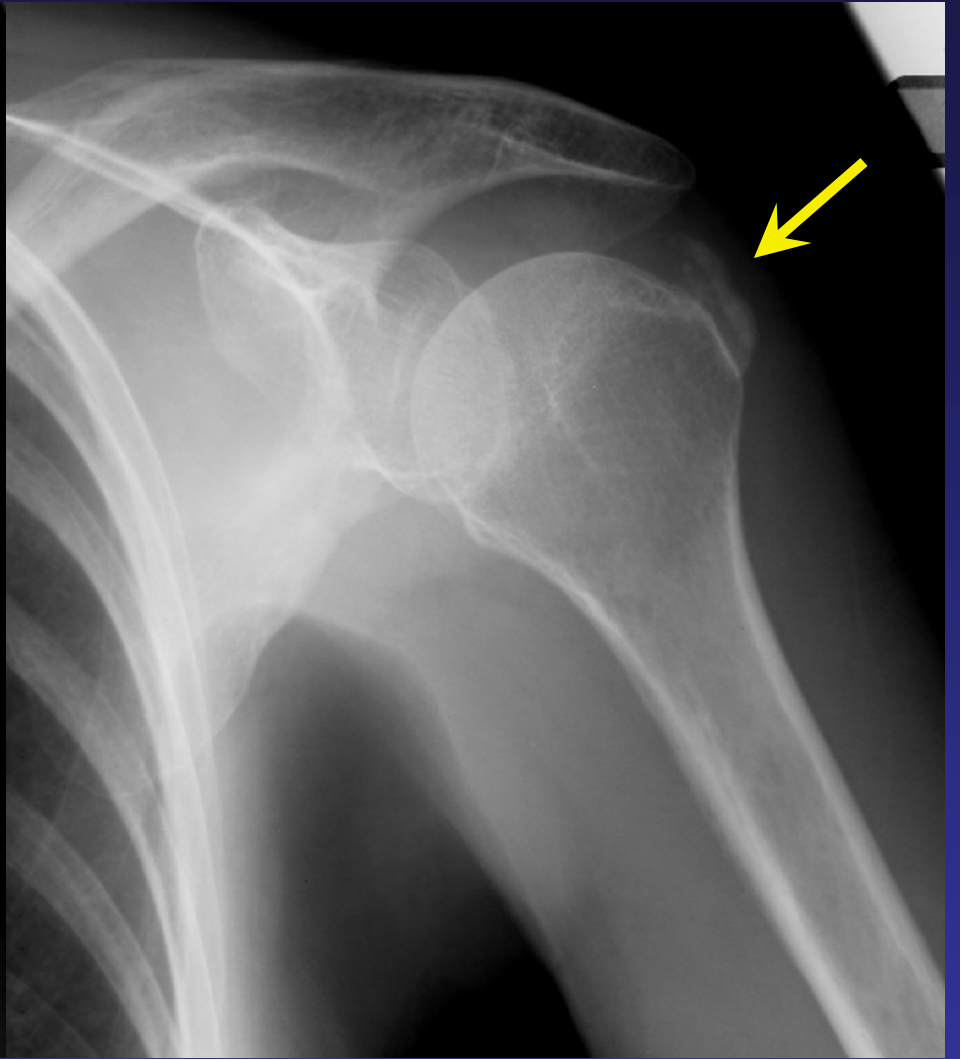
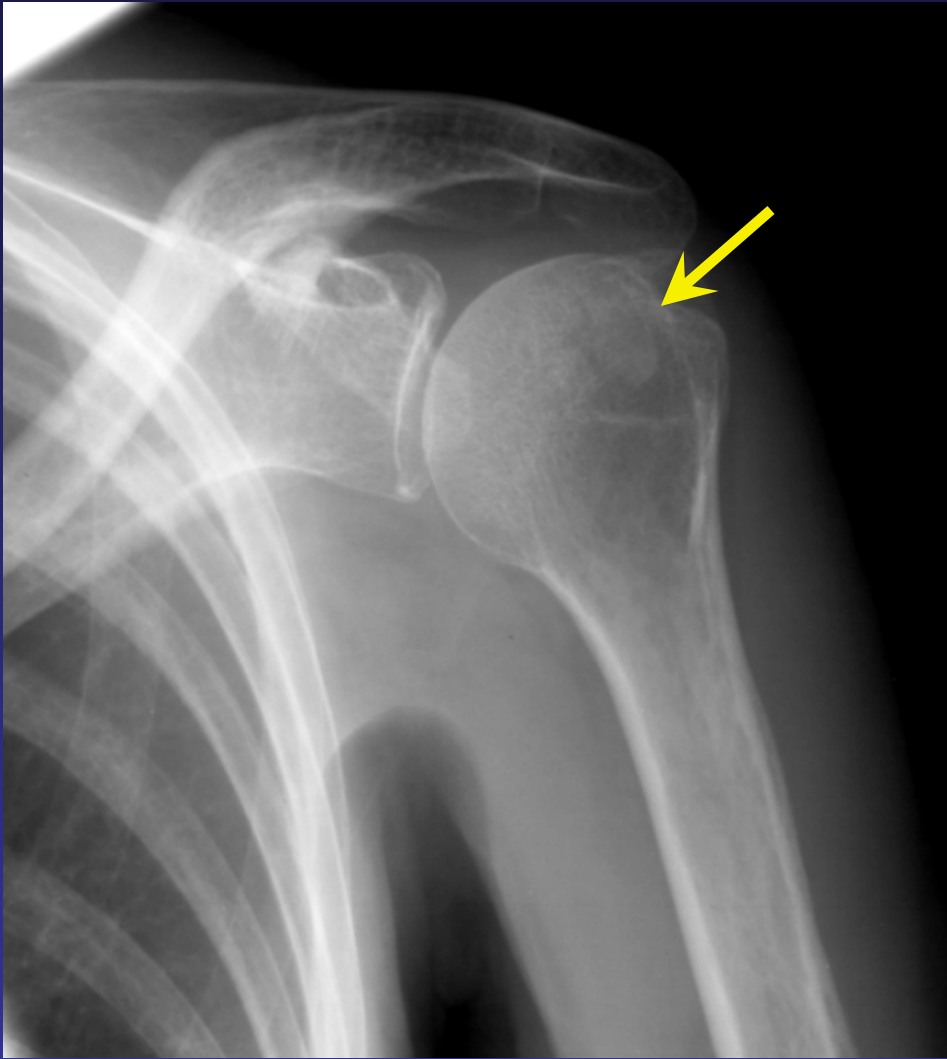
- » Fracture / Dislocation
 - » Osteoarthritis
 - » Soft tissue calcification
 - » Mass or bone destruction



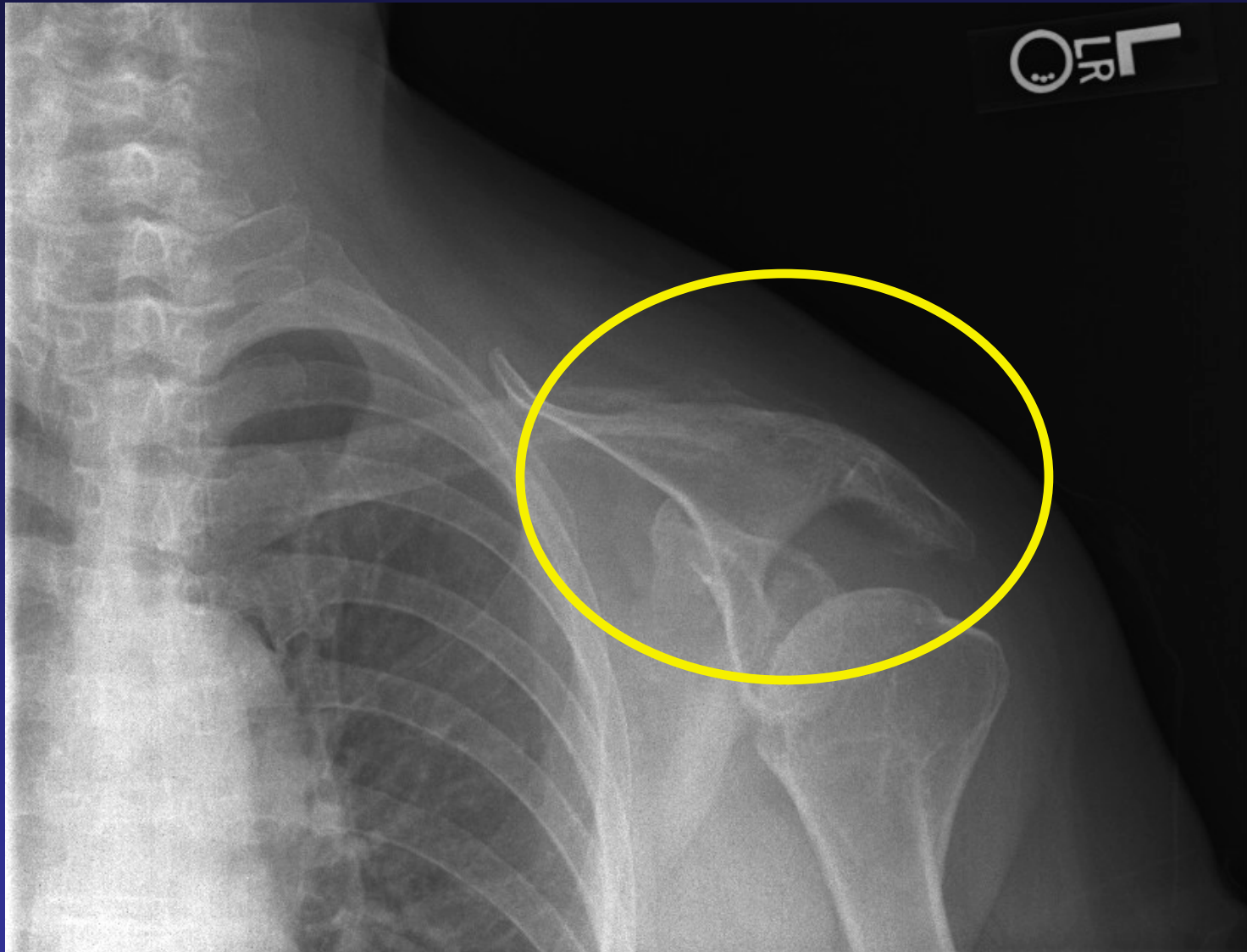
greater tuberosity fracture



anterior / inferior dislocation



rotator cuff calcific tendonitis



metastasis

Shoulder X-ray

- Disadvantages
 - Planar imaging (2D, overlapping structures)
 - Non-displaced fractures can be missed
 - Poor characterization of cartilage, tendons, ligaments, and joint spaces
 - Often needs follow-up imaging

Shoulder Pain



X-ray



MRI

Shoulder MRI

- The cornerstone of shoulder imaging
 - Advantages
 - Quick, reliable, accurate
 - Excellent bone and soft tissue characterization
 - No ionizing radiation
 - Disadvantages
 - Relatively expensive (insurance approval)
 - Claustrophobia, pacemaker, aneurysm clips
 - Beware the low field magnet*
 - Operator / reader dependent*

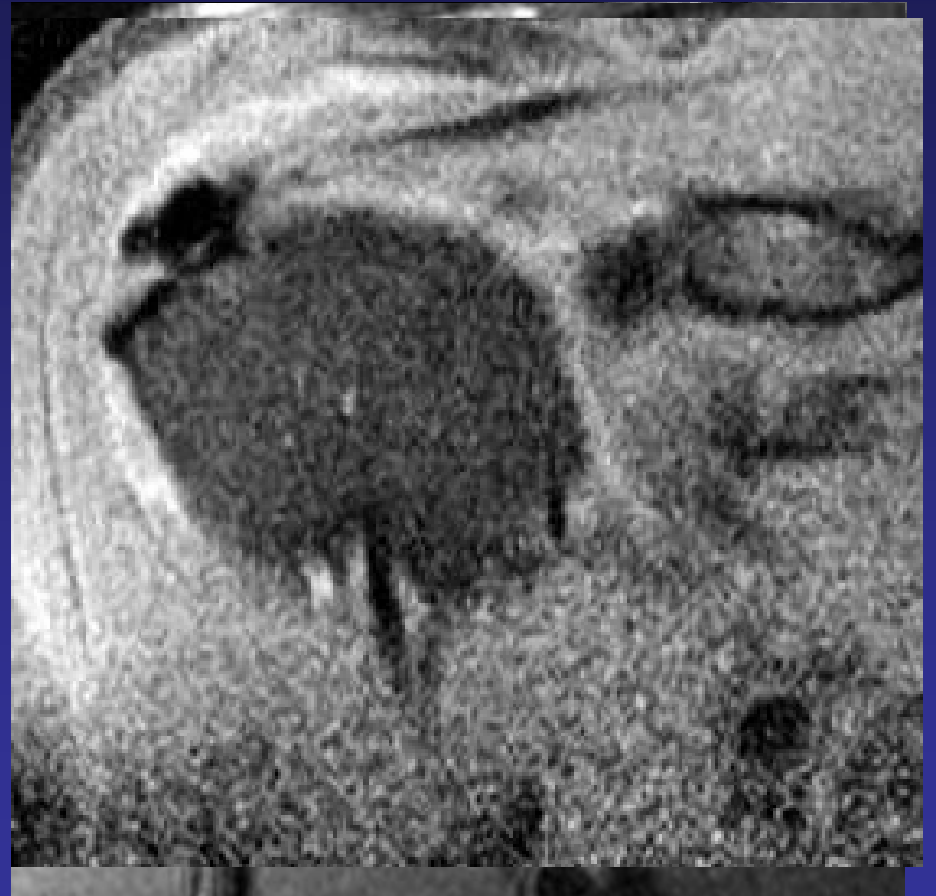
MRI

- Glenohumeral
- Acromioclavicular
- Subacromial
- Rotator cuff
- Biceps
- Labrum
- Capsule
- Other



MRI

- Rotator cuff pathology
 - Tendinopathy
 - Full thickness tear
 - Partial thickness tear
 - Calcific tendonitis



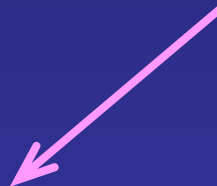
Shoulder Pain



X-ray



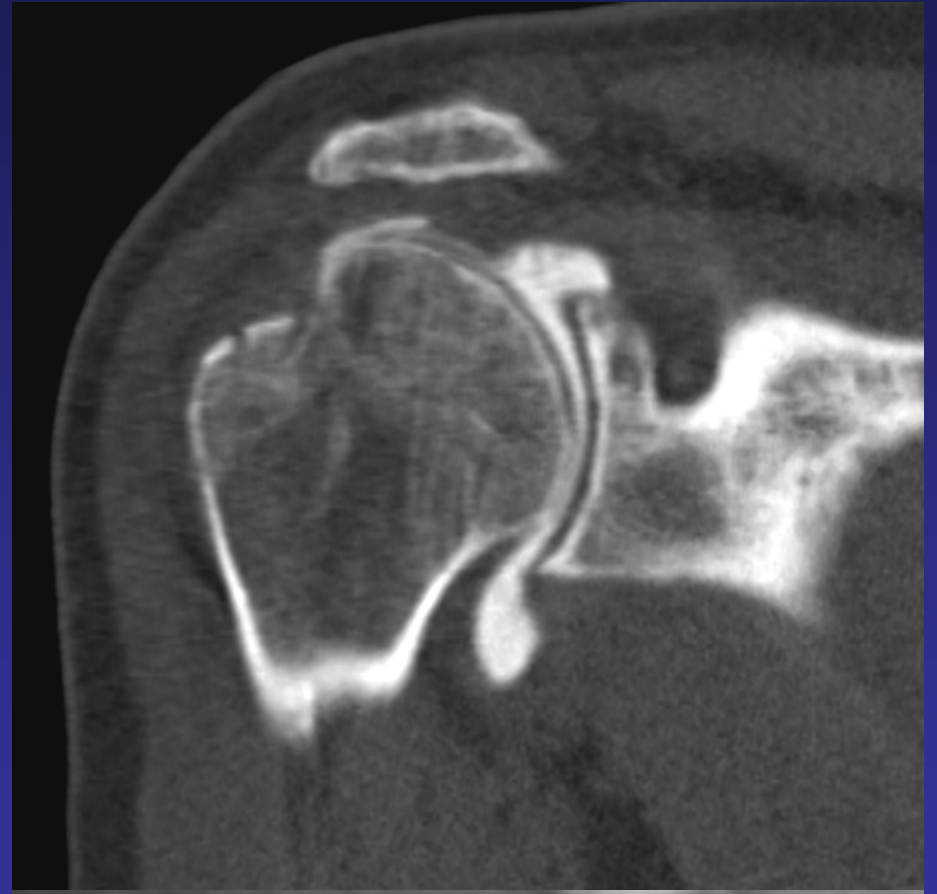
MRI



Arthrography

Arthrography

- Fluoroscopic-guided
- Rotator cuff tears
- Labrum tears
- CT arthrogram



Shoulder Pain



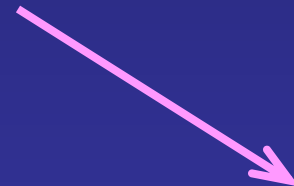
X-ray



MRI



Arthrography

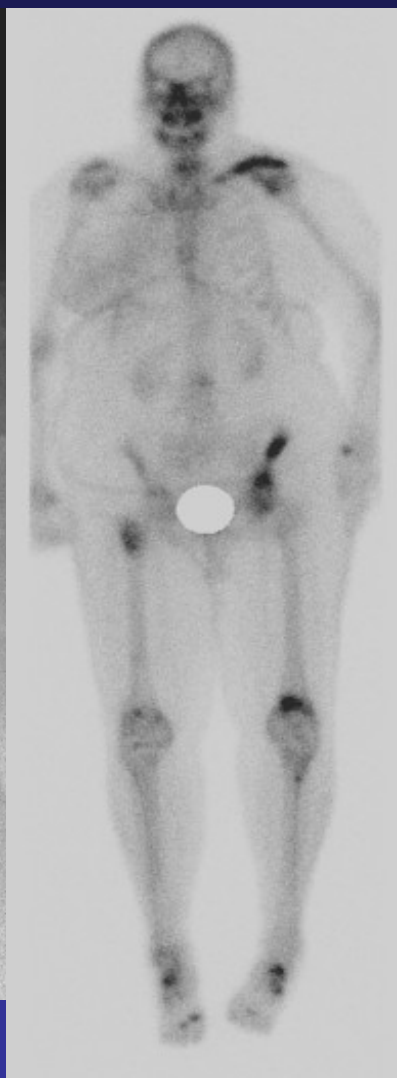


Additional
modalities

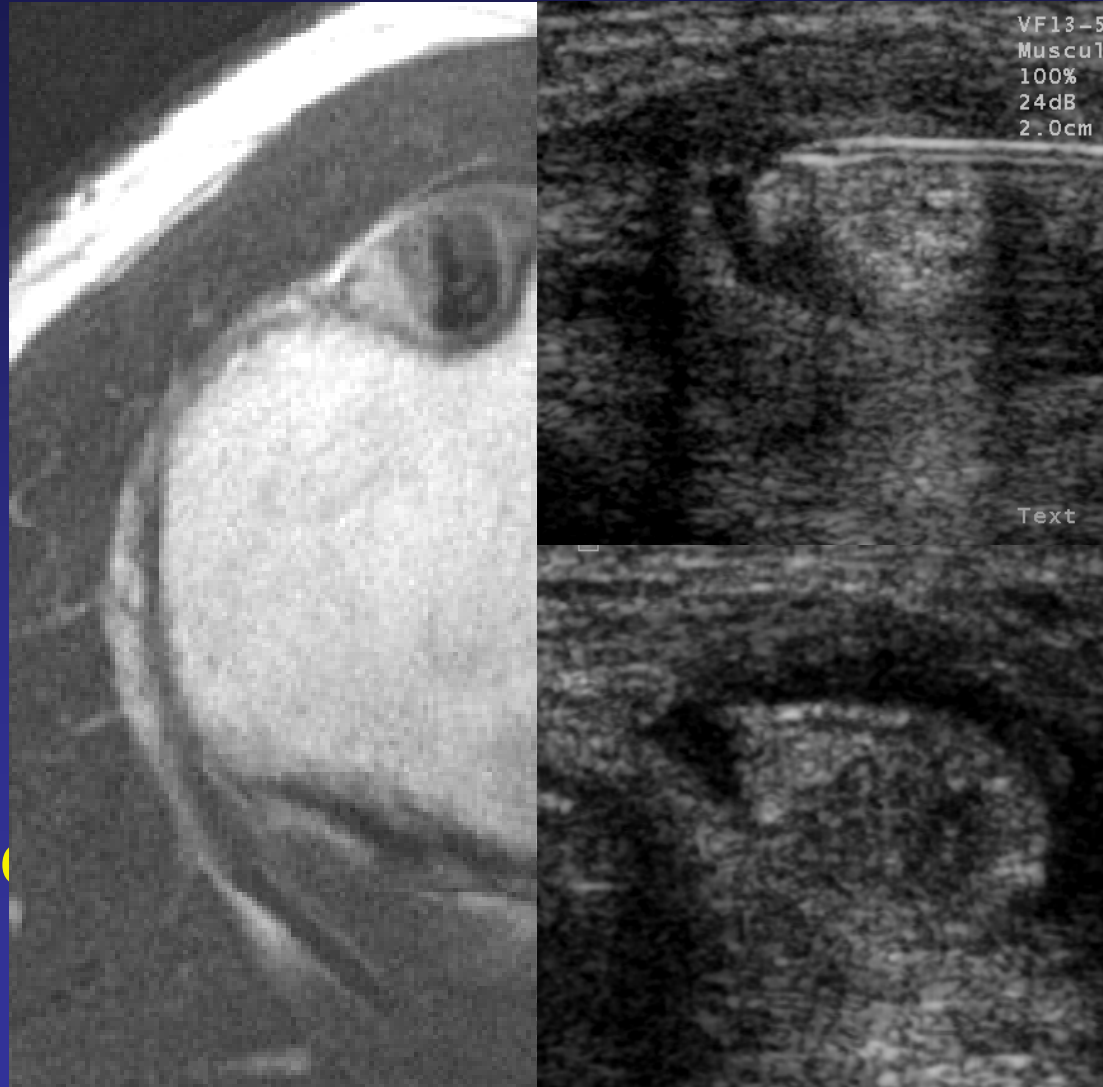
Additional Modalities

- Bone scan
 - Work-up of osseous lesions
 - High sensitivity for bone turnover
 - Fracture, arthritis, lytic tumors
- Ultrasound
 - Targeted, dynamic evaluation
 - Guidance for procedures
 - Non-MRI compatible patients

Bone scan



Ultrasound



tend

Shoulder Pain Summary

