

# IMAGING 101

X-RAY CT MRI

DEXTER STALLWORTH, MD



# 15 MINUTE RADIOLOGY RESIDENCY

- Advantages and Limitations
- Contraindications
- Cost
- Contrast or No Contrast
- Which is the best Test to Order?

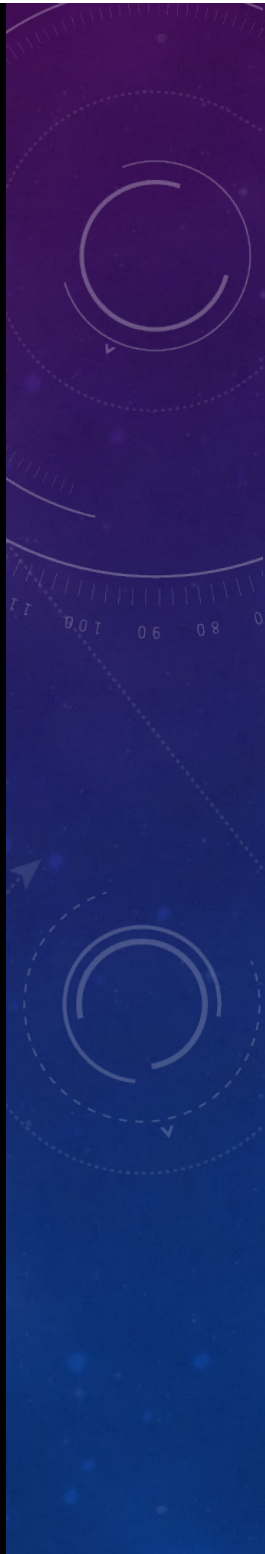
The background is a dark blue gradient with a starry texture. On the left side, there are several overlapping circular elements. A prominent one is a semi-circular scale with tick marks and numbers ranging from 160 to 260. Other circles are partially visible, some with dashed lines and arrows, suggesting a technical or scientific theme.

# X-RAYS




# X-RAYS

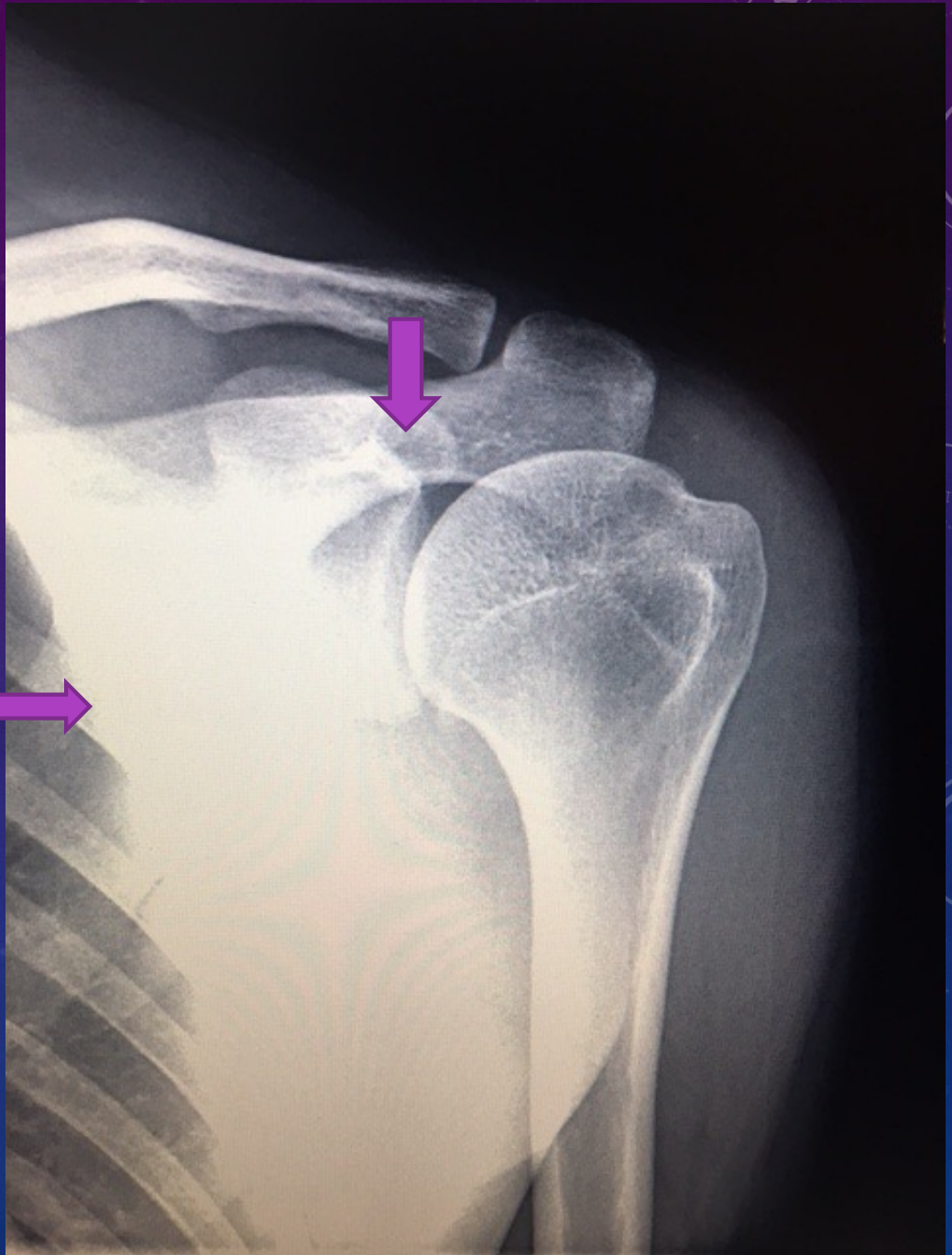
- INEXPENSIVE
- QUICK
- CONVENIENT
- BONE DETAIL
- RADIATION
- LIMITED SOFT TISSUES

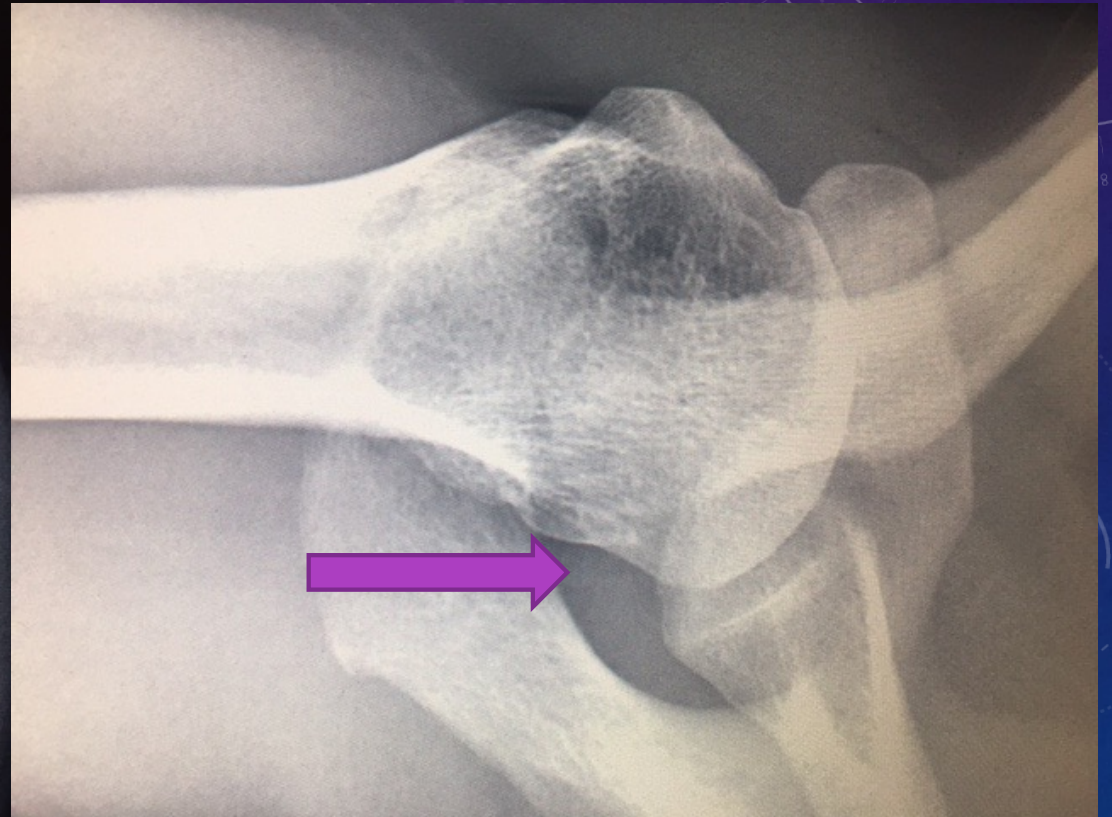
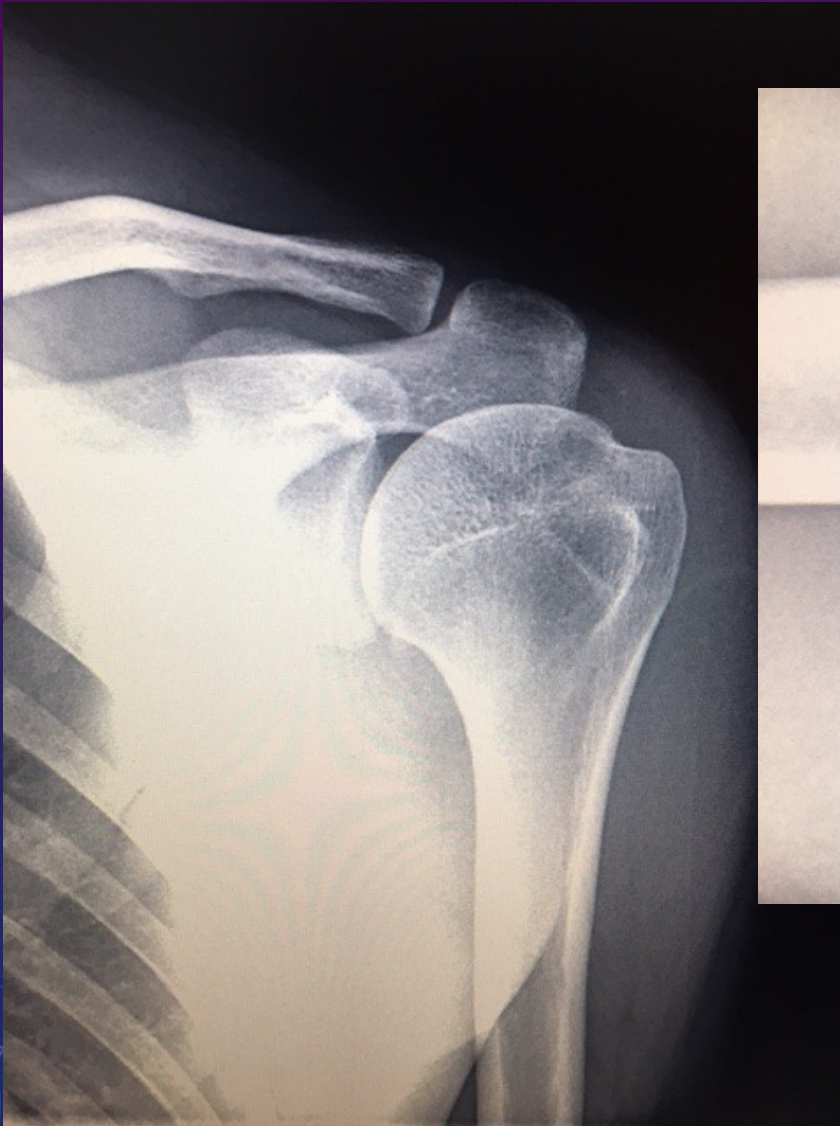




The background features a dark blue gradient with faint, light blue technical diagrams. On the left, a large circular scale is visible, with numerical markings from 160 to 260 in increments of 10. Several circular diagrams with arrows and dashed lines are scattered across the background, suggesting mechanical or engineering concepts. The overall aesthetic is clean and professional, typical of a medical or scientific presentation.

# SHOULDER DISLOCATION





The background features a dark blue gradient with a subtle starfield. On the left side, there are several circular and semi-circular elements. A prominent feature is a scale with numerical markings from 160 to 260 in increments of 10, arranged in a semi-circle. Other elements include dashed and solid circular lines, some with arrows indicating direction, and a dotted diagonal line crossing the scene.

# CT SCAN



I want a second opinion.

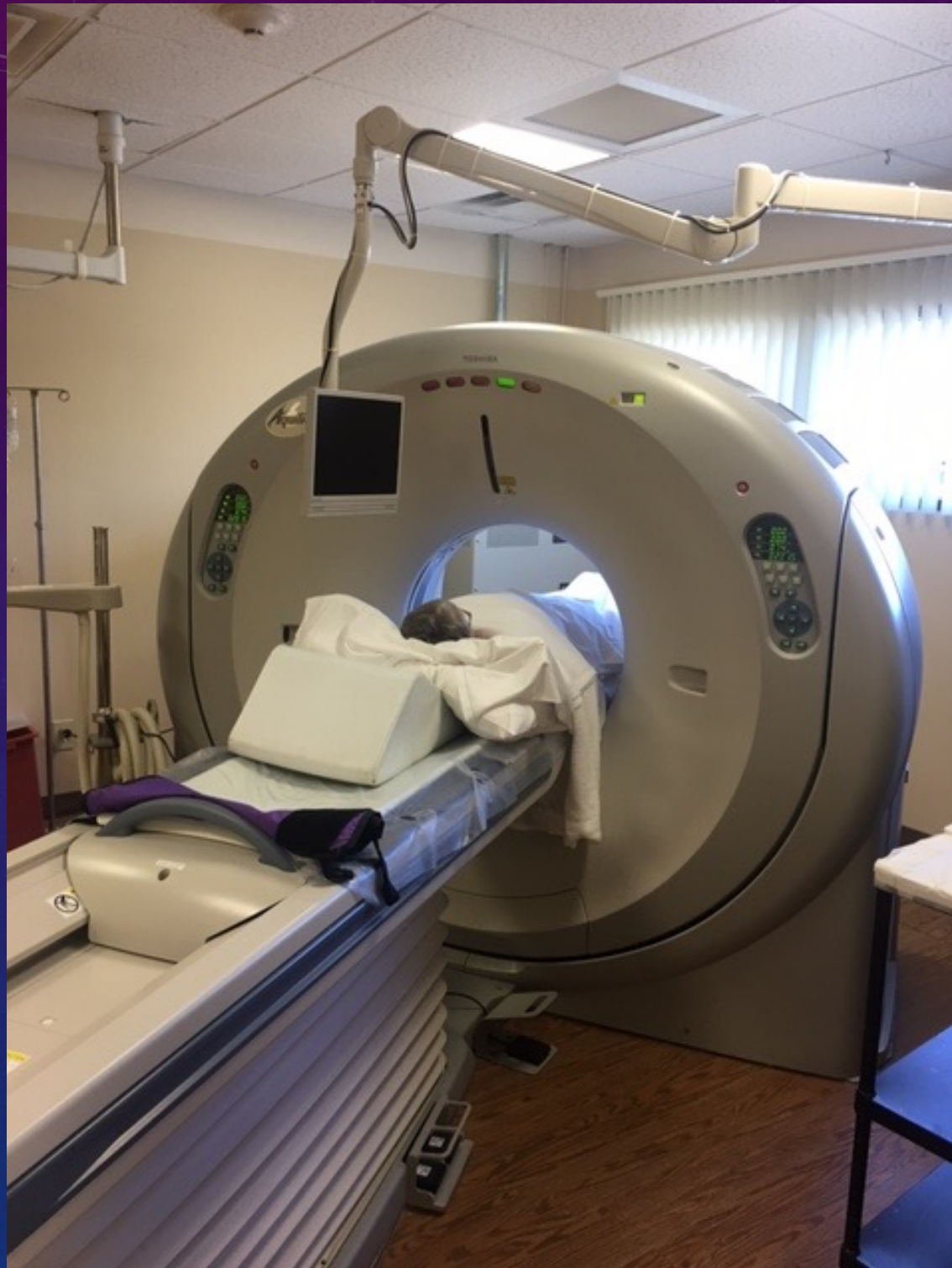
Cats Kill College  
RA 102

CARTOONSTOCK.com

Search ID: kwan93

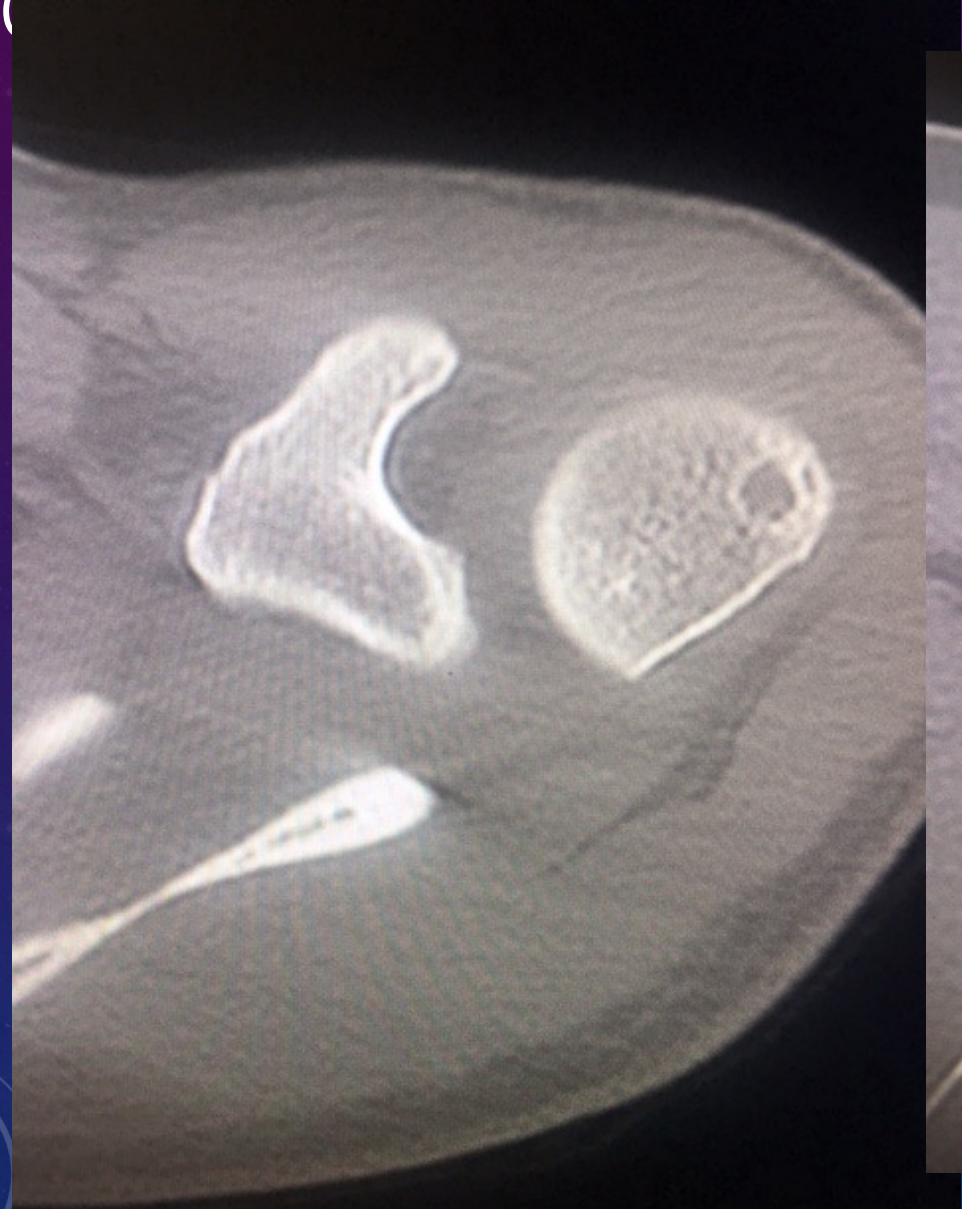
Kim Wertz

Cat Scan

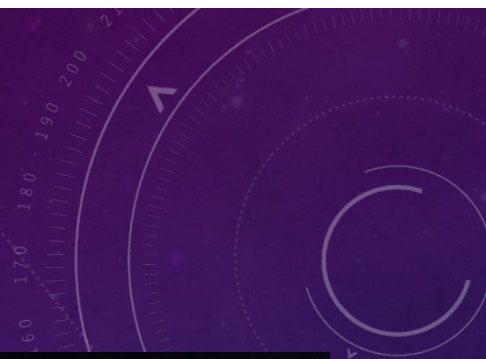


# CT

- HIGHER BONE DETAIL
- + SOFT TISSUE
- MULTIPLANAR RECONS
- 3-D RECONS
- WINDOWING
- MORE EXPENSIVE
- MORE RADIATION (concern with children and pregnancy)
- Longer study

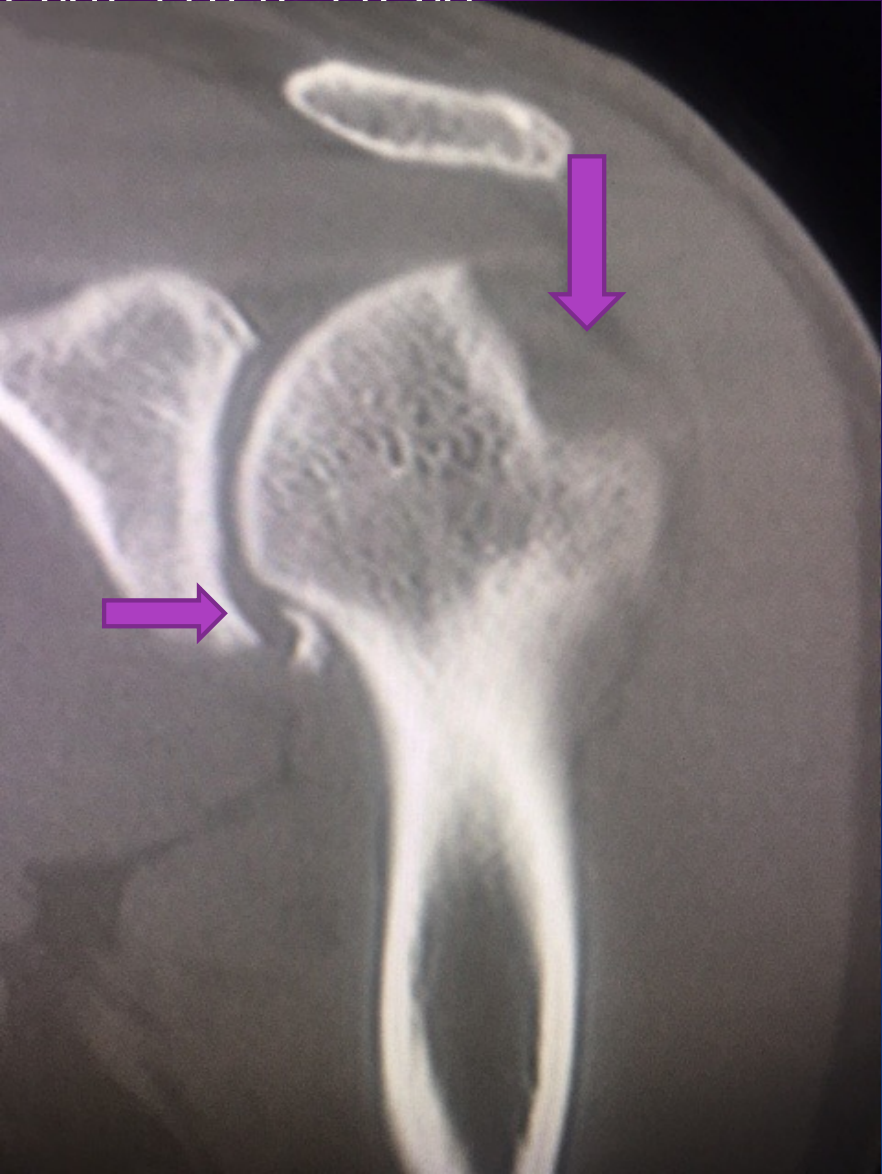


CF

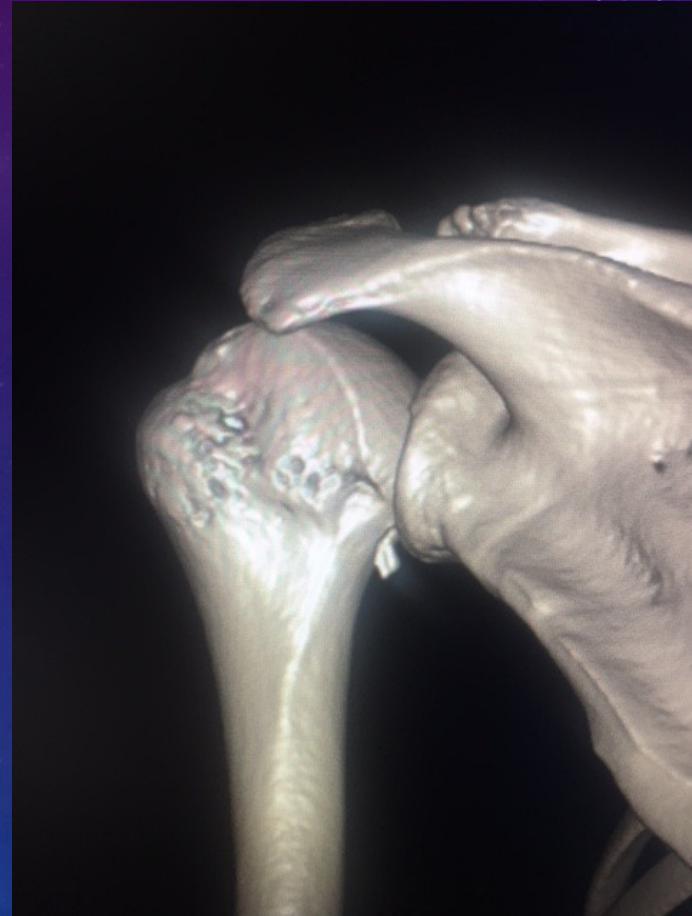


0.6 0.8

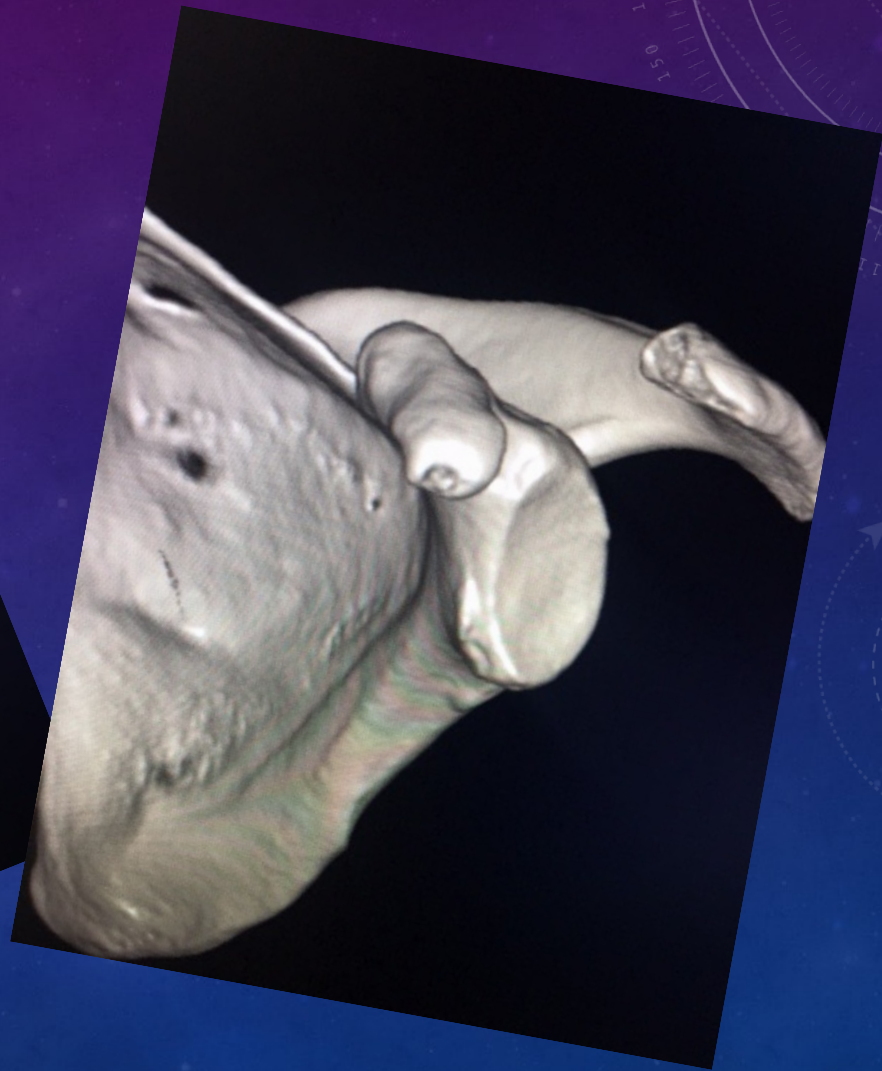
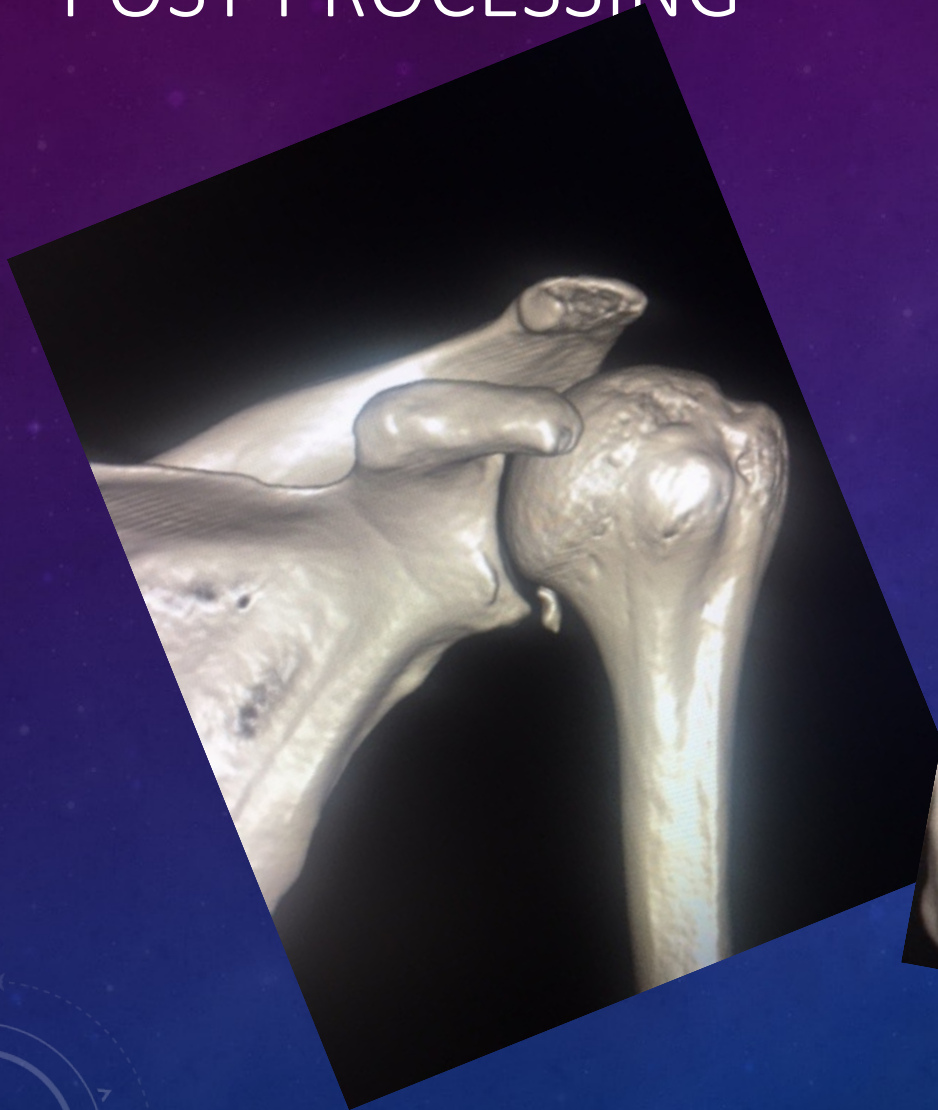
# CORONAL RECONSTRUCTION



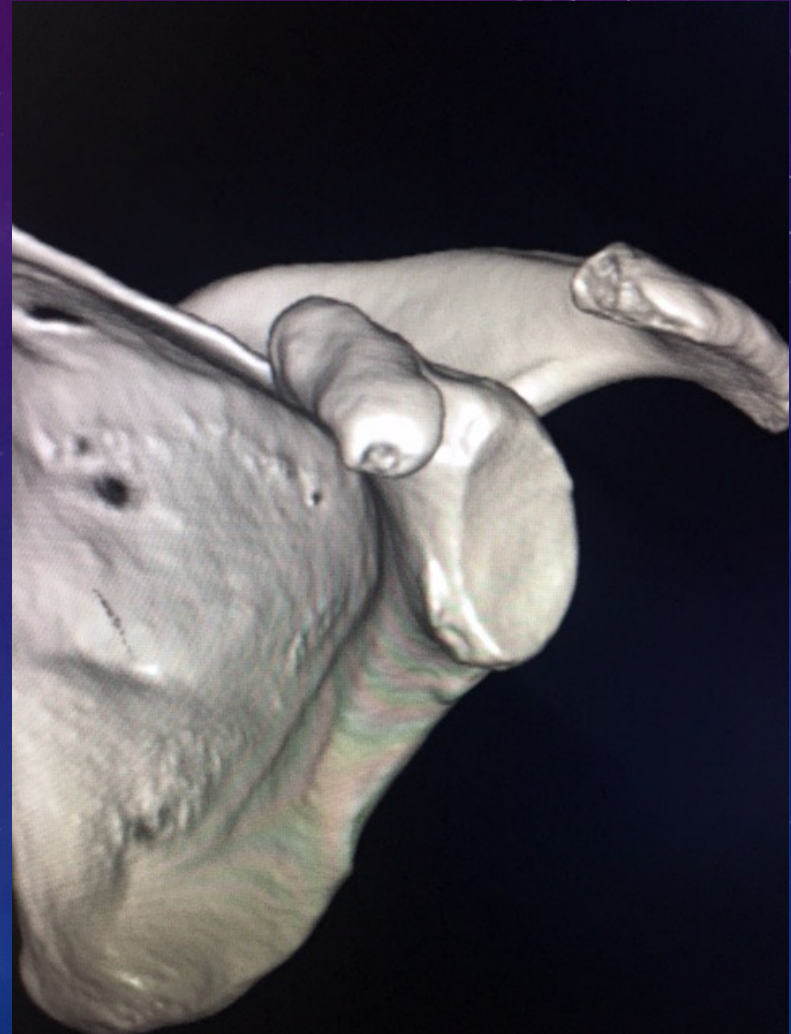
# 3D RECONSTRUCTIONS



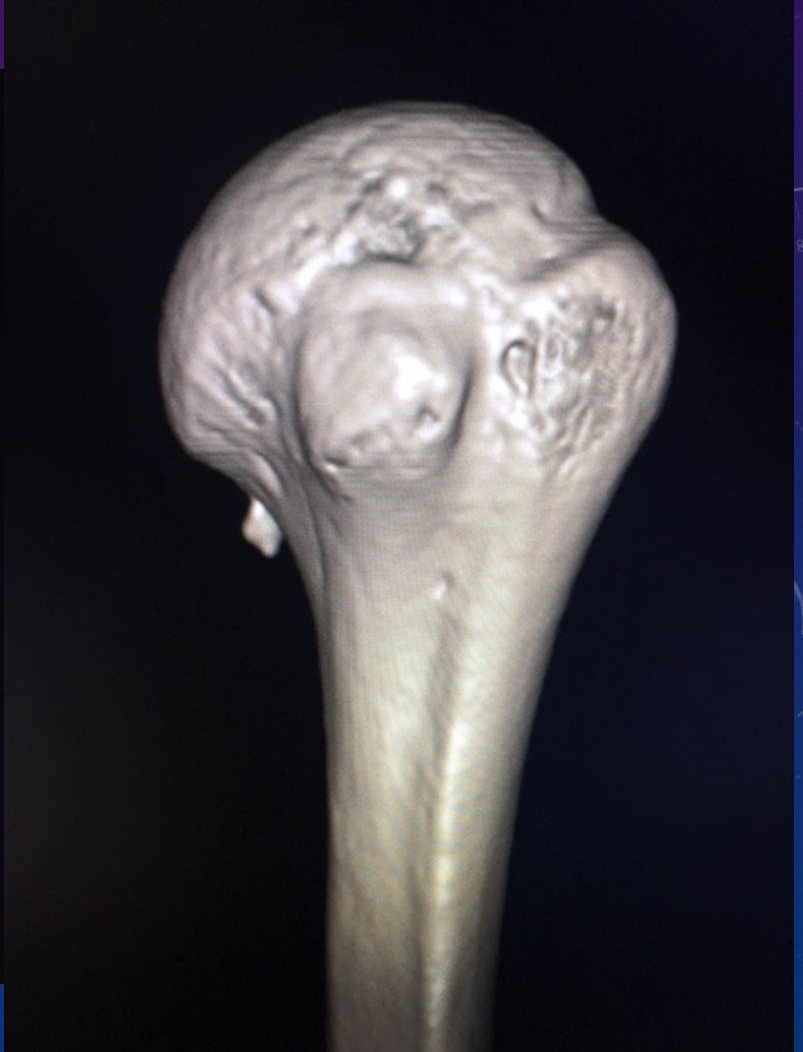
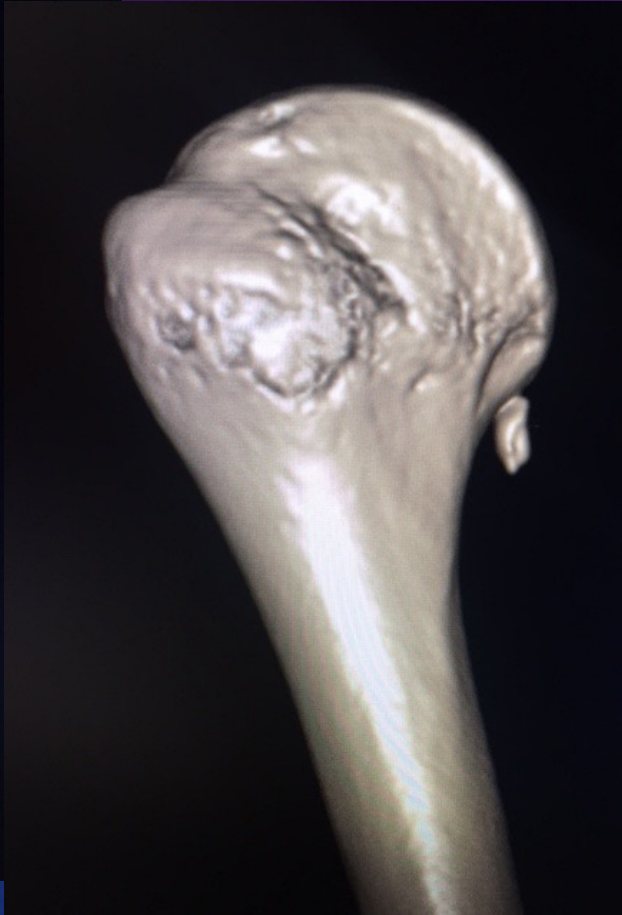
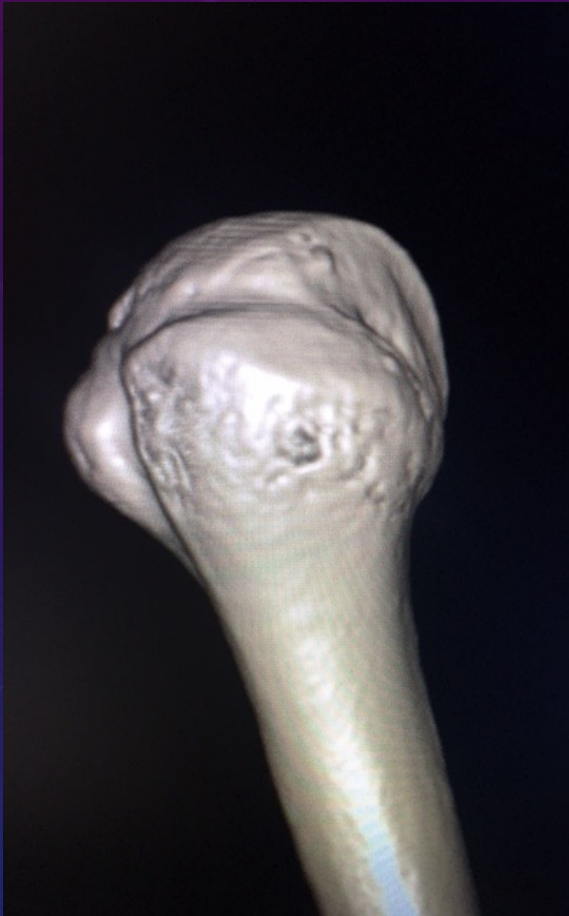
# POST-PROCESSING



# MANIPULATE



ROTATE



The background is a dark blue gradient with a starry texture. On the left side, there are several overlapping circular elements. A prominent feature is a scale with numerical markings from 160 to 260 in increments of 10, arranged in a semi-circle. Other circles include dashed lines, solid lines, and arrows indicating clockwise or counter-clockwise rotation. The overall aesthetic is technical and futuristic.

MRI





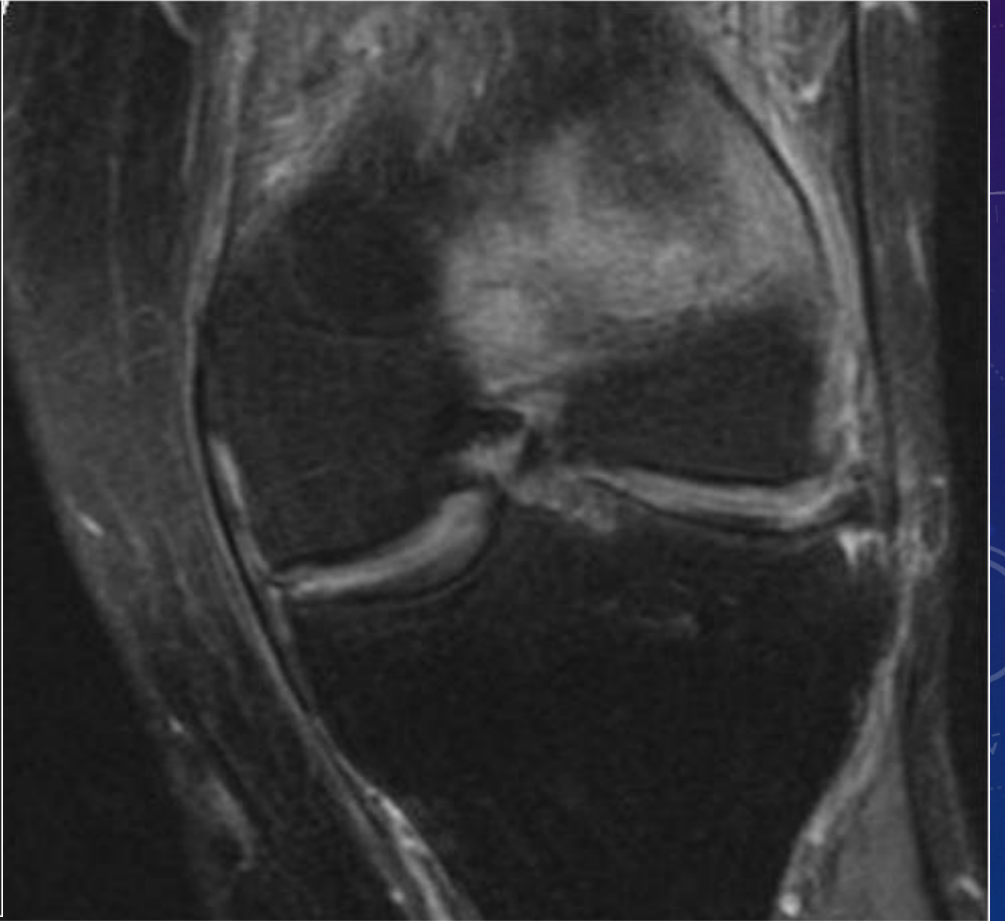
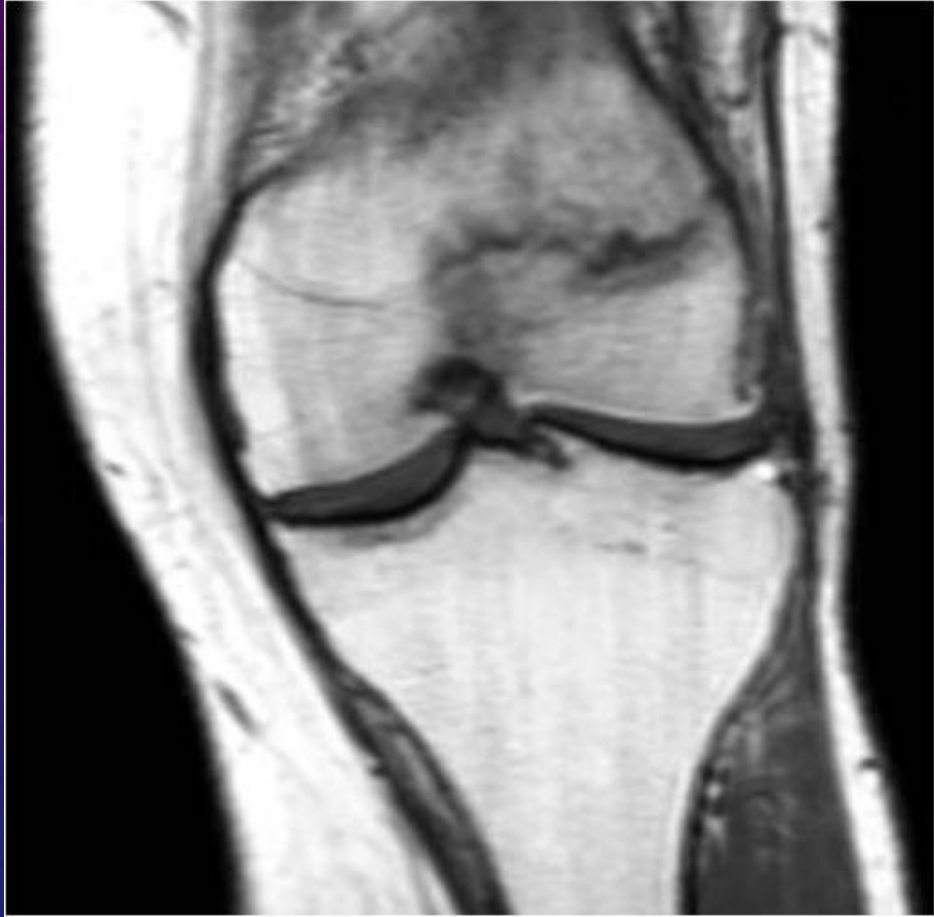
# MRI

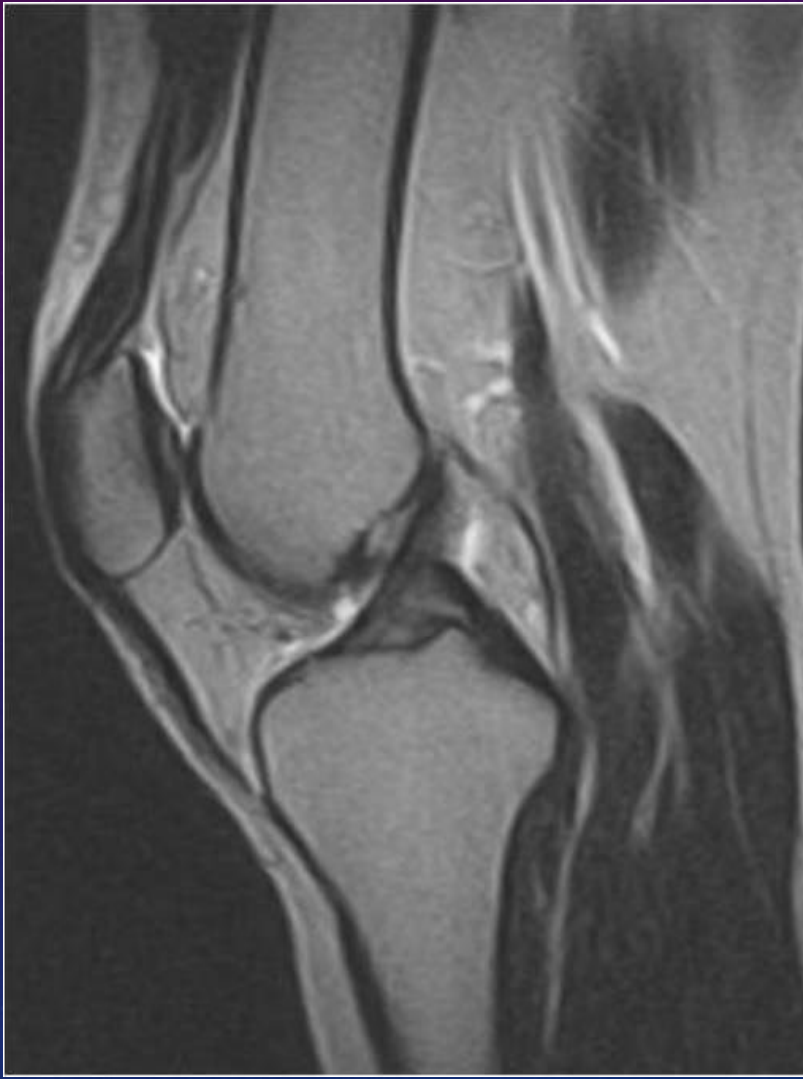
- SENSITIVE FOR BONE EDEMA / TUMOR
- SUPERIOR SOFT TISSUE IMAGES
- MULTIPLANAR (anatomy)
- CHARACTERIZE MASS (signal, +/- contrast)
- EXPENSIVE
- LONGER TEST (claustrophobia)
- MAY NEED SEDATION
- PATIENTS MUST BE CLEARED
- IMPLANTED DEVICES

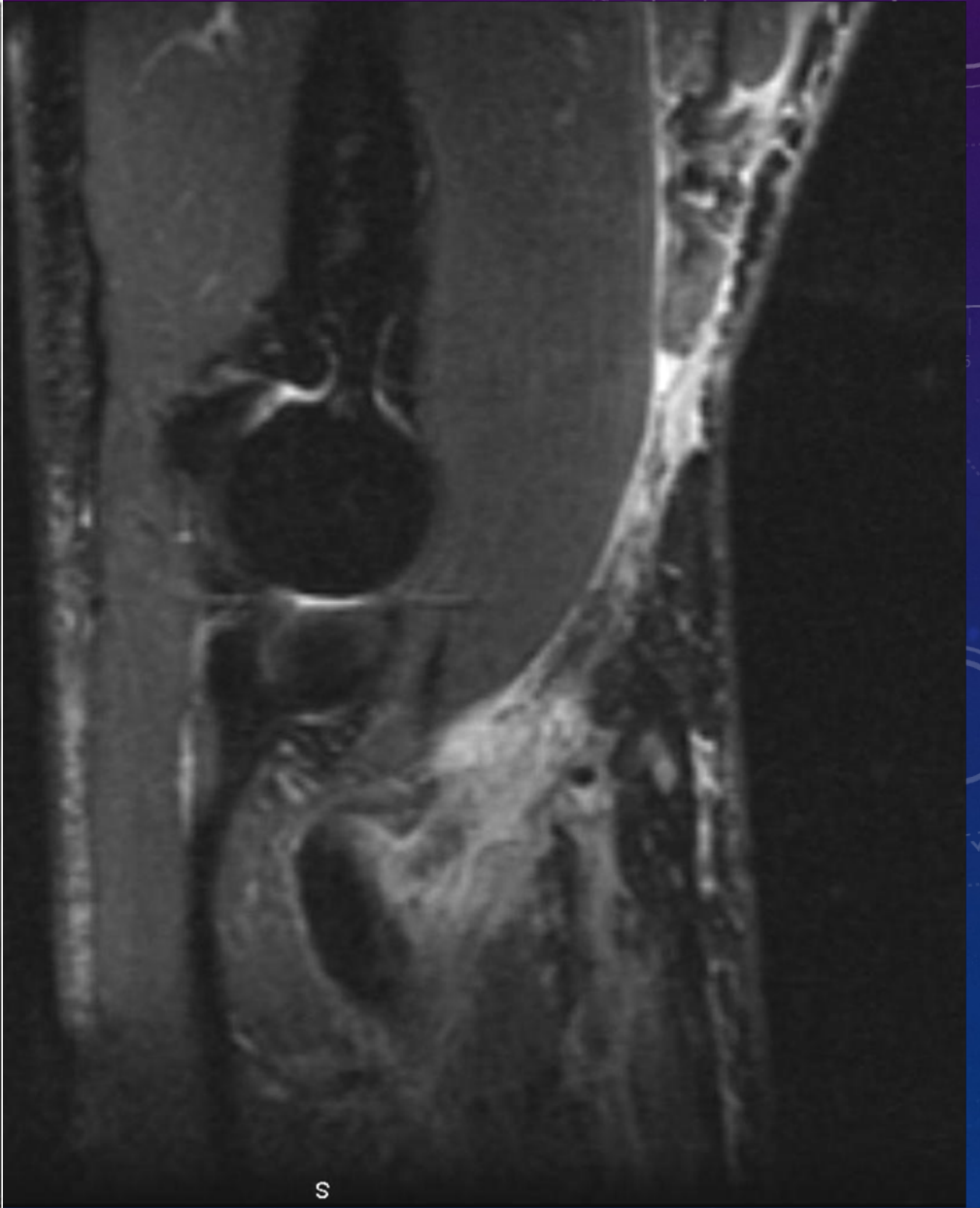
# MRI CONTRAINDICATIONS

- BRAIN ANEURYSM CLIPS
- CARDIAC PACEMAKERS
- COCHLEAR IMPLANTS
- MOST BODY PIERCINGS
- MANY STIMULATORS AND PROGRAMMABLE DEVICES





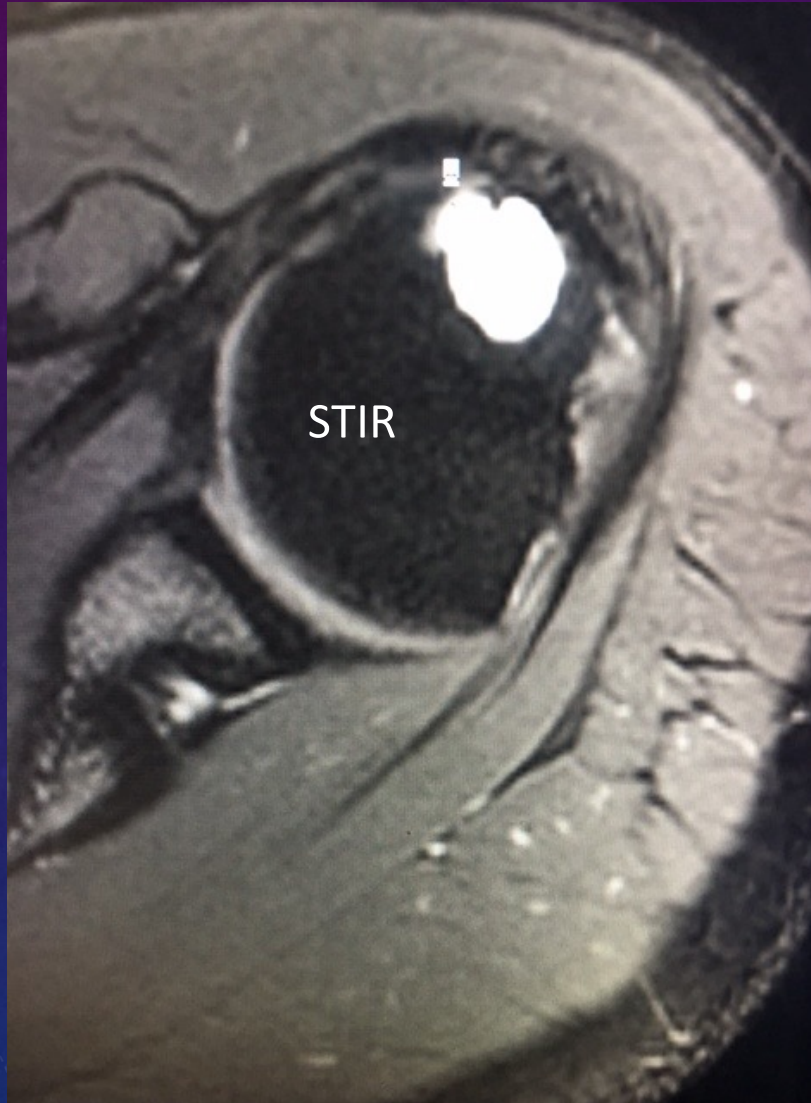


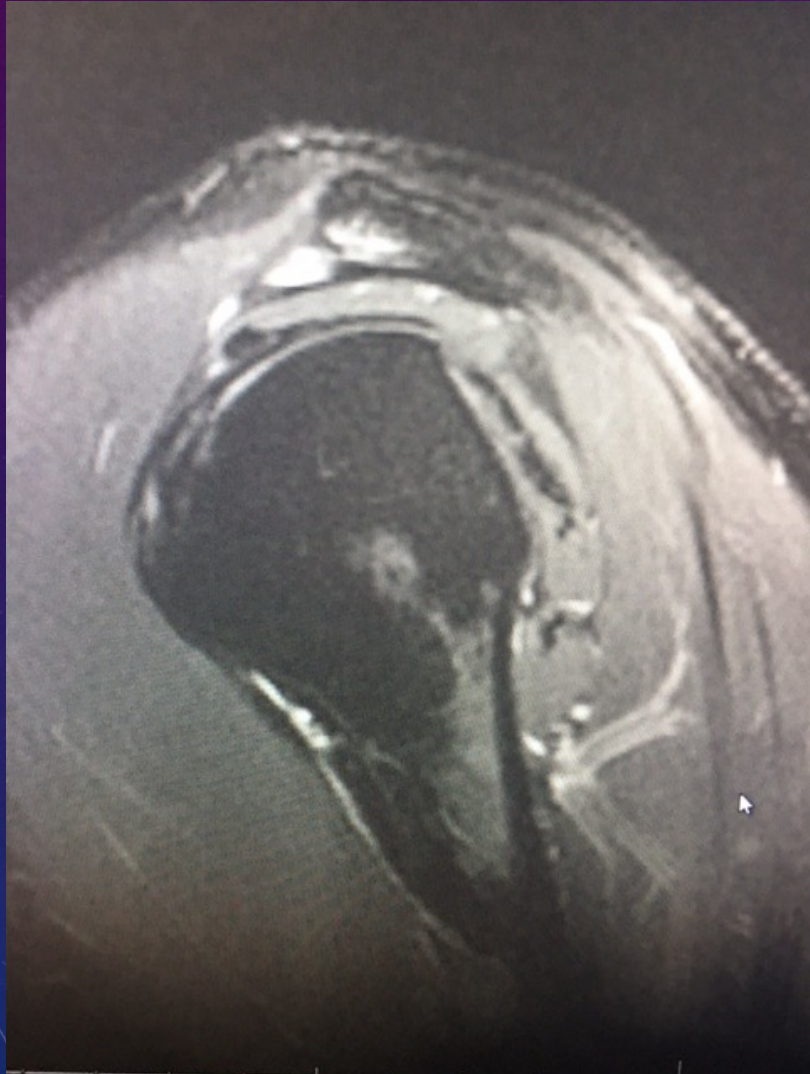




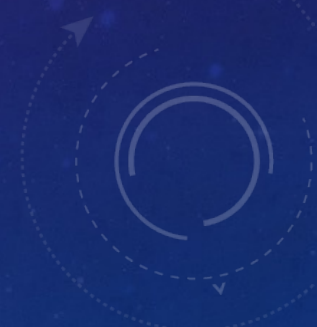
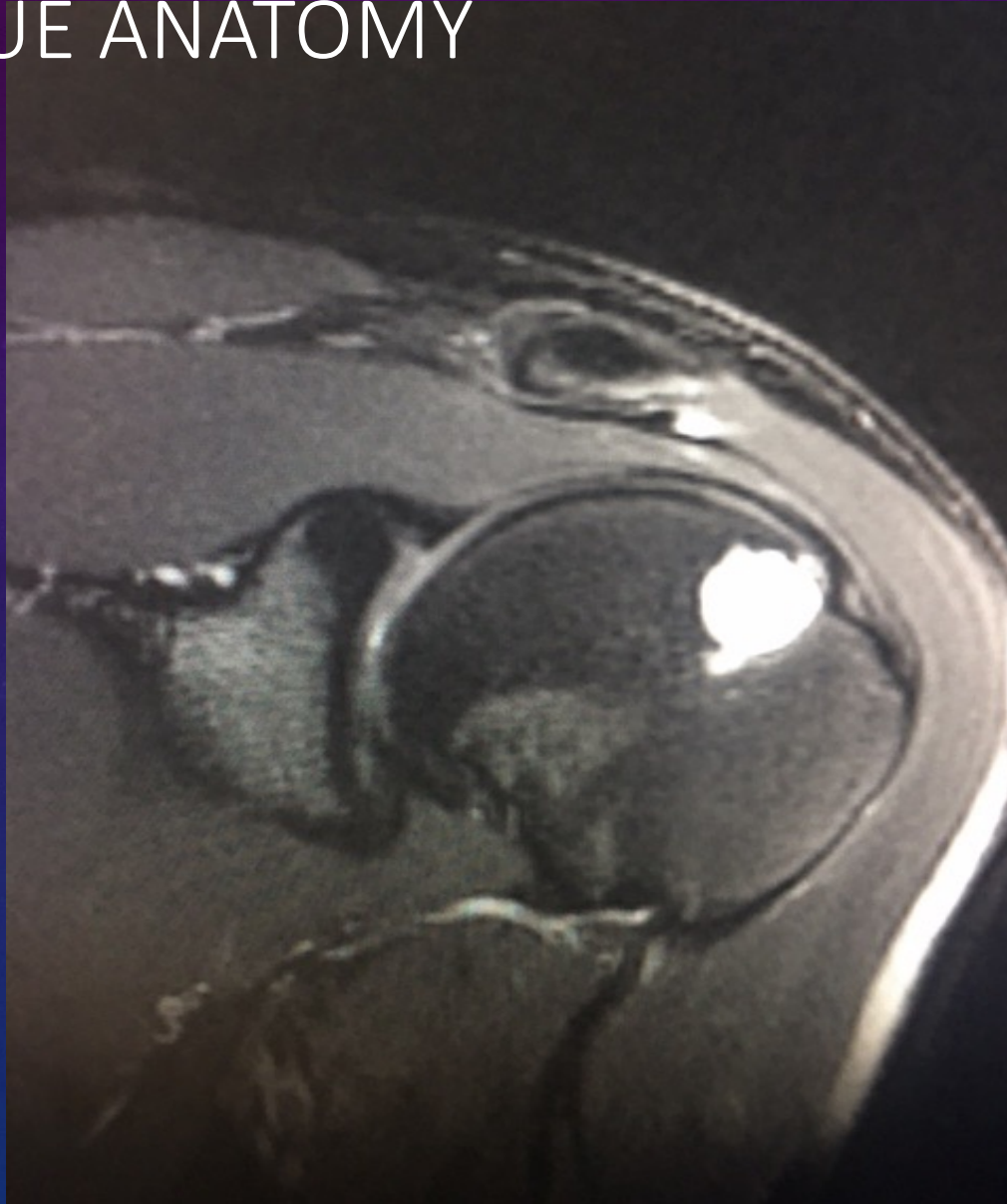


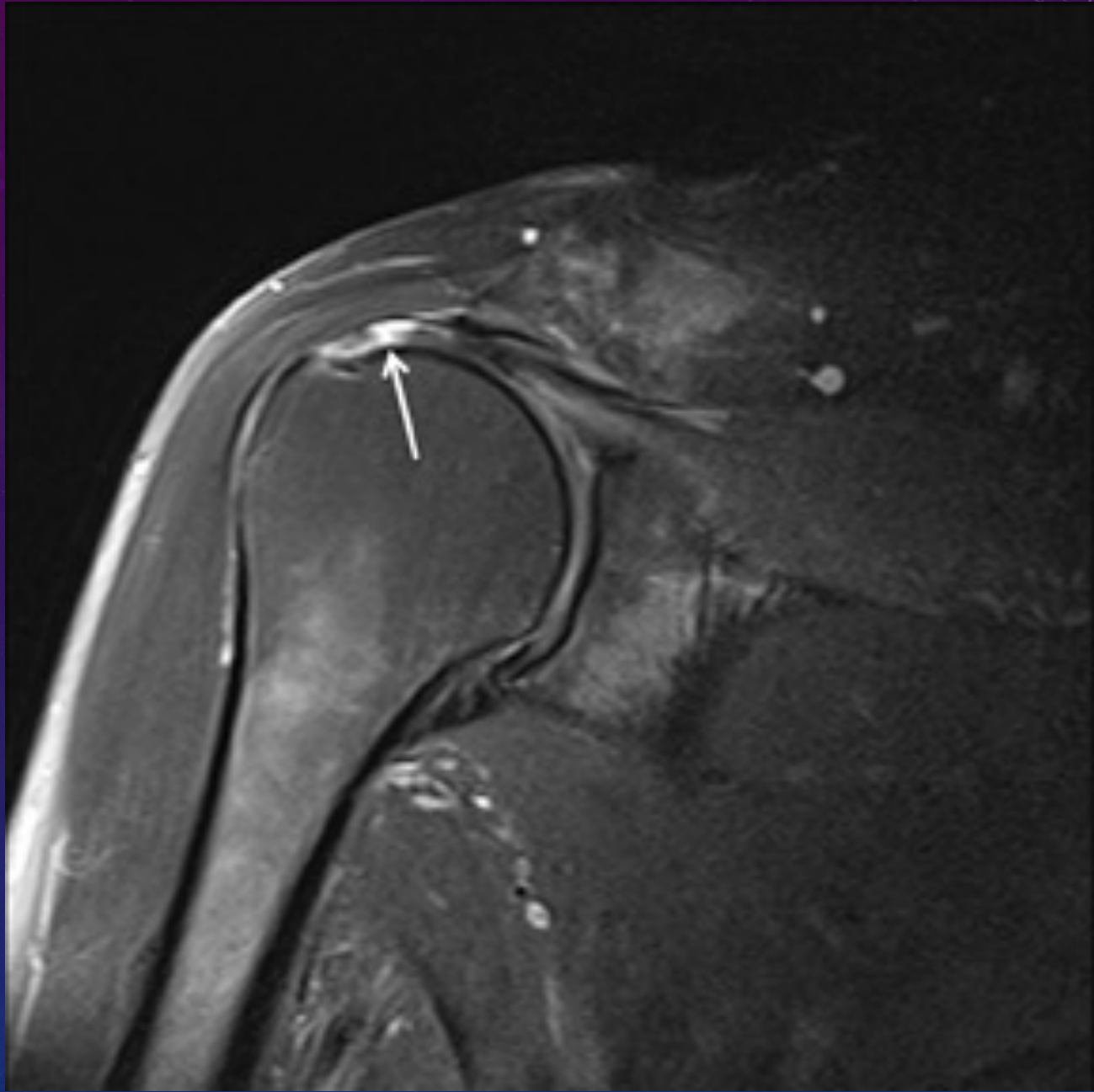
# MULTIPLE PLANES/SEQUENCES





# SOFT TISSUE ANATOMY



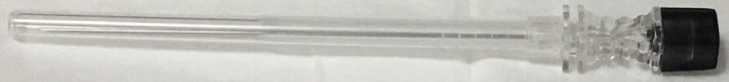
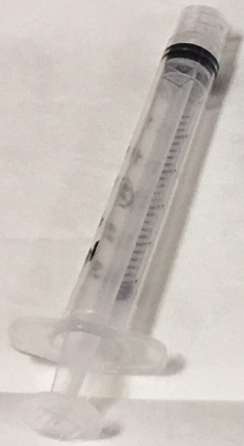


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# MR ARTHROGRAPHY

# MRA (ARTHROGRAPHY)

- SUPERIOR FOR SUBTLE TEARS
- POST OPERATIVE JOINTS
- PARTIAL THICKNESS TEARS
- CONTRAST EXTENDS INTO THE TEAR
- INJECTION INTO THE JOINT
- PATIENT FEAR /PAIN
- MORE EXPENSIVE
- INCREASED TIME

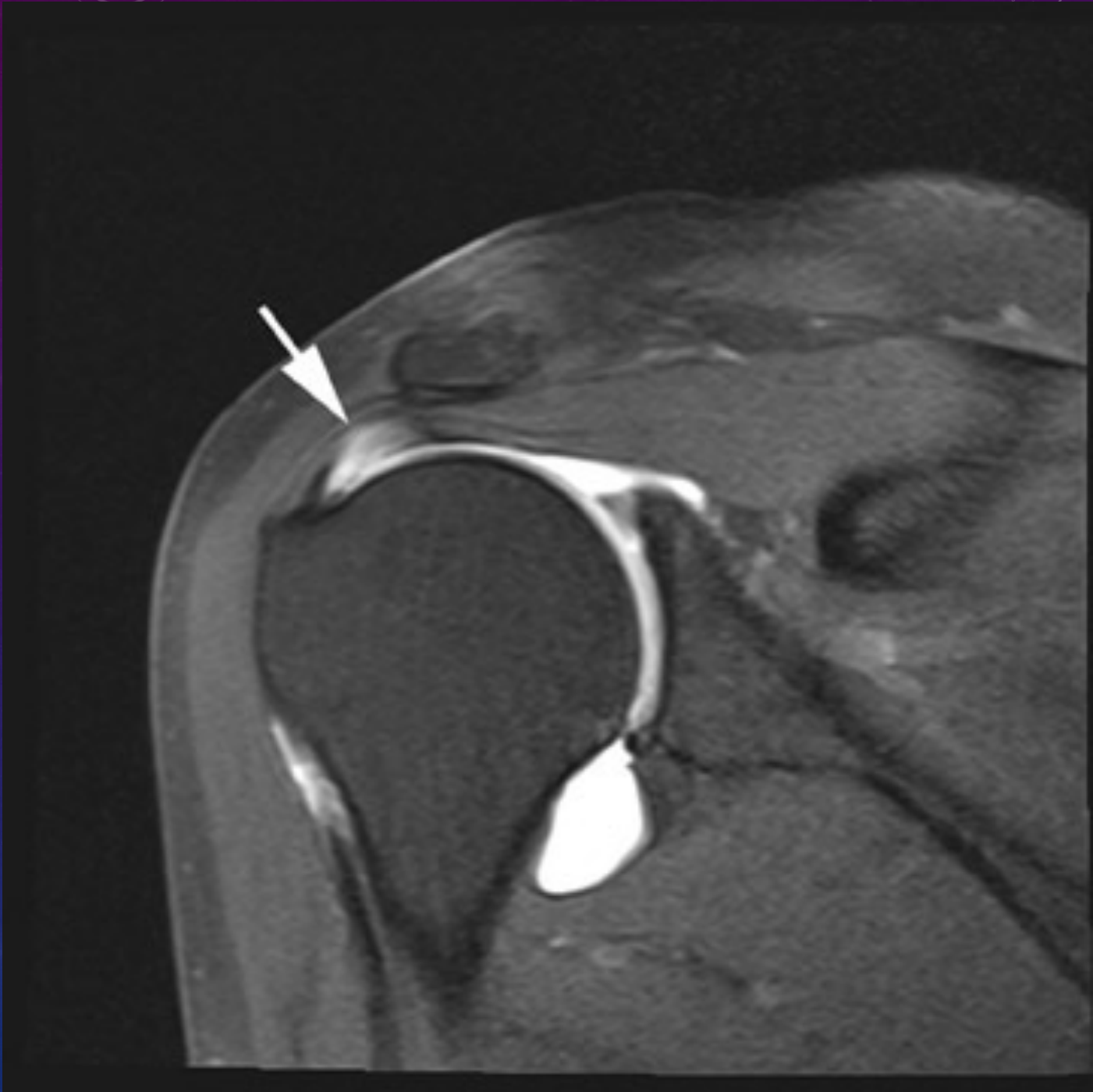


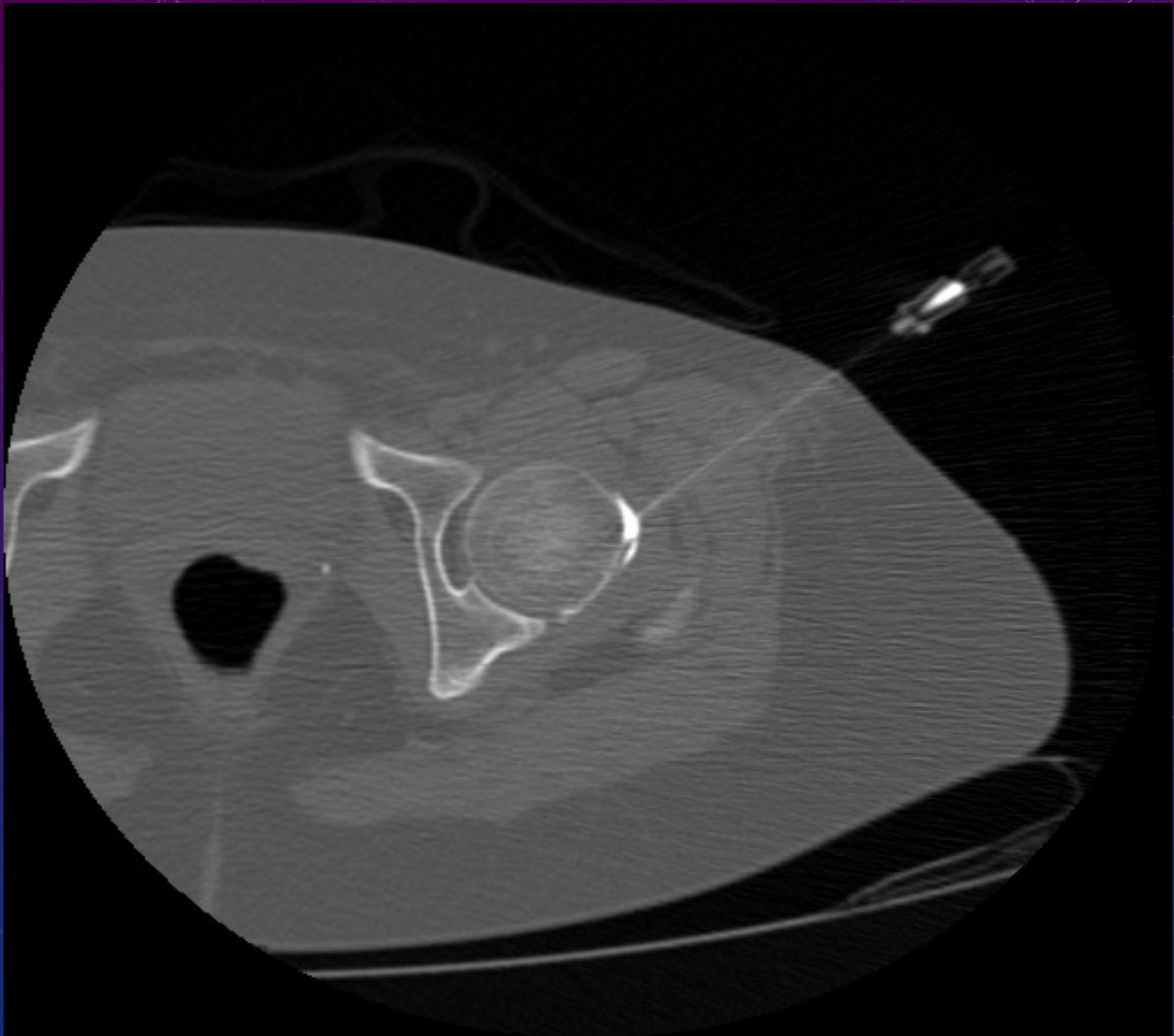














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# COST

- X-RAY SHOULDER: \$24-\$33
- CAT SCAN SHOULDER: \$180--\$220
- MRI SHOULDER: \$345--\$425
- MR ARTHROGRAM: \$500--\$775



THE END

