

# Calcific Tendinopathy Lavage

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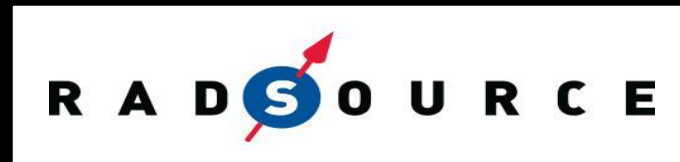
Madison, Wisconsin

Kirkland W. Davis, MD

University of Virginia

Charlottesville, Virginia

Jason W. Stephenson, MD



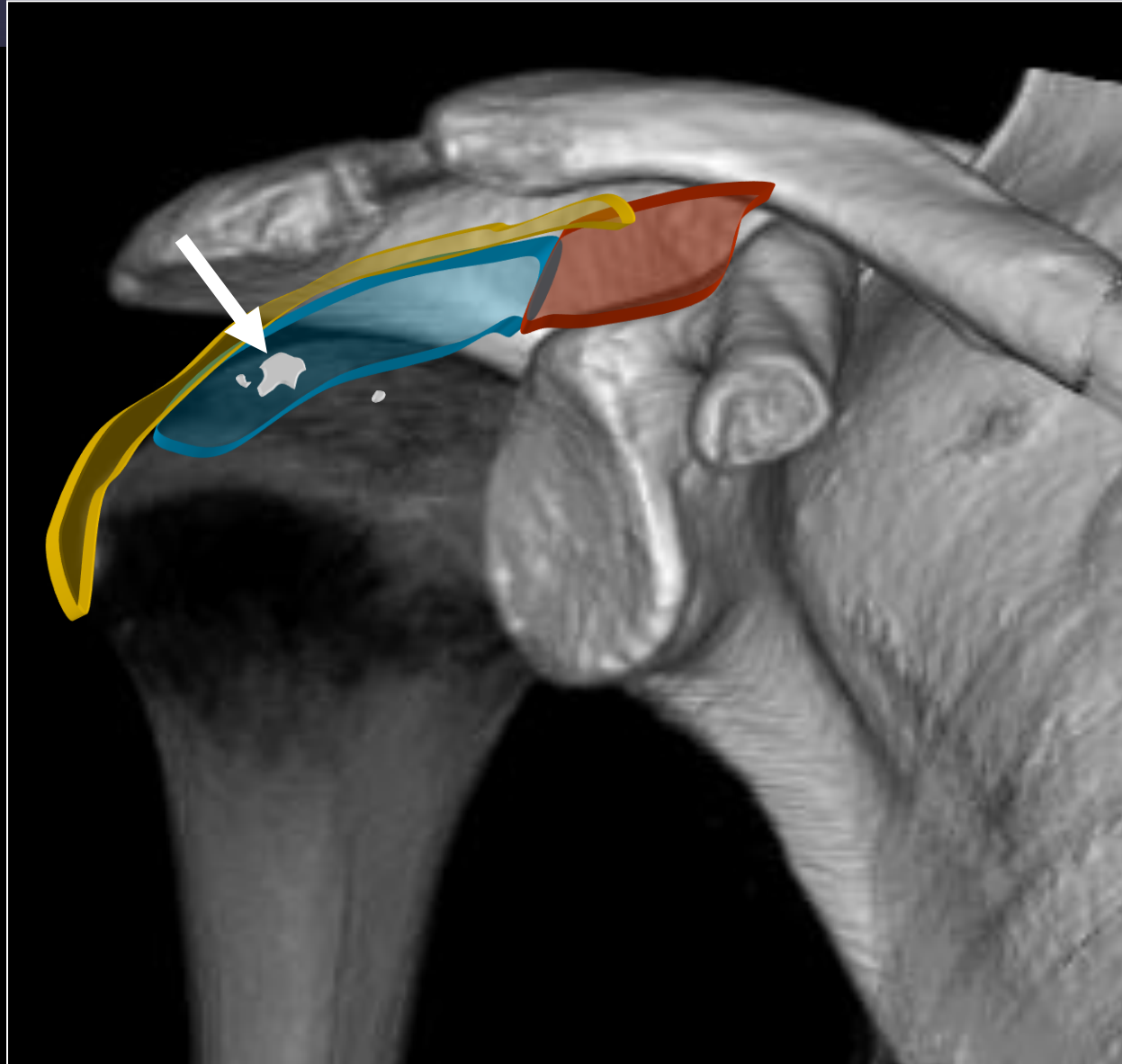
# Disclosures

- None

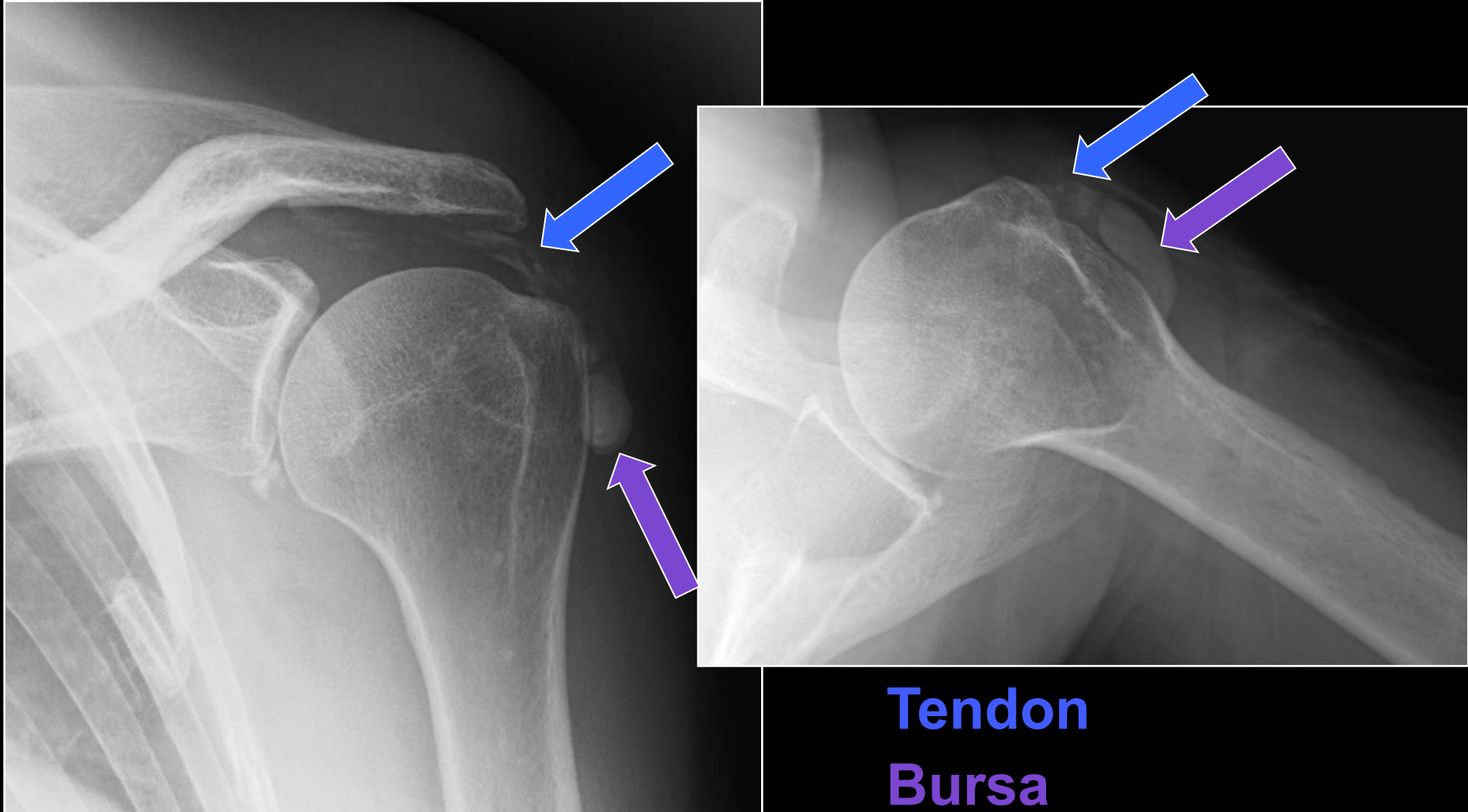
# Pathophysiology

- A.k.a., hydroxyapatite deposition disease: HADD
- Typically isolated and idiopathic deposition of hydroxyapatite crystals within tendon substance
- May be within a bursa or joint capsule (“calcific peri-arthritis”)
- Deposition is usually silent and may remain asymptomatic
- Loose HA in tissues elicits an inflammatory reaction
- Symptoms resolve with disruption of collection (resorptive phase)

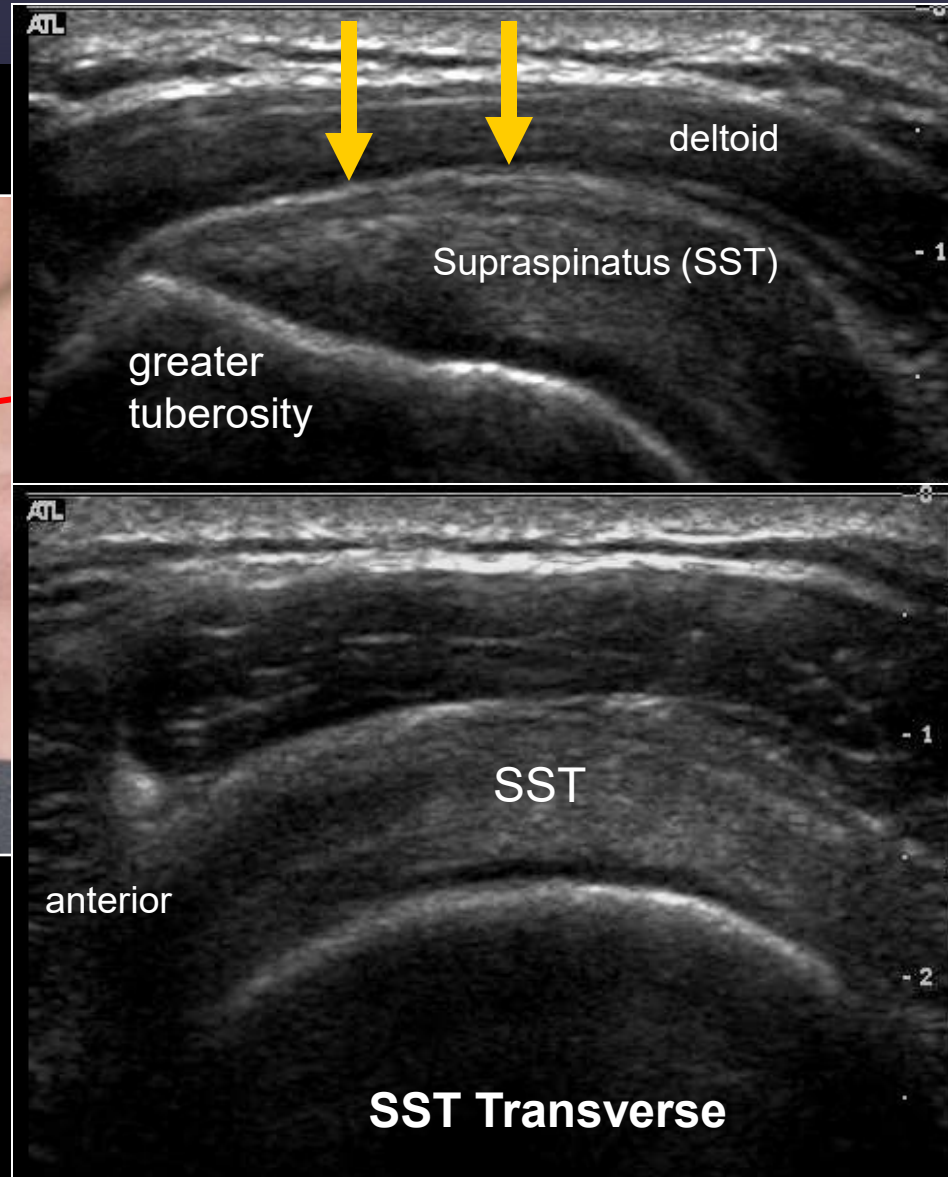
# Shoulder anatomy with calcium deposit



# Shoulder: Calcific tendinitis



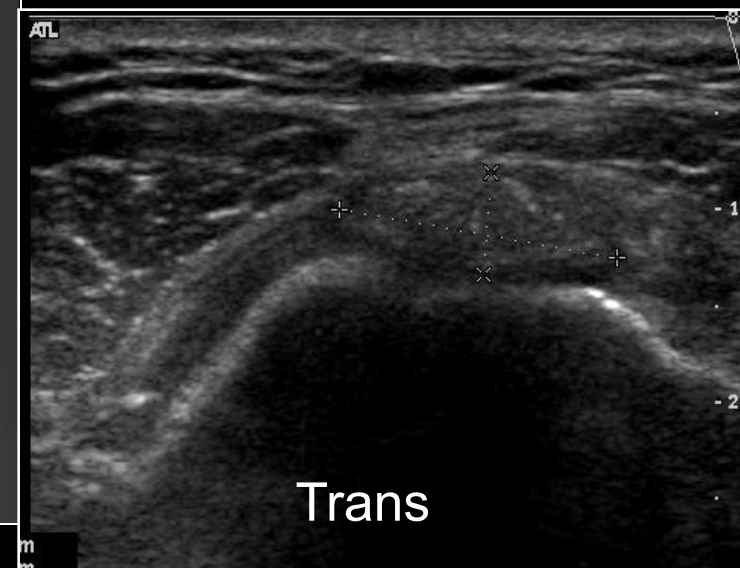
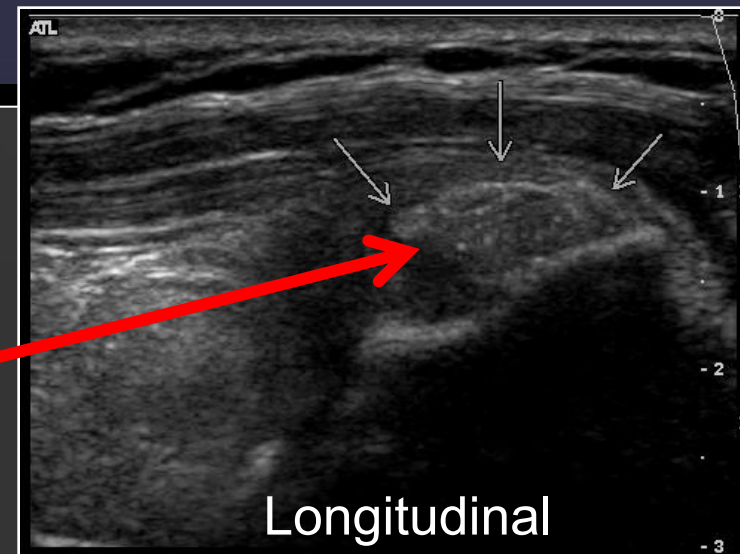
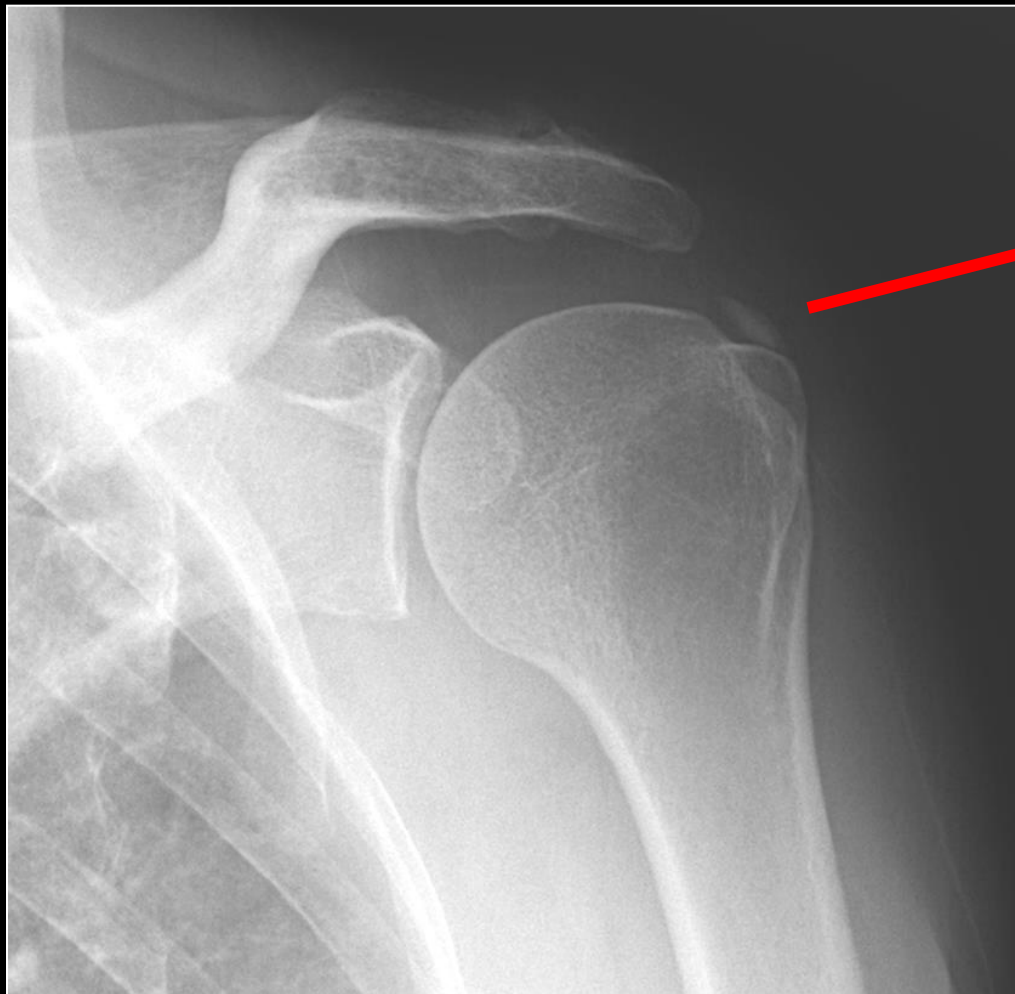
# US of normal rotator cuff



Courtesy of Dr. Ken Lee



# Calcific tendinitis



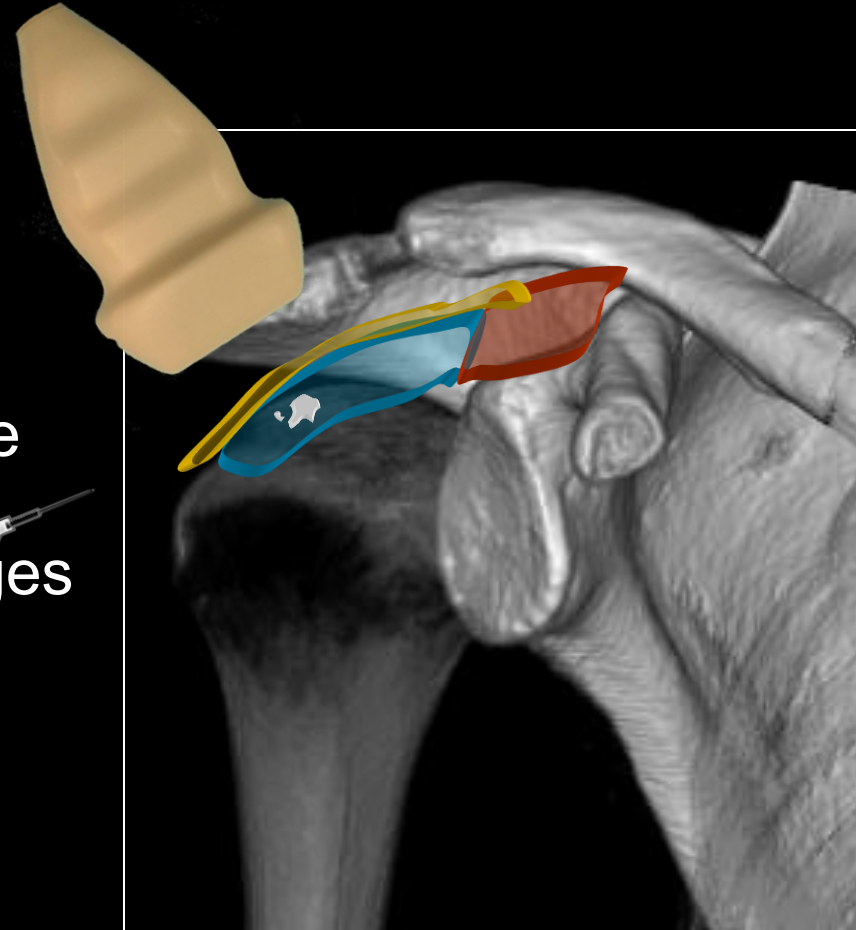
# Protocol: Lavage

Sterilization technique

Local anesthesia

Real-time US guidance

1. 18-gauge, 1.5 inch needle placement
2. Lavage with 10 mL syringes of equal parts:  
1% lidocaine and saline
3. Fenestration
4. Inject steroid solution into subacromial-subdeltoid (SASD) bursa
  - Average time: 10 min.

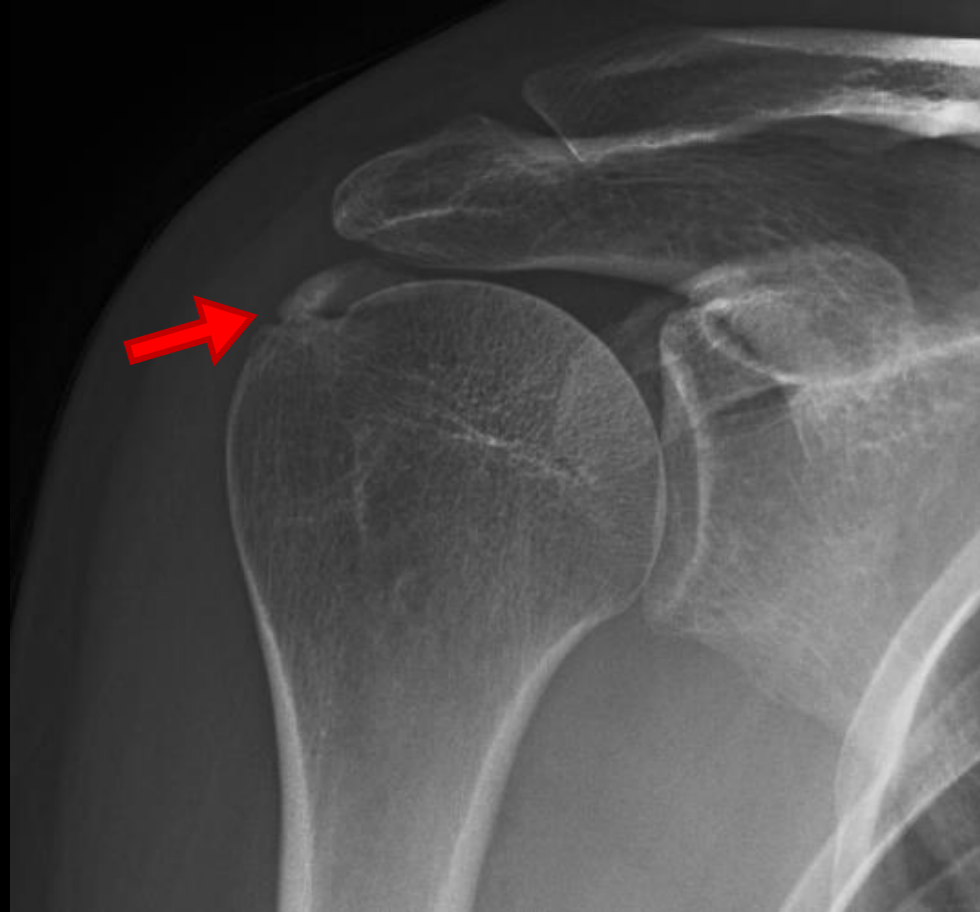




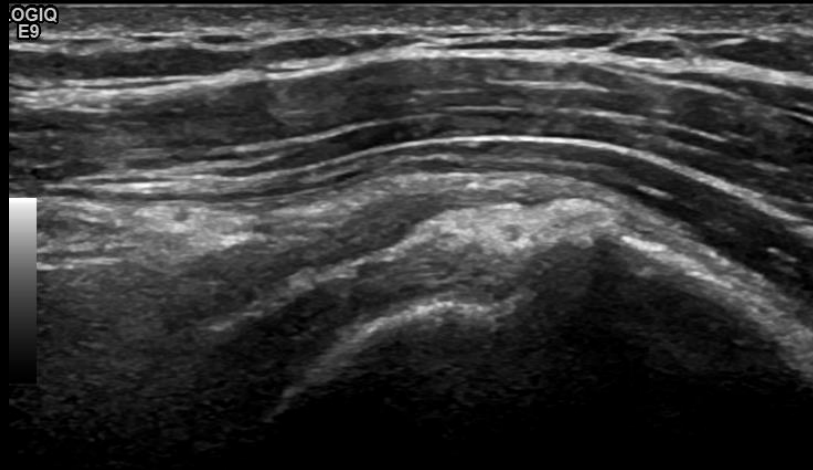
## Patient positioning:



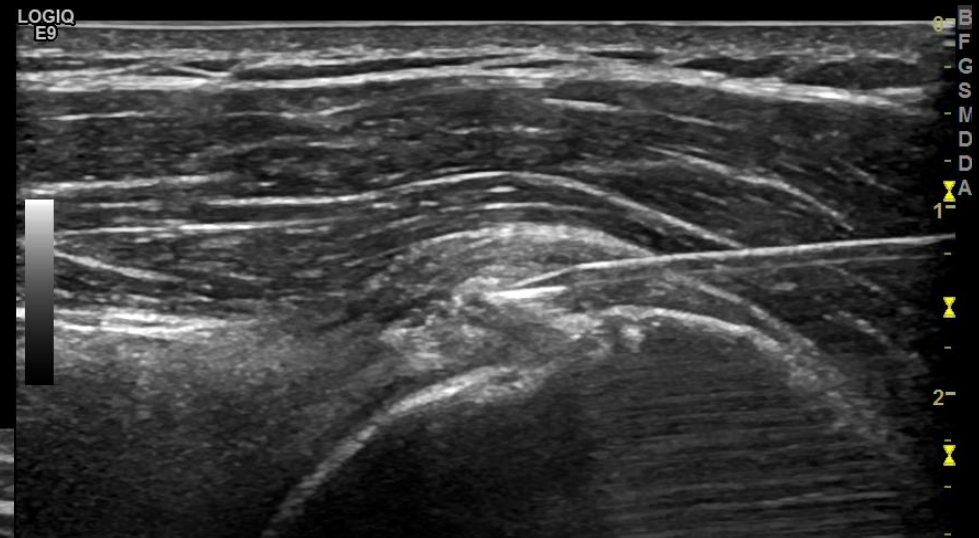
# Case



# Lavage technique



RIGHT LONG AXIS SUPRASPINATUS TENDON



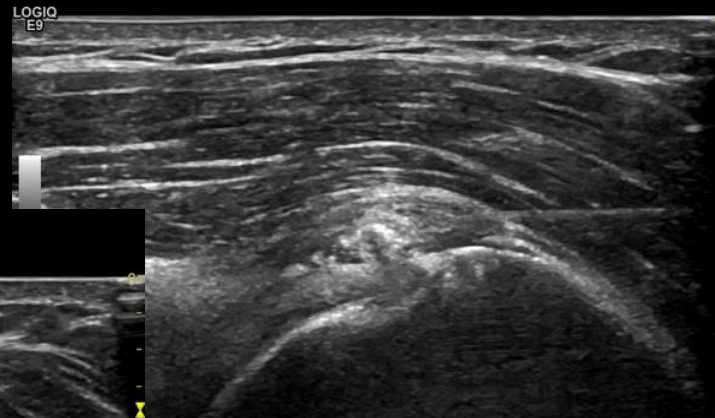
RIGHT SHORT AXIS SUPRASPINATUS TENDON LAVAGE

1 AC  
-  
-  
-  
2-  
-  
-  
3-

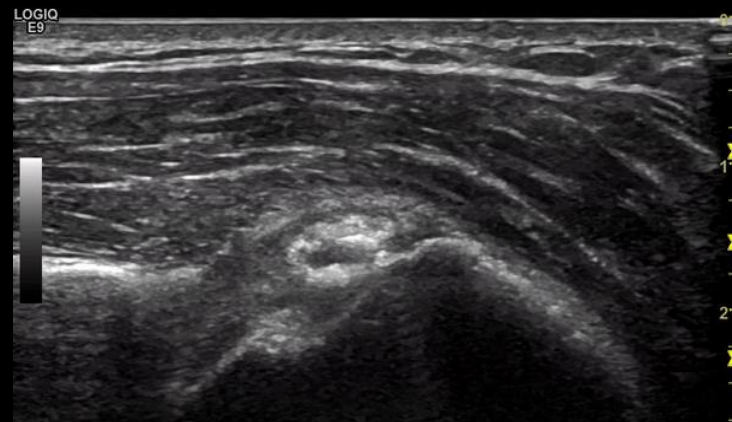
# Lavage technique



LONGITUDINAL SUPRASPINATUS TENDON LAVAGE



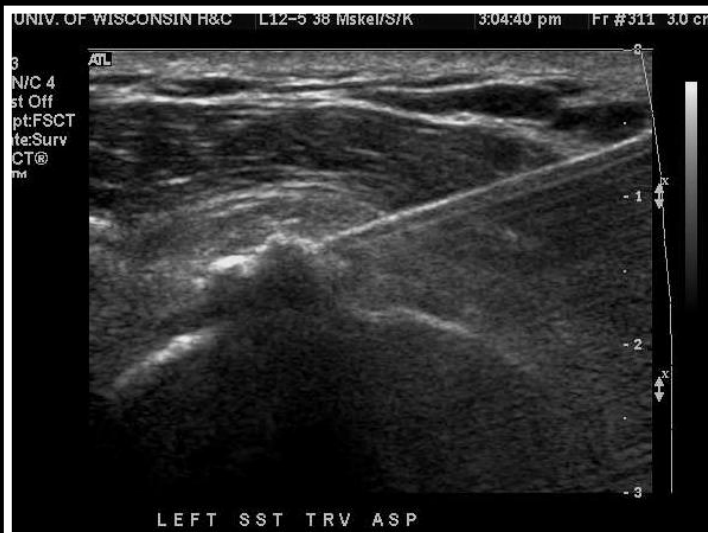
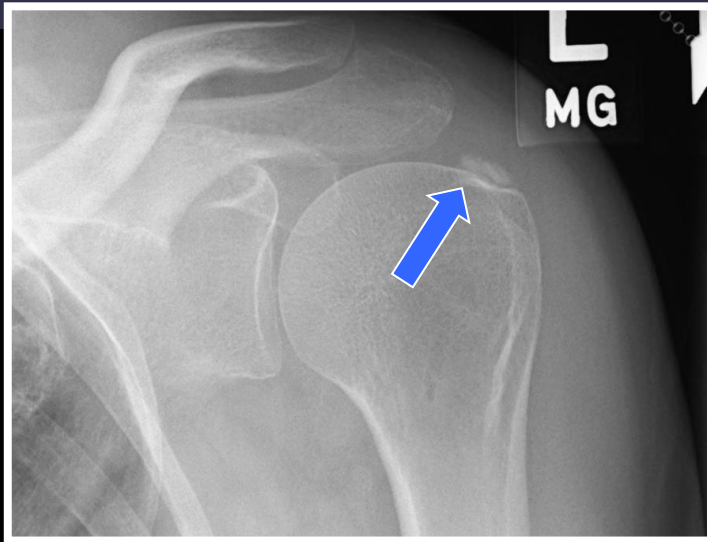
SHORT AXIS SUPRASPINATUS TENDON LAVAGE



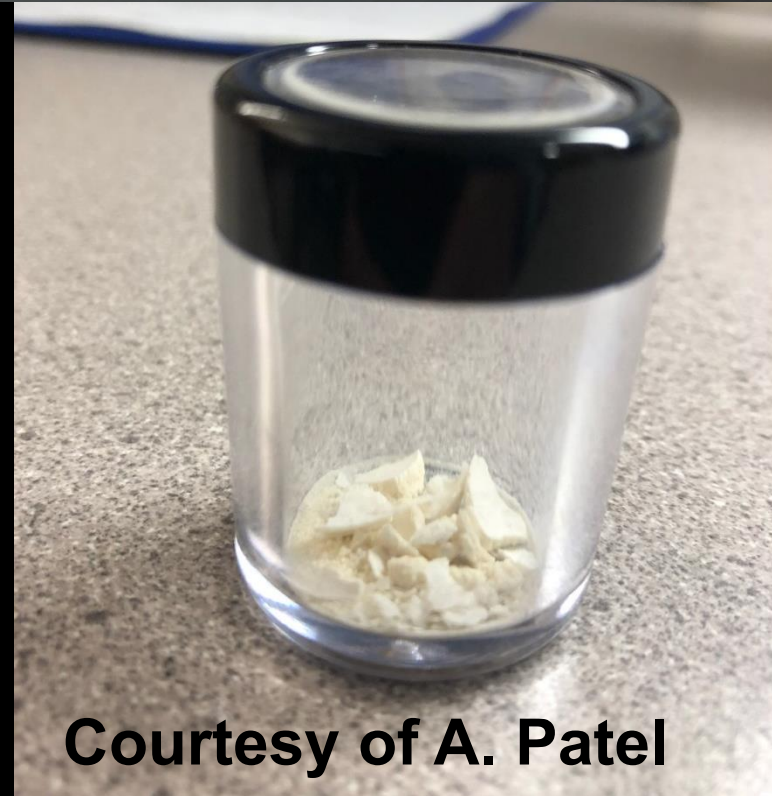
RIGHT SHORT AXIS SUPRASPINATUS TENDON LAVAGE



# Lavage technique



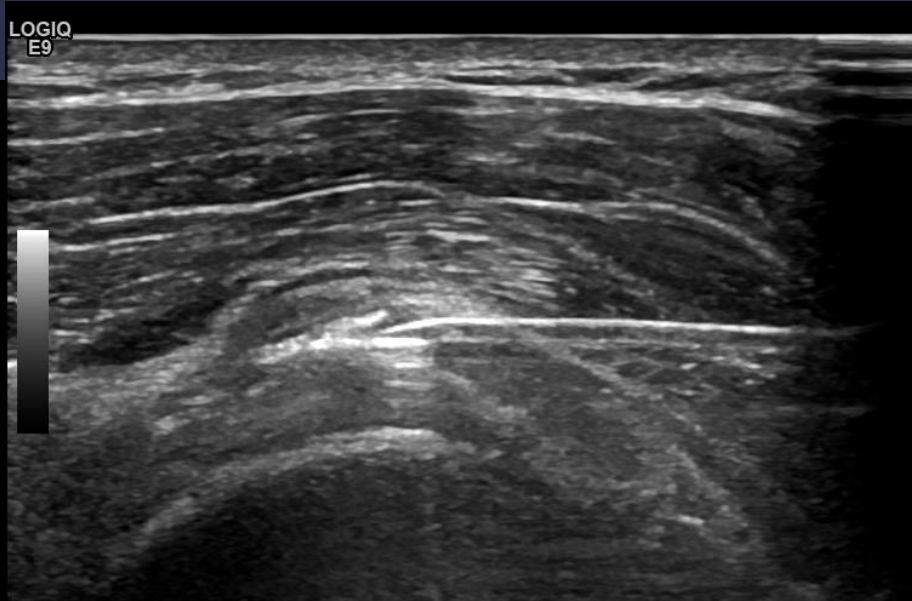
# Aspirated calcium crystals



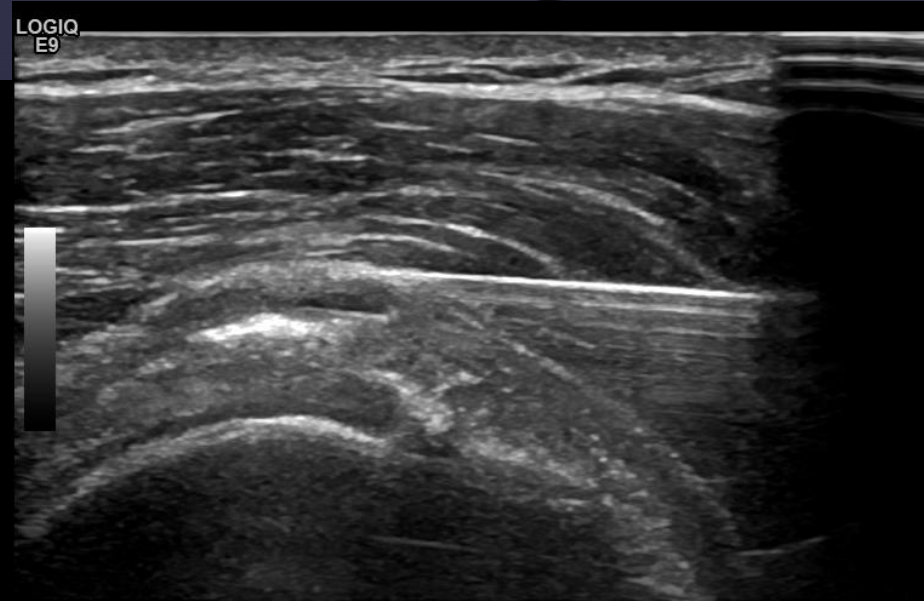
Courtesy of A. Patel



# Subacromial subdeltoid injection

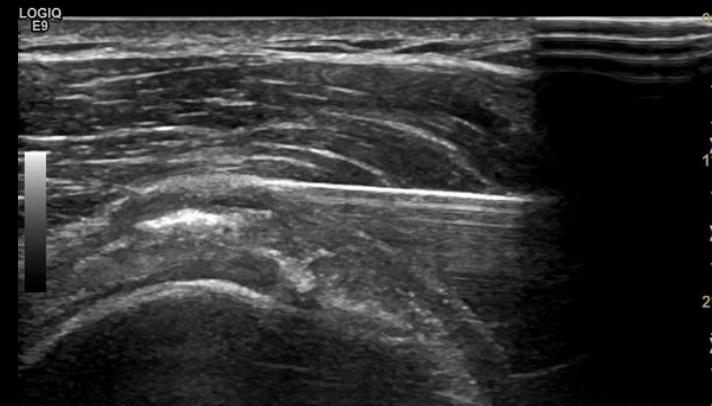


RIGHT SHORT AXIS SUPRASPINATUS TENDON LAVAGE



RIGHT SHORT AXIS SUPRASPINATUS TENDON INJ SA/SD

1 mL Kenalog 40  
1 mL 0.5% Ropivacaine  
1 mL 1% Lidocaine



RIGHT SHORT AXIS SUPRASPINATUS TENDON INJ SA/SD

# Post-procedure protocol

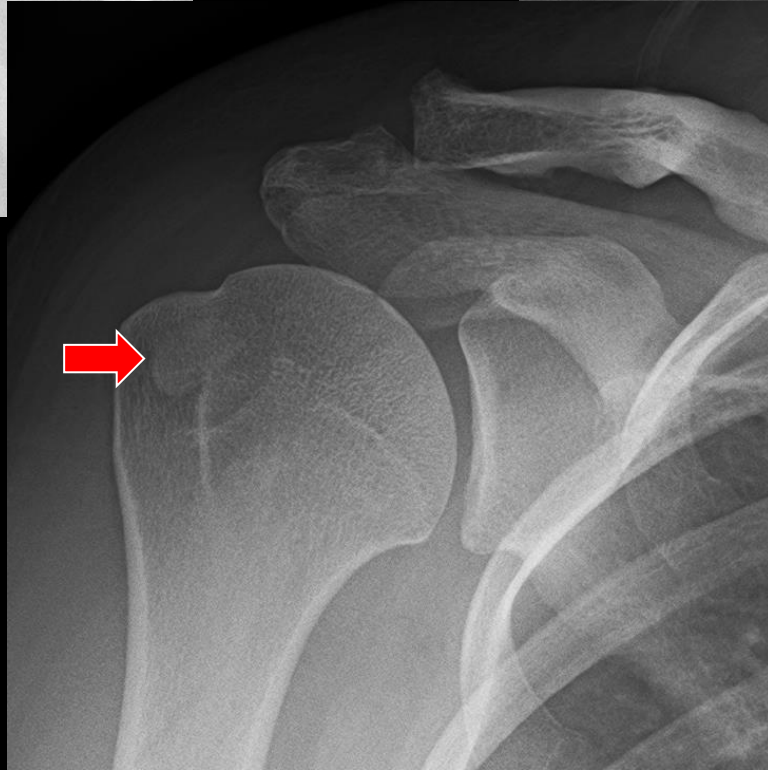
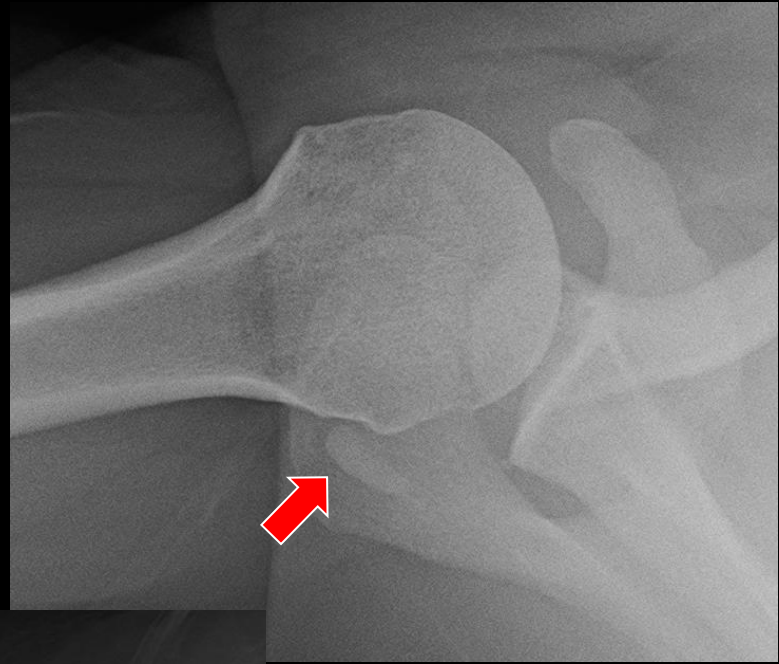
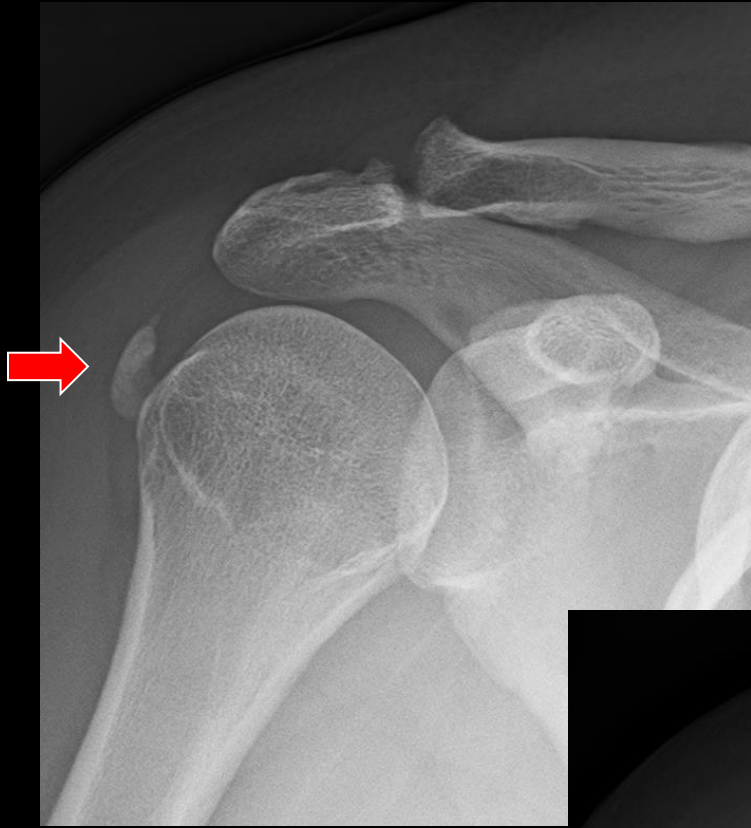
- Rest day of procedure
- NSAIDs after procedure
- Avoid heavy lifting or pulling with affected side
- Pain survey

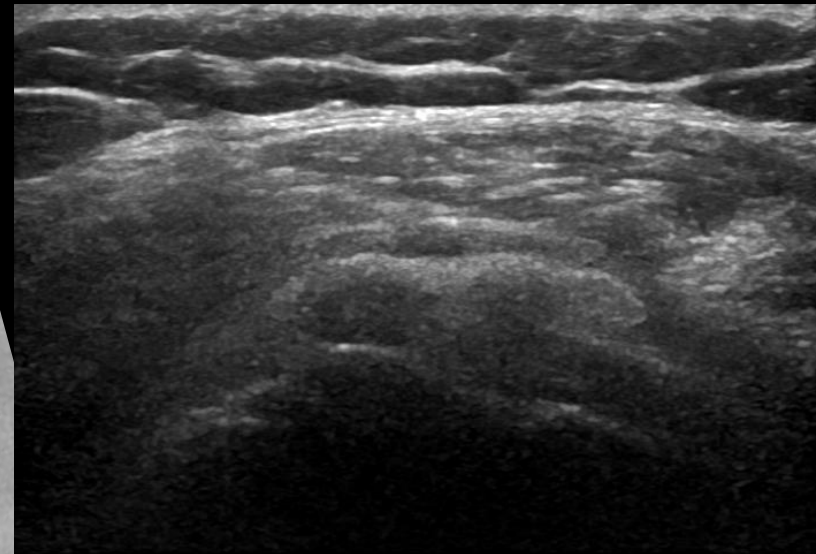
# Calcific tendinitis lavage: Results

- Usually complete or near complete improvement (91%)
  - ↓ pain
  - ↓ disability
  - ↑ ROM
- Transient recurrence is possible (44.3%)
- Radiographic resolution is common (89%)

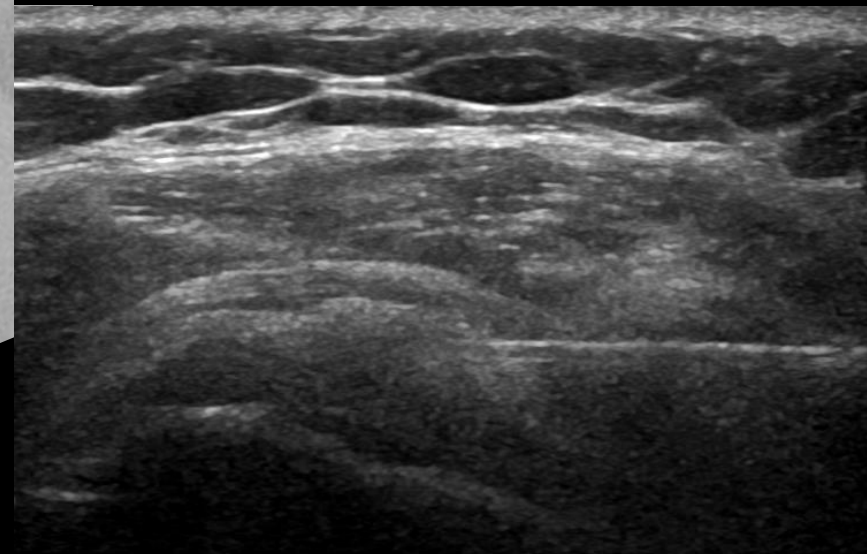
# Case

- 49 year-old woman with progressive, intense right shoulder pain.
- No relief with NSAIDS





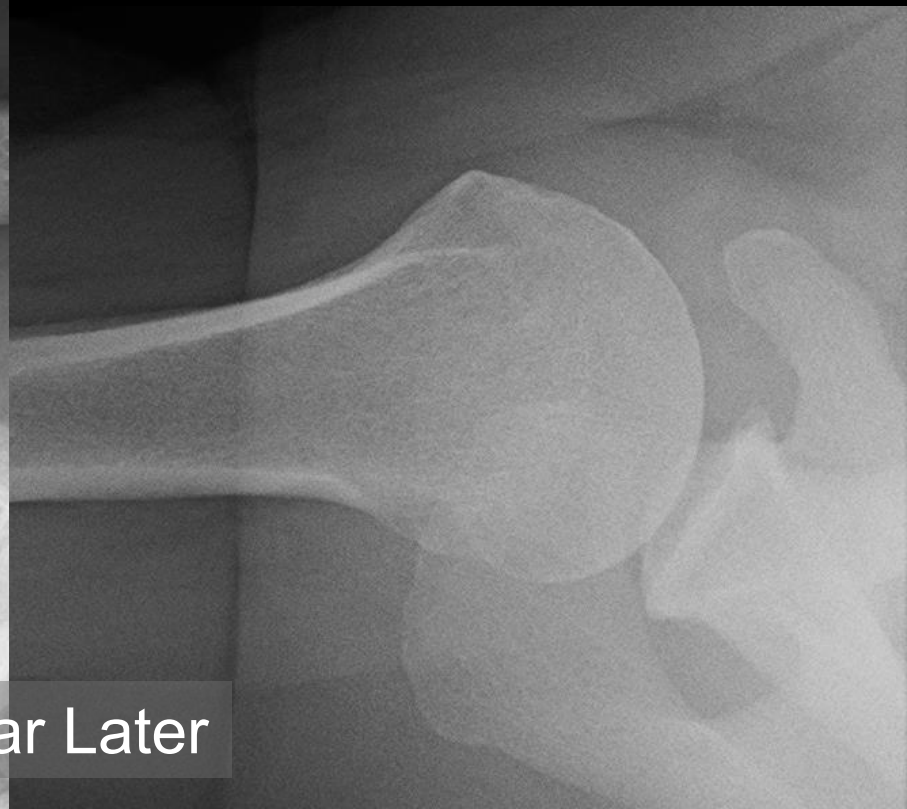
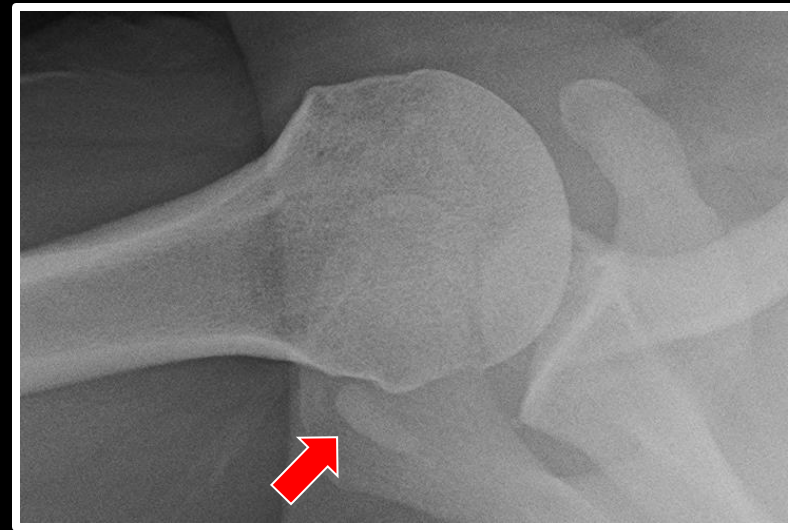
RIGHT IST



ASP

No Calcium Returned – Fenestration Performed

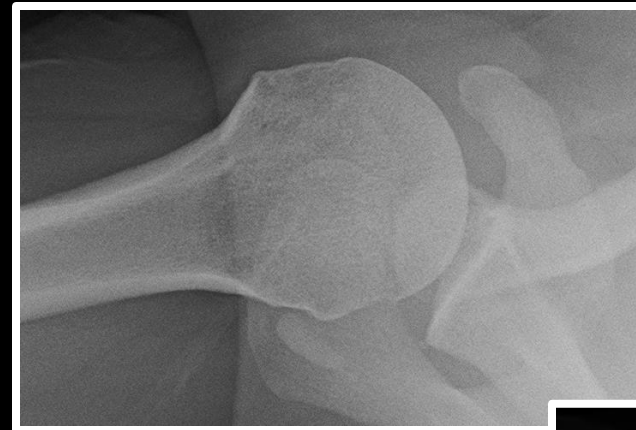




1 Year Later

# Summary of case

- 49 year-old woman with progressive, intense right shoulder pain.
- No relief with NSAIDS



- Primarily Fenestration
- Near complete relief of pain symptoms



# Summary

- Calcific Tendonitis can be adequately and effectively treated with US guided percutaneous lavage
- The lavage procedure is straightforward
- Fenestration may be sufficient
- Therapeutic bursal injection must be performed upon completion of the procedure

# Questions?