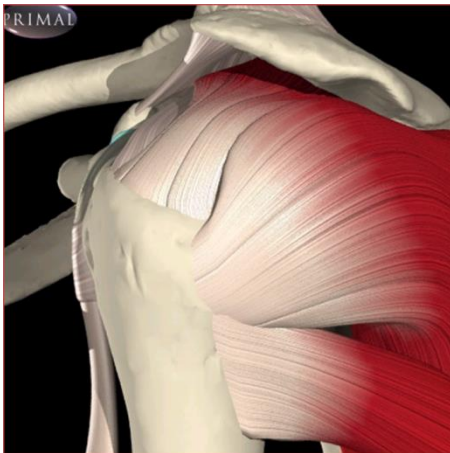
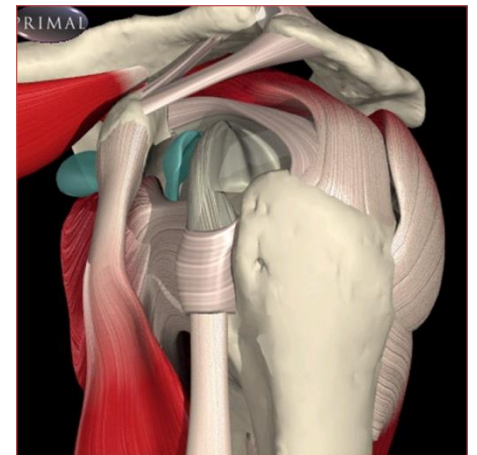


Shoulder Ultrasound



Catherine Kirkpatrick
Lincoln MSK Study Day
November 2017

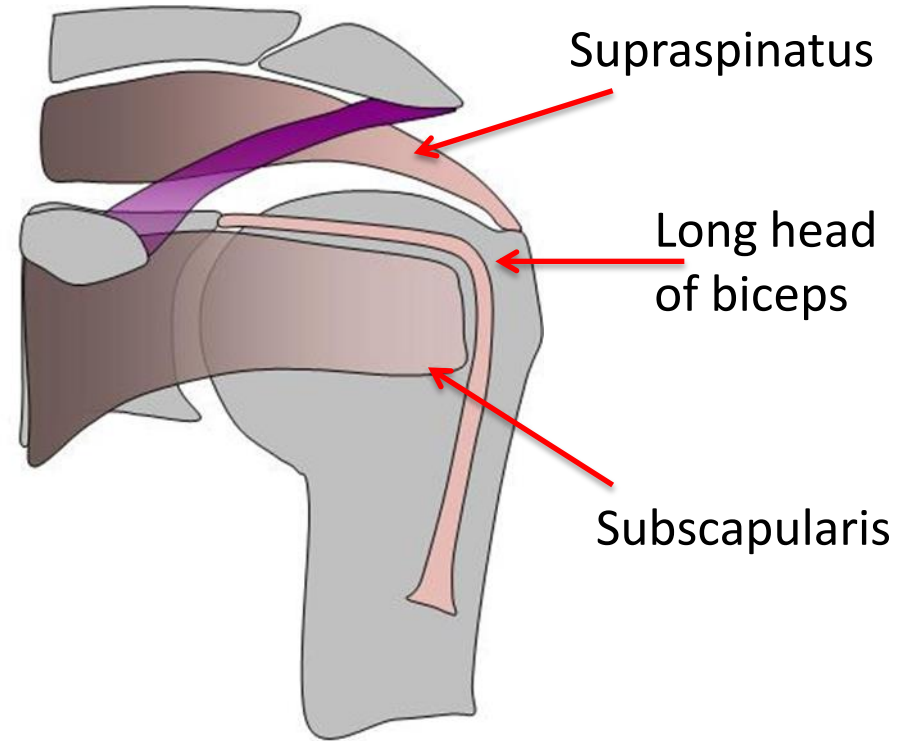
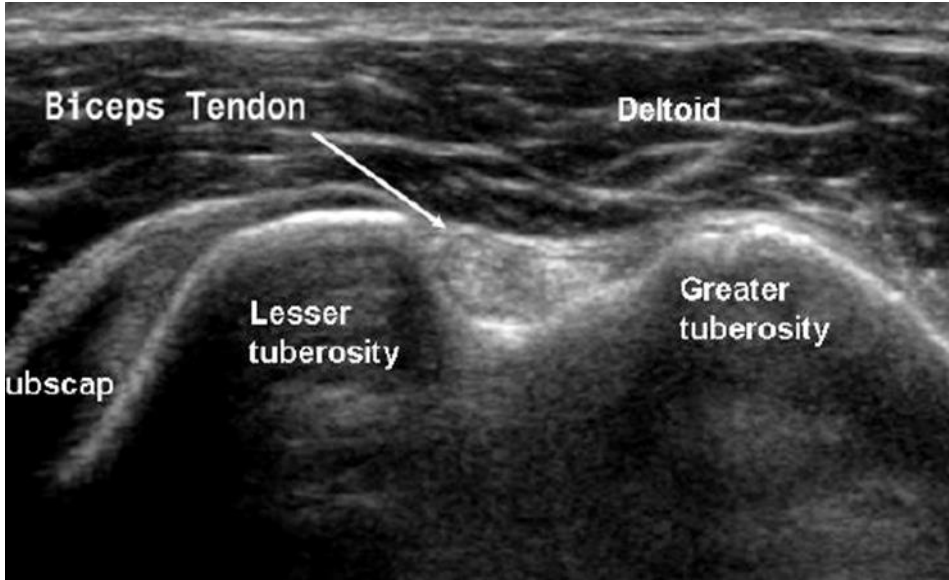


Aims

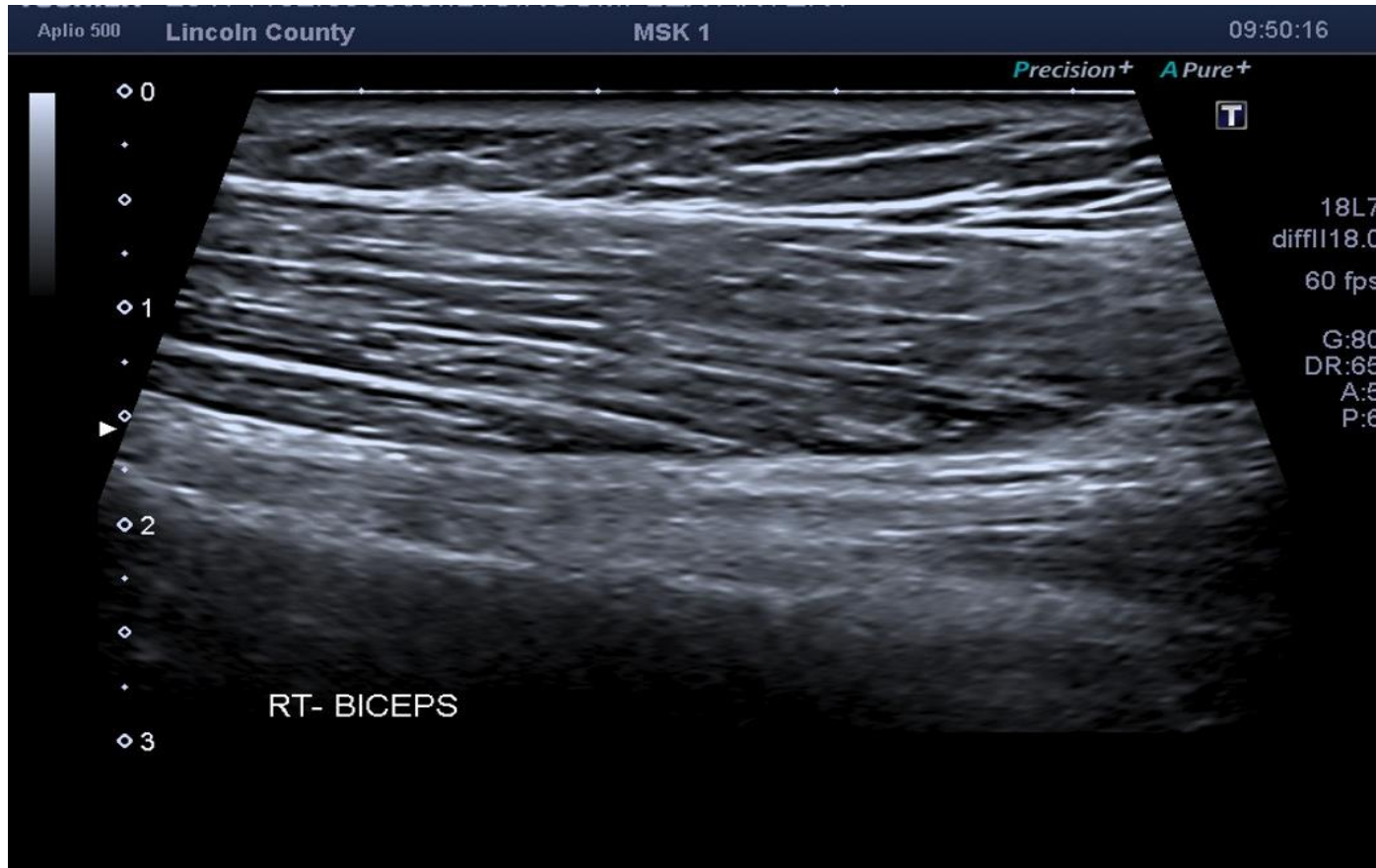
- To revise ultrasound anatomy
- To revise some technique
- Identification of pathology



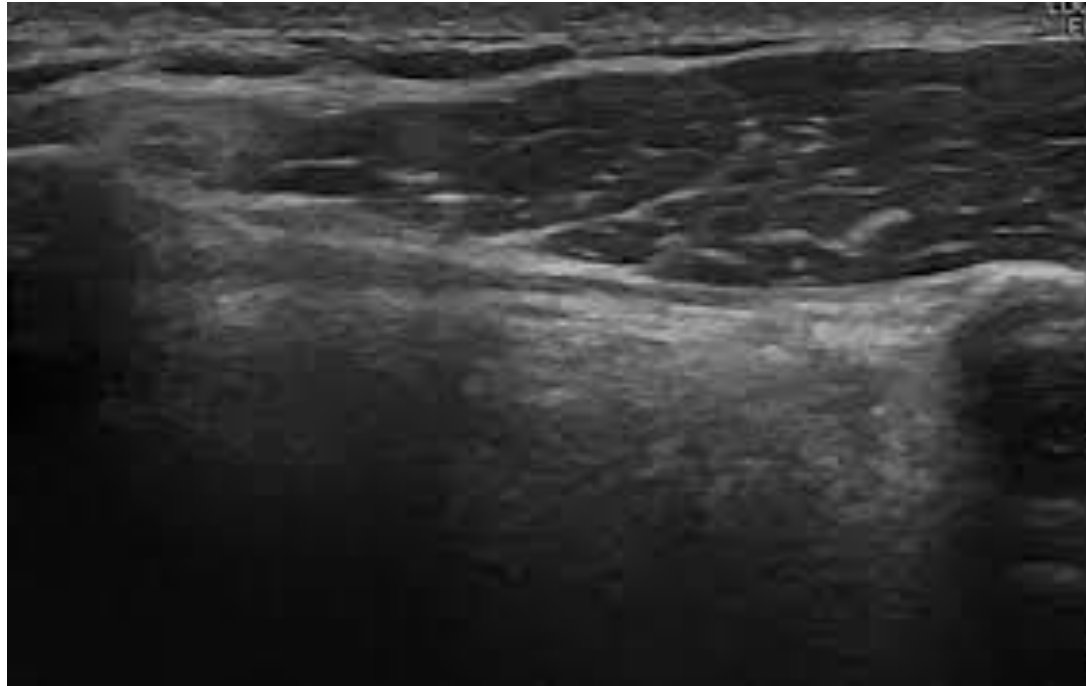
The Biceps Tendon



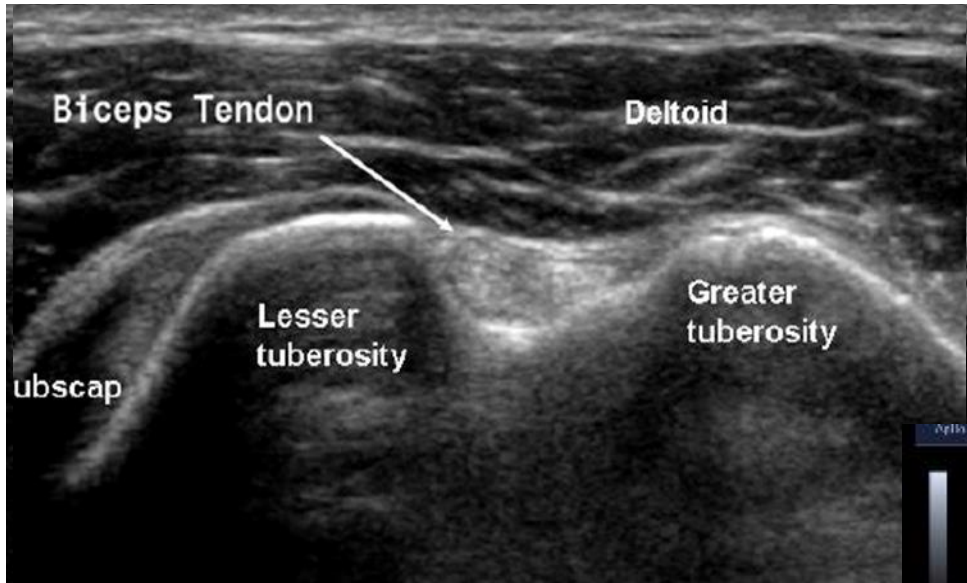
The Biceps Tendon



Coracoacromial Ligament



Subscapularis Tendon



Top Tip: on dynamic scanning take care not to confuse the belly of the SScap muscle belly for a hypoechoic effusion in the anterior dependant part of the SASD bursa on the joint recess.



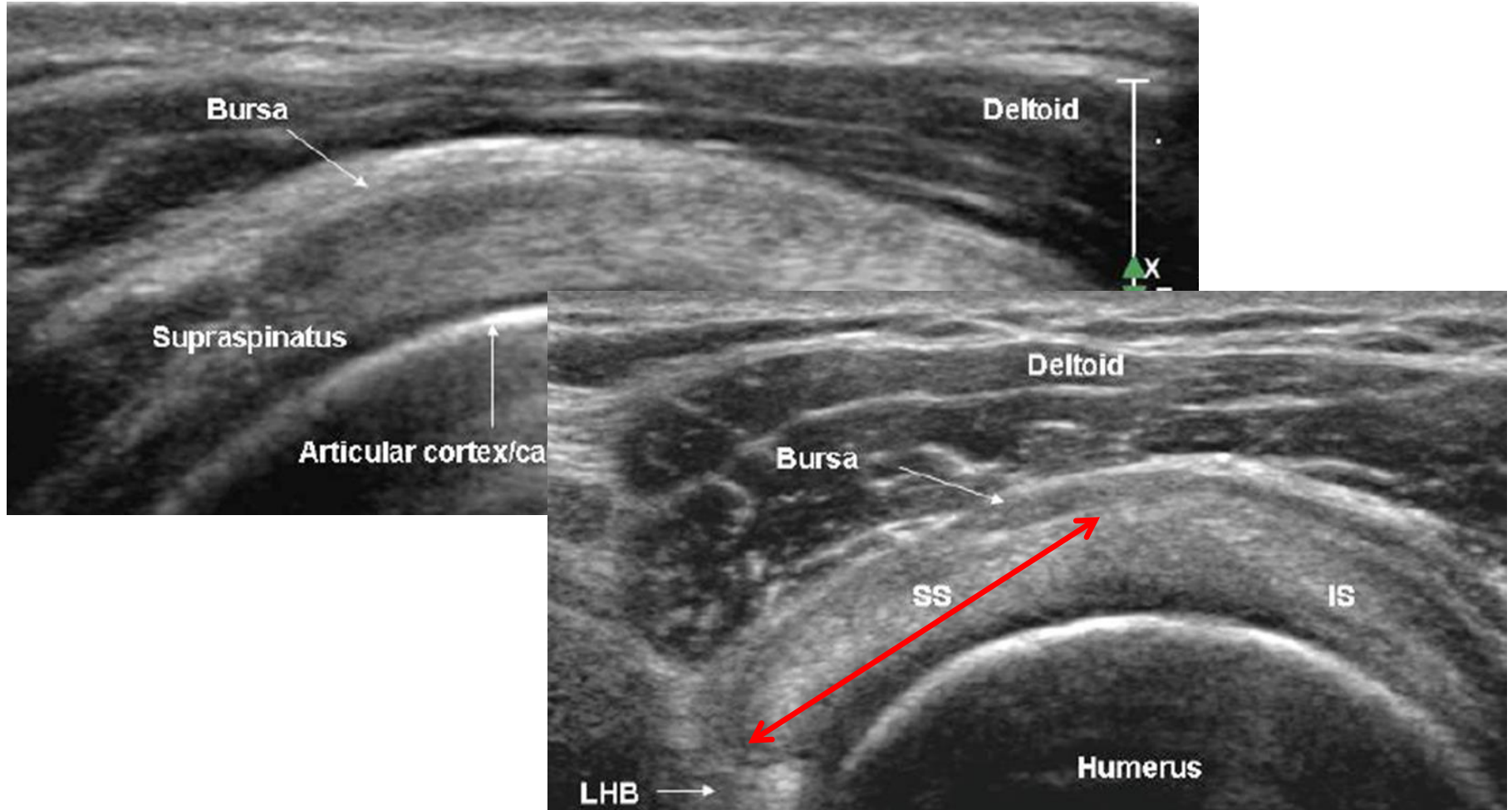
Supraspinatus Tendon



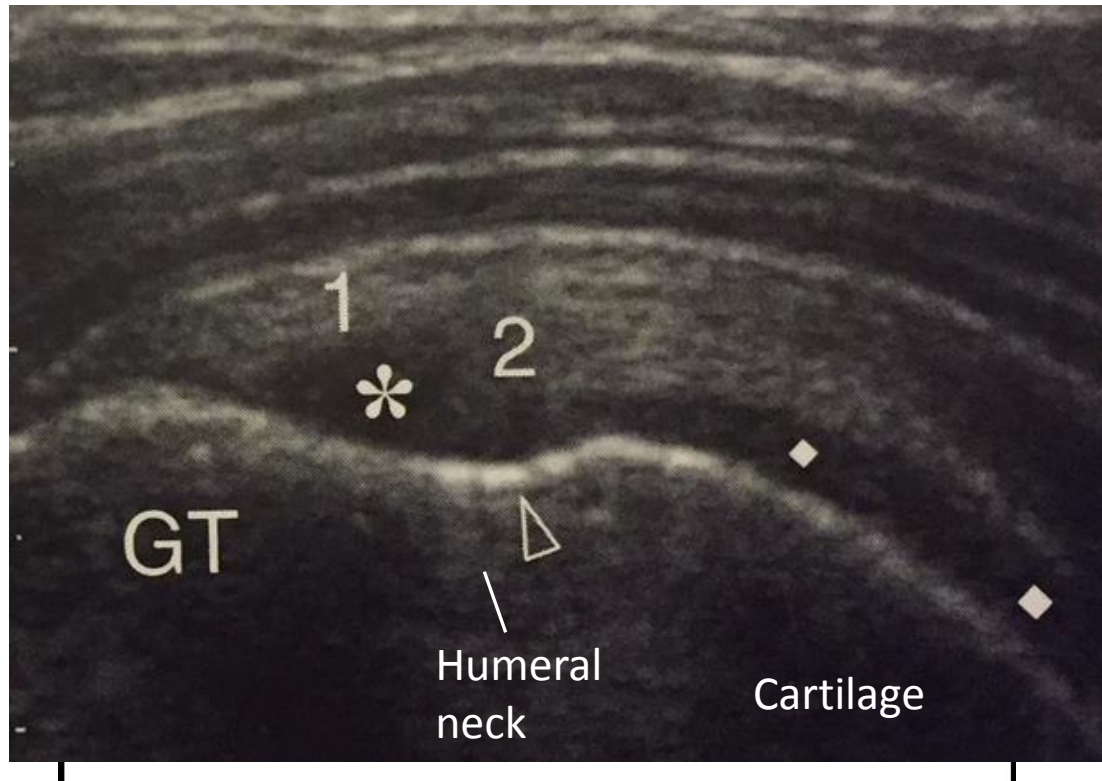
Top Tip: Variations in position and strain can reveal subtle tears



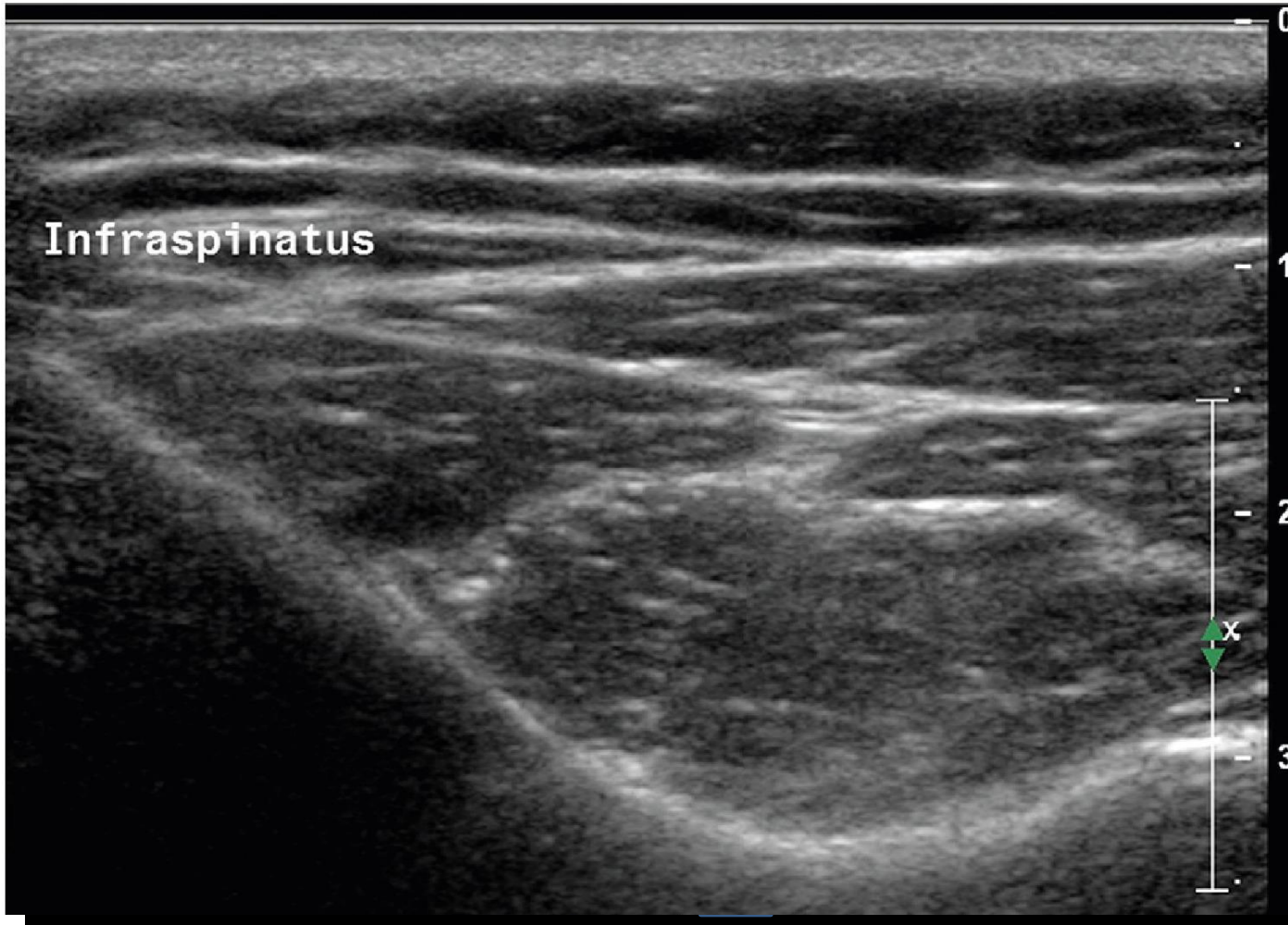
Supraspinatus Tendon



Supraspinatus Tendon



Infraspinatus Tendon

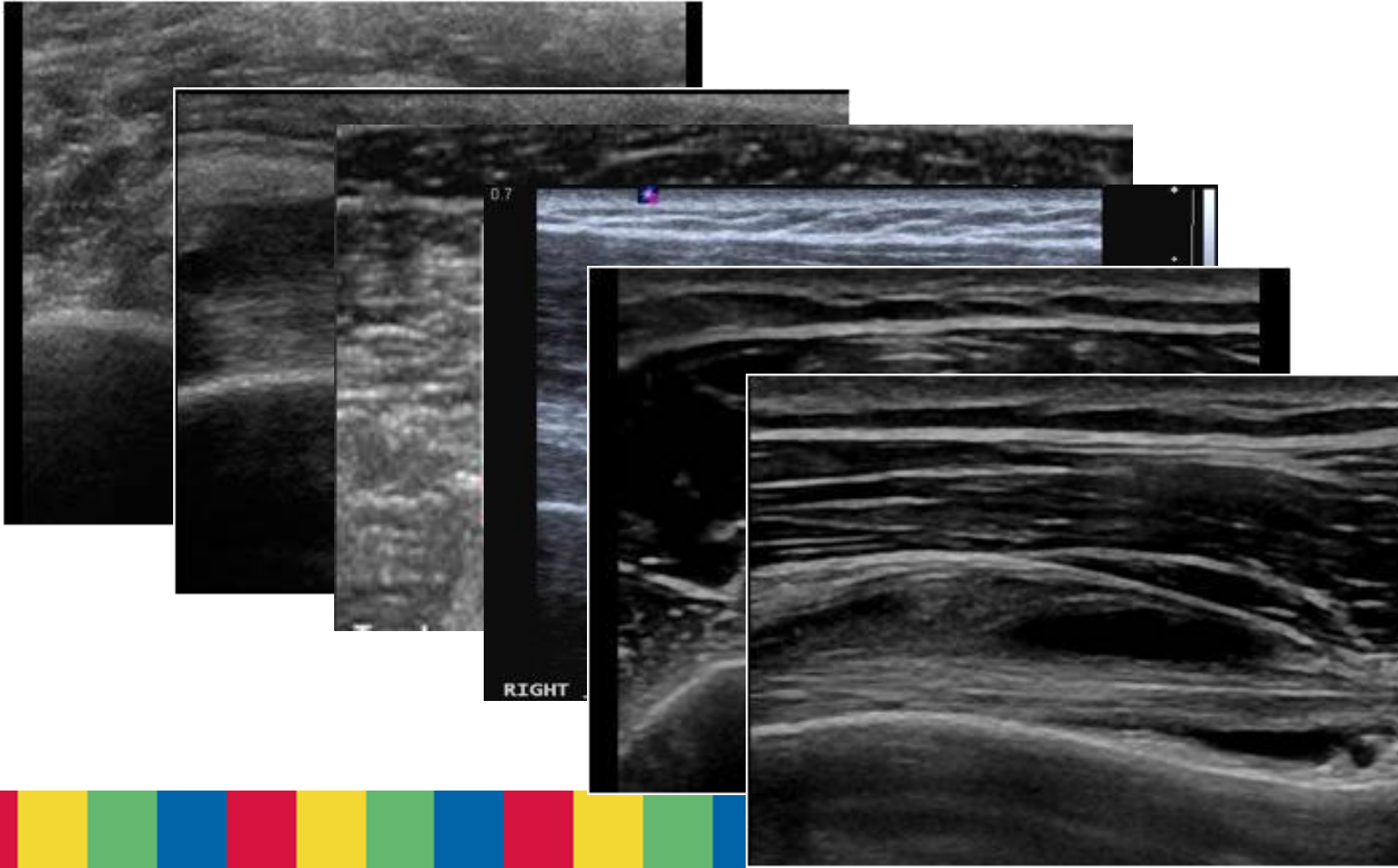




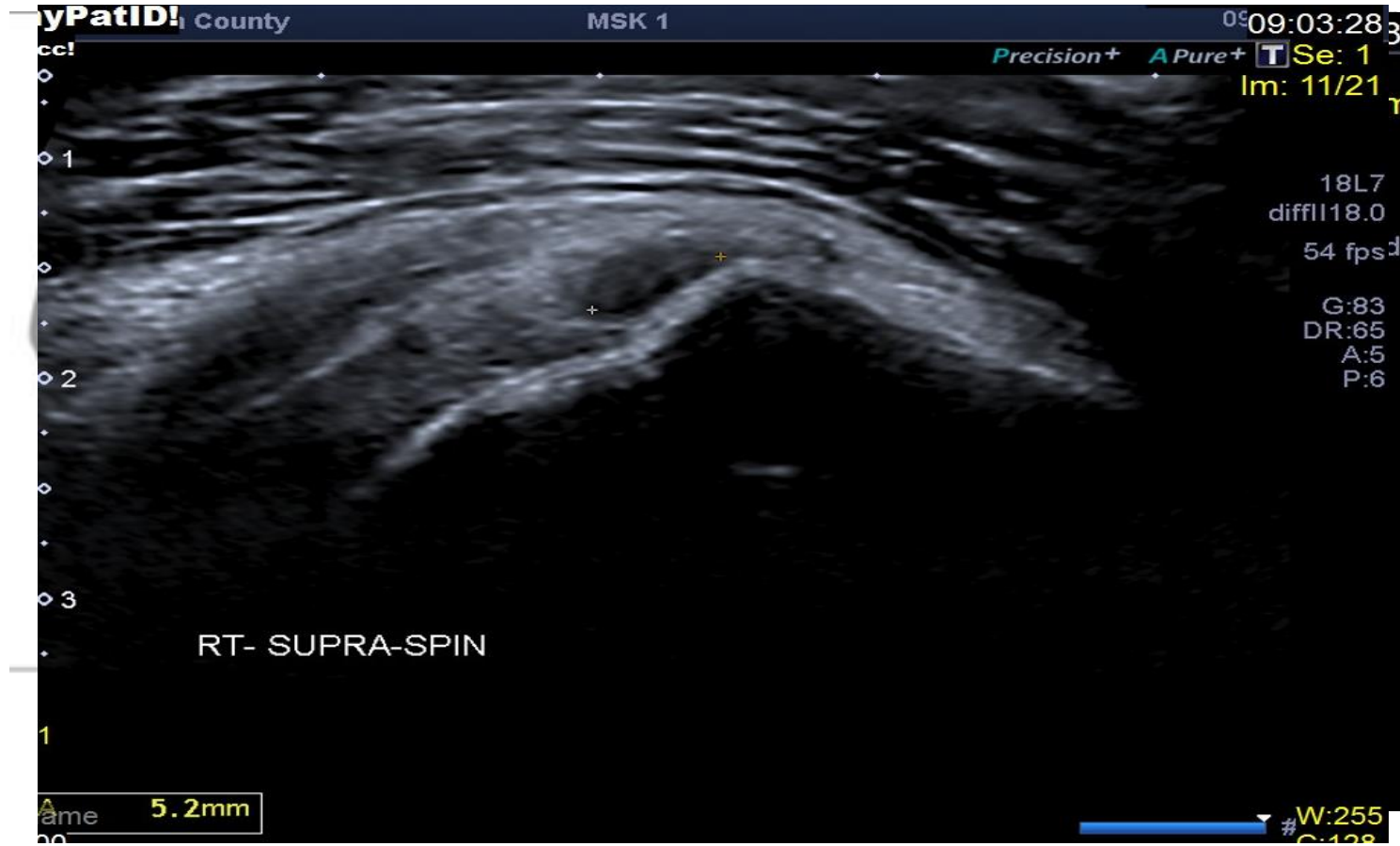
Pathology

- Biceps Tendon
- Rotator Cuff
 - Tears
 - Tendinopathy
 - Impingement
- Bursa
- The ACJ

Biceps Tendon Pathology



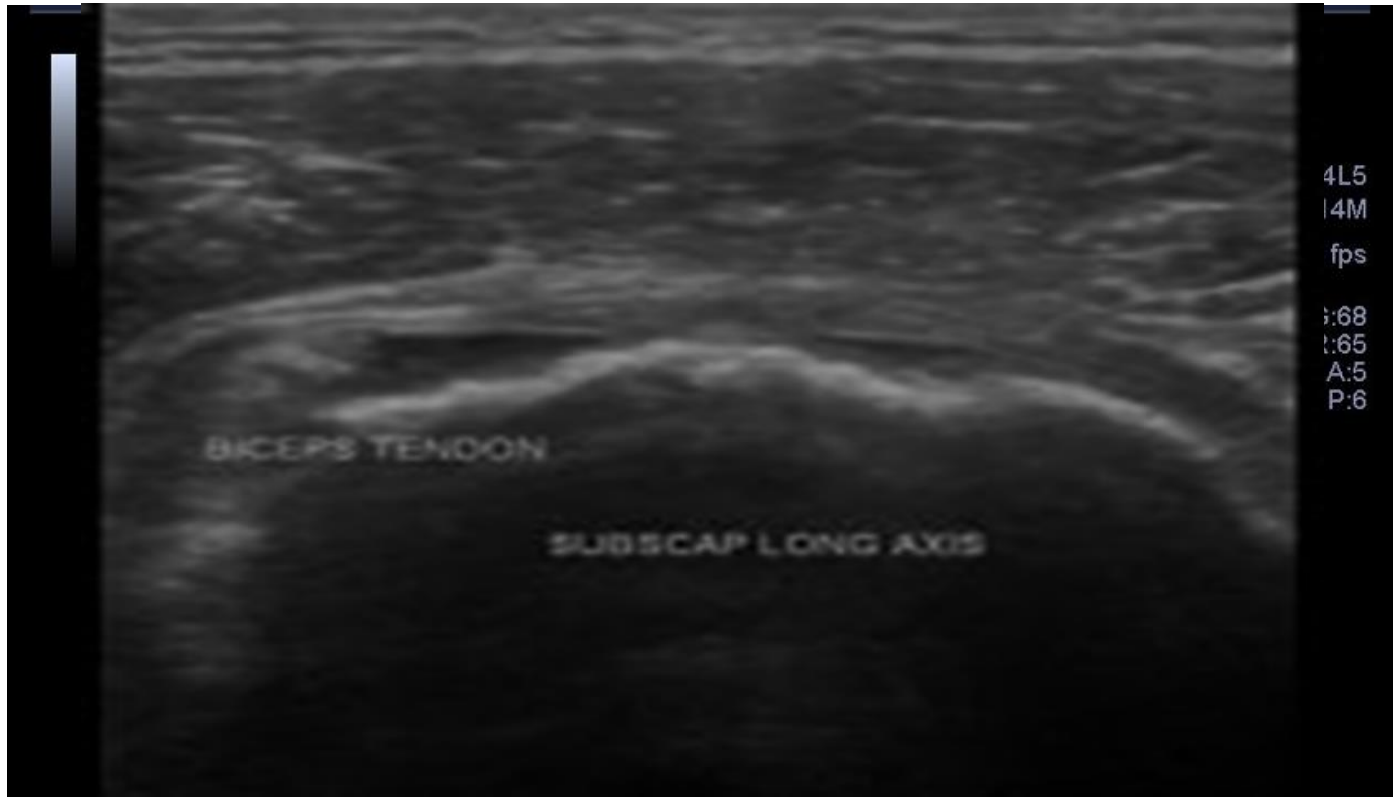
Biceps Tendon Pathology



Biceps Tendon Pathology



Pathology of the Rotator Cuff

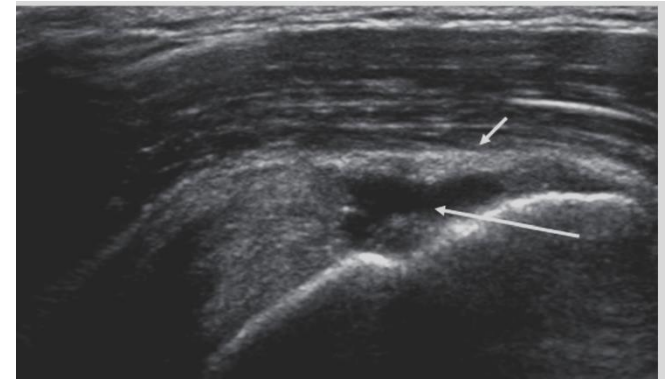


Prevalence of Cuff Tears

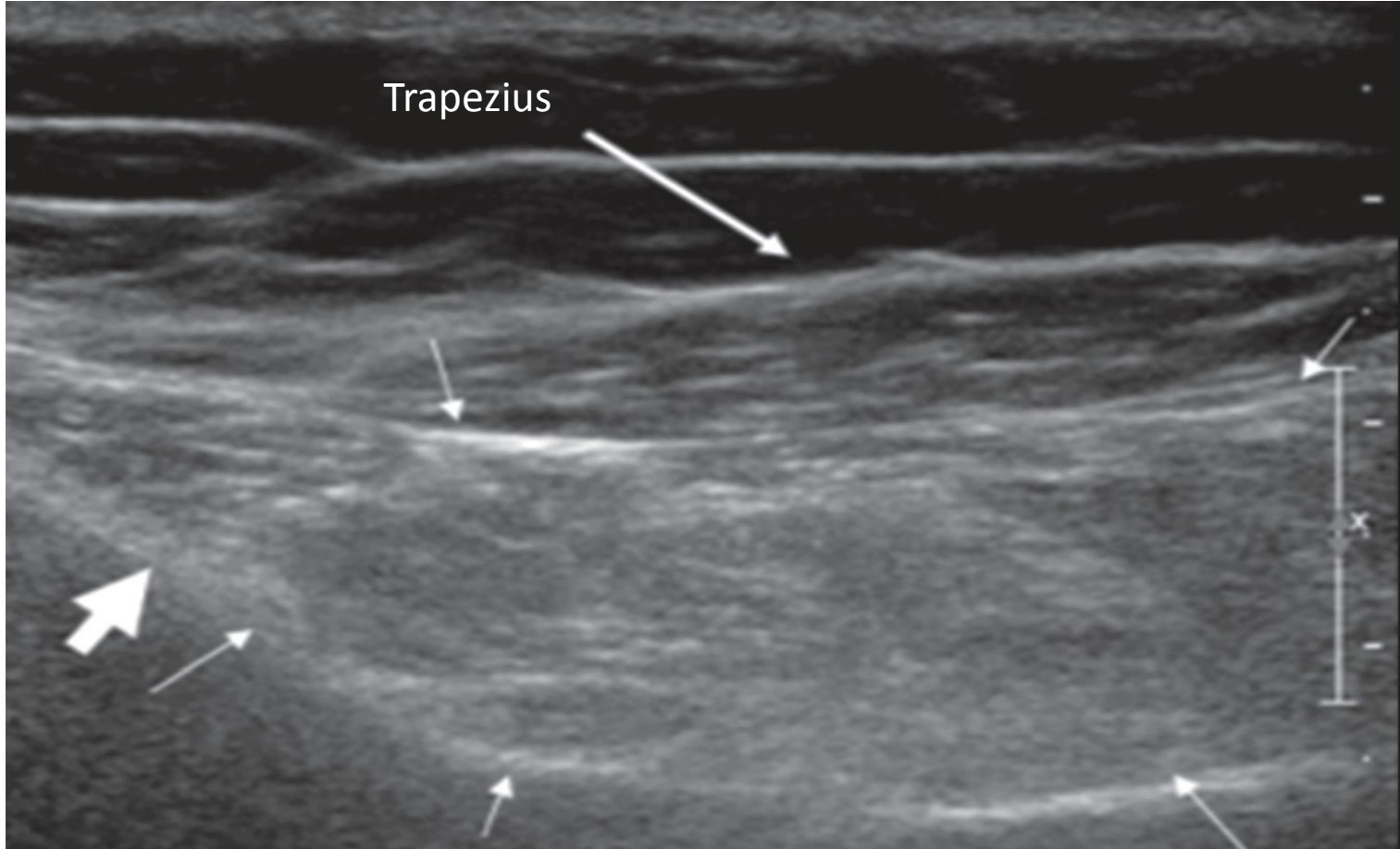
- 664 random people in a community – bilateral shoulders scanned
- 22.1% had full thickness tears
- Symptomatic rotator cuff tears accounted for 34.7% of all tears and asymptomatic tears for 65.3%
- The prevalence of asymptomatic rotator cuff tears was one-half of all tears in the 50s, whereas it accounted for two-thirds of those over the age of 60

Full Thickness Tears

- “Vulnerable Zone” anterior tendon close to the greater tuberosity
- All the way from the bursal surface to the articular surface



Full Thickness Tears



Full Thickness Tears

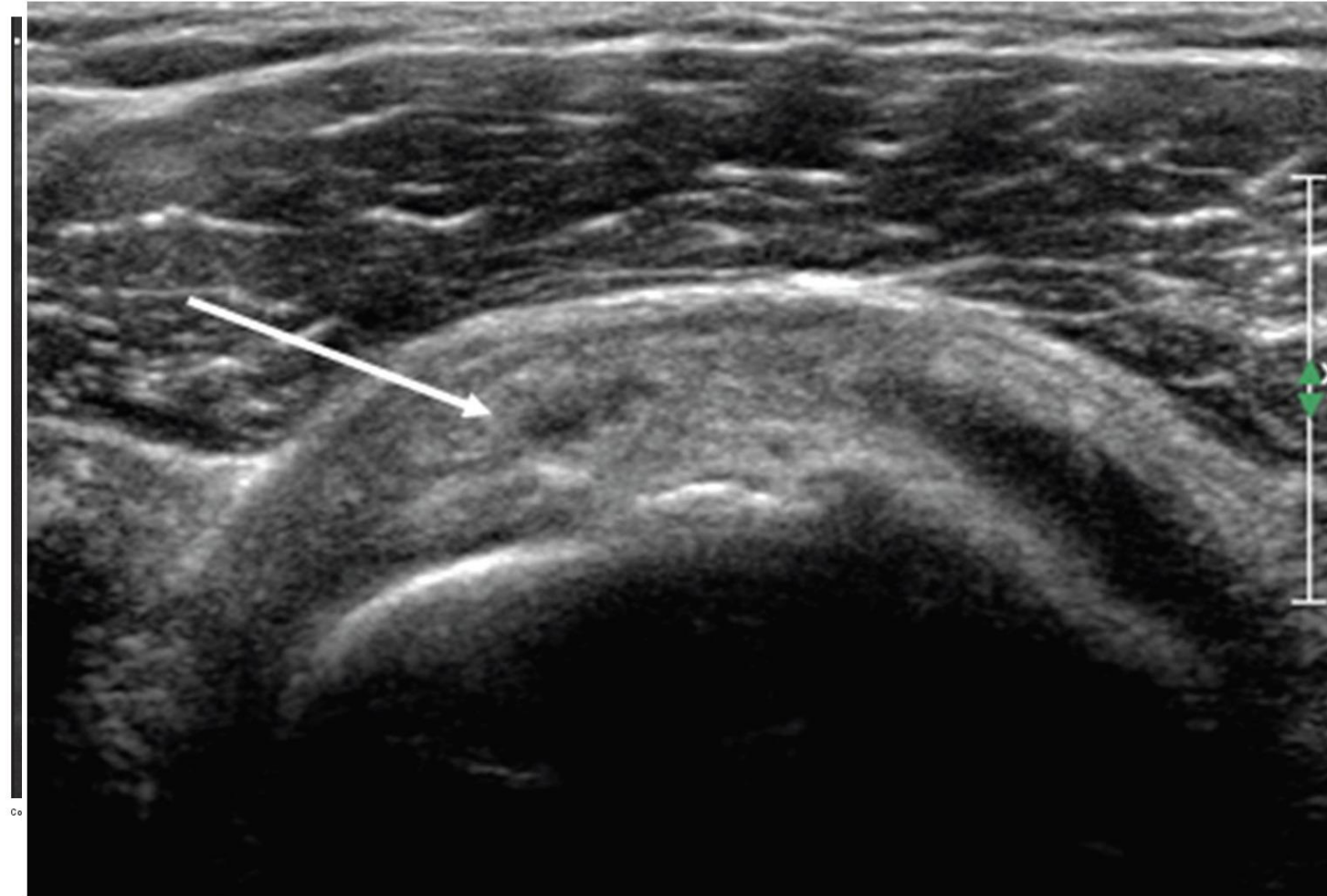
- GHJ effusion & hyperostosis of the GT has a PPV and Specificity of 100%
- Fluid in the SASD and GHJ has a PPV 95% & a specificity of 99%
- Fluid in the biceps tendon sheath & bursa PPV 54%

Partial Thickness Tears

- 13-18% of all rotator cuff tears
- Younger age group
- Small partial thickness tears & differentiation between from focal tendinopathy challenging
- However.....don't have too many sleepless nights they are both treated conservatively



Partial Thickness Tears



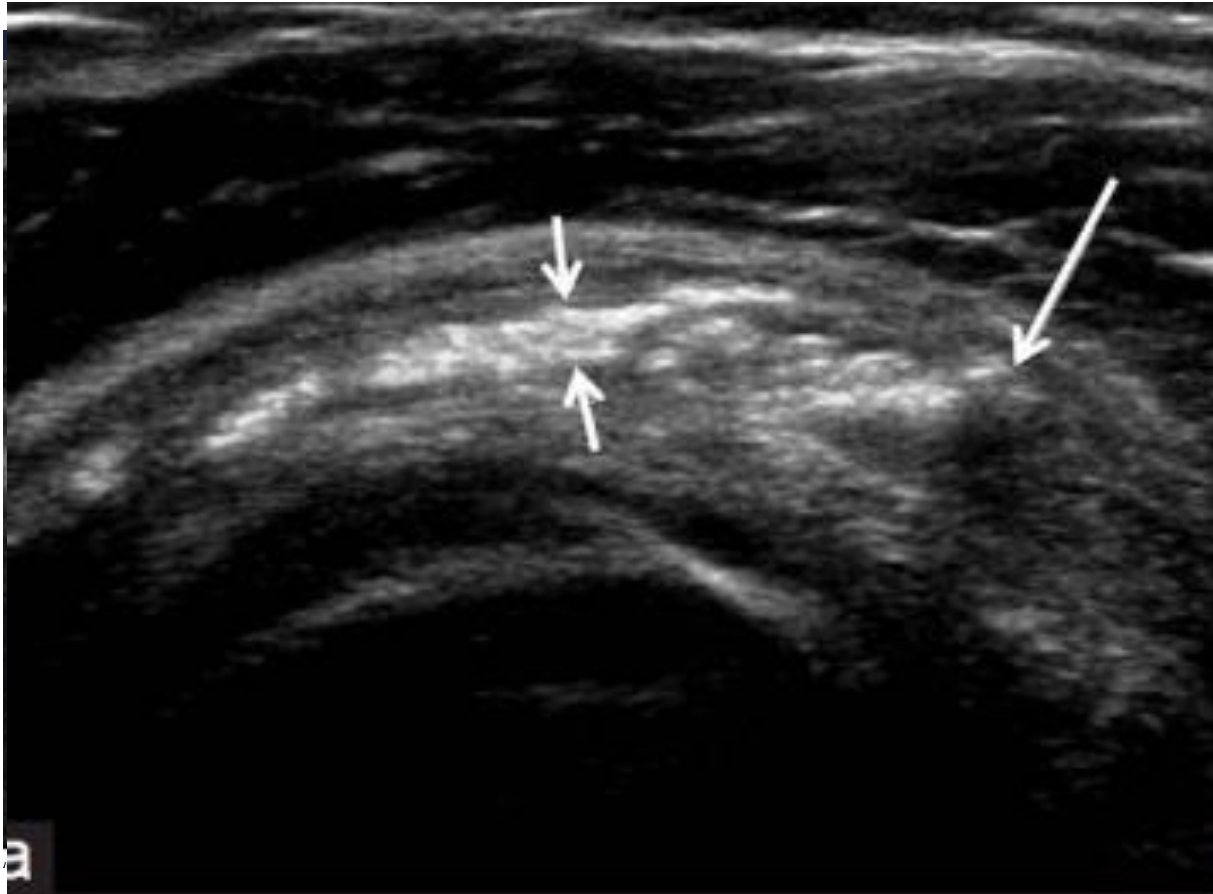
Tendinopathy



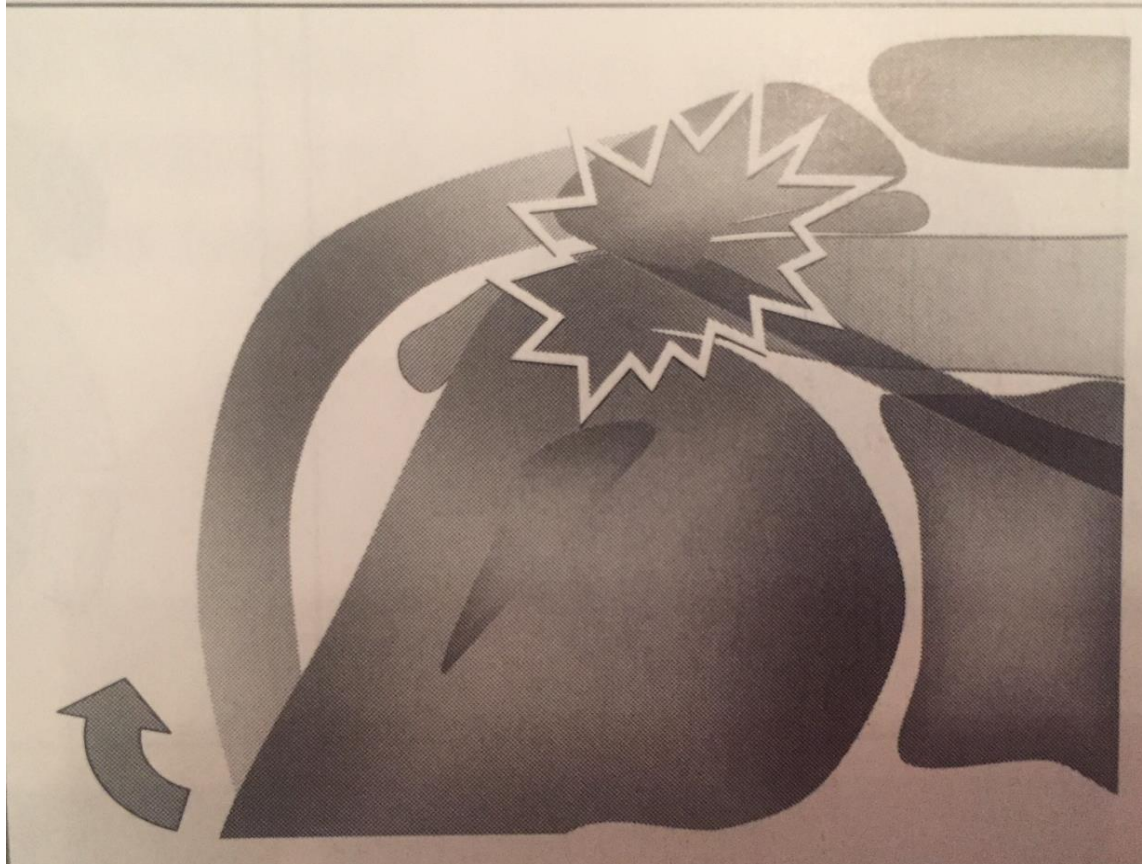
Tendinopathy

- Size difference between : a range from 1.5 to <2.5 mm difference to the contralateral side
- $\leq 8\text{mm}$ is considered abnormal
- Thickening and fluid within the SASD bursa
- Tendinosis can progress
>intrasubstance>partial thickness>Full thickness
- Doppler??

Calcific Tendinopathy



Impingement



Impingement

- Most often anterosuperior
- Involve the supraspinatus tendon and coracoacromial arch
- Thickened or calcified Coracoacromial Ligament
- Thickened Bursa
- Tendinopathy
- Anatomic variations of the Acromion are a factor



Impingement

- Stage 1
 - Subacromial bursitis
 - Minor tendon changes
- Stage 2
 - Moderate to severe tendon changes
- Stage 3
 - Includes partial and full thickness tears

Impingement



ACJ





European Society of
MusculoSkeletal Radiology

Musculoskeletal Ultrasound Technical Guidelines

I. Shoulder

So the point of this.....

- The anatomy is the key to pathology and pitfalls
- A methodical approach to the cuff is essential
- The deeper our understanding of the anatomy the more advanced our work can be
- We can provide more useful and accurate reports for clinicians and the patient pathways





Enjoy the rest of the day



References

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