Shoulder Ultrasound

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Aims

• To revise ultrasound anatomy
• To revise some technique
• Identification of pathology
The Biceps Tendon

- Supraspinatus
- Long head of biceps
- Subscapularis
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

1. Humeral neck
2. Cartilage

GT
Infraspinatus Tendon
Pathology

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

RT- SUPRA-SPIN

5.2mm
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

Trapezius
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
Tendinopathy
Tendinopathy

- Size difference between: a range from 1.5 to <2.5 mm difference to the contralateral side
- ≤8mm 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 coracoacrominal 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
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

- https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3424700/
- https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4799583/
- https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3768248/
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