

Reporting shoulder scans

Lunchtime seminar

MSK Sonographers Study Weekend

May 2018

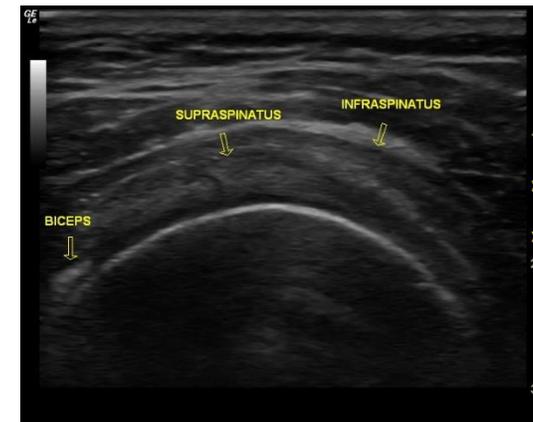
Normal

Normal ultrasound appearances of the supraspinatus tendon. Good depth and texture with no evidence of a tear or intratendinous calcification and good, pain free subacromial movement.

Normal location and appearances of the long head of biceps tendon and the subscapularis and infraspinatus tendons also appear normal.

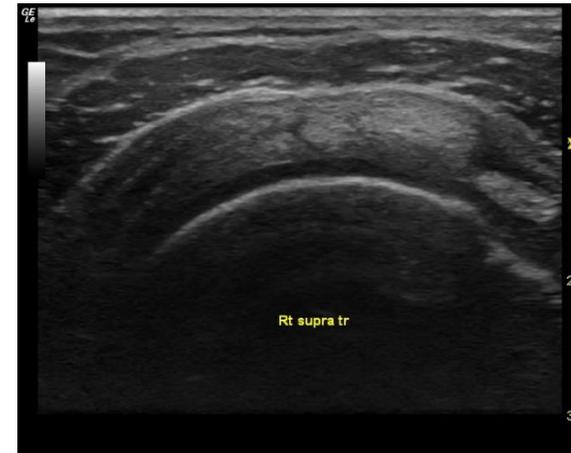
No significant GHJ effusion or ACJ OA seen.

ACJ is within normal limits for age.



Normal

The long head of biceps, subscapularis, infraspinatus and supraspinatus tendons are normal in size and appearance. The AC joint appeared normal in appearance. There was no evidence of impingement on dynamic scanning however, this cannot be excluded with ultrasound.

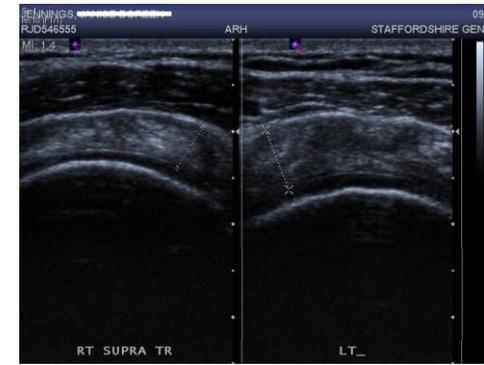


Normal

Normal appearances of left shoulder. Normal fibrillar appearance of long head biceps, subscapularis, supraspinatus and infraspinatus. No evidence of oedema, bursa thickening, calcification or tendon tears or impingement on dynamic examination. No evidence of hyperaemia. ACJ normal appearances.



Tendinopathy



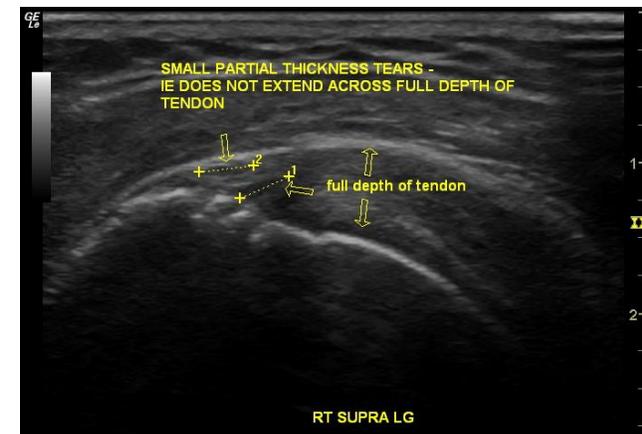
1. Minimal tendinopathy of the anterior third of the supraspinatus but there is no evidence of a tear or intra-tendinous calcifications.
2. Evidence of supraspinatus oedema with fibrillar defects representing heterogeneous appearance and thickening inconsistent with right shoulder. Evidence of hyperaemia and pain on probe pressure. Impression: Left shoulder supraspinatus tendinopathy.
3. The supraspinatus tendon was thickened and heterogenous, with loss of the normal fibrillar echopattern. No convincing partial thickness tear seen. No full thickness tear. The appearances are consistent with moderate tendinosis.
4. The supraspinatus tendon is thickened and heterogenous in keeping with tendinopathic change. No tear is seen.

Calcific tendinopathy



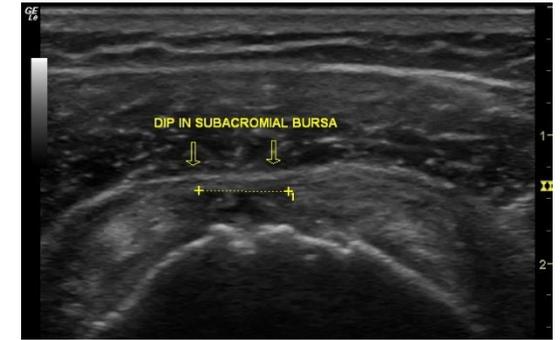
1. Evidence of hyperechoic echogenicity in the region of the tendon in keeping with calcific deposits.
2. There is a hyperechoic, well-defined but non shadowing deposit within the supraspinatus tendon, close to the insertion. It measures 7mm in diameter and ultrasound appearances are consistent with soft calcific tendinosis.
3. There are two foci of calcification within the mid substance of the supraspinatus tendon measuring 8 mm and 7mm respectively. Remaining tendon is tendinopathic - no tear is seen.
4. Left shoulder supraspinatus calcification evident. Evidence of calcification with posterior shadowing in supraspinatus tendon measuring 2x1mm, located in the anterior edge of supraspinatus. Pain elicited on probe pressure. Impression: Left shoulder supraspinatus calcification evident.

Partial thickness tear



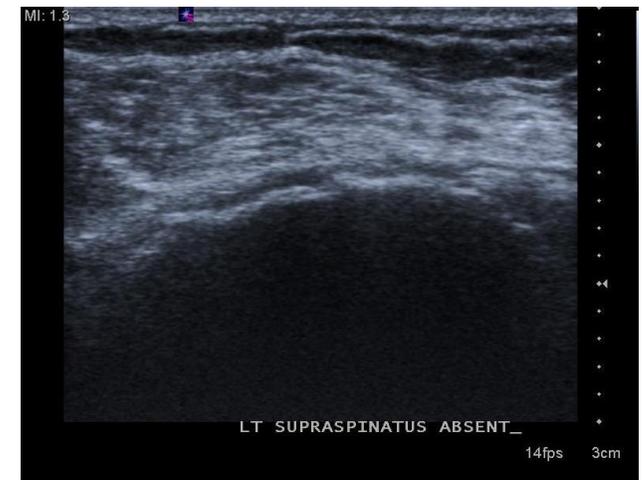
- There is a small partial thickness tear arising from the articular surface of the right supraspinatus tendon. Generally, the right supraspinatus appears mildly tendinopathic. No full thickness tear seen.
- There is a focal area of cortical irregularity of the humeral head. There are two hypoechoic areas in the left supraspinatus tendon closely associated to the irregularity and these may represent mid substance partial thickness tears
- There is mild swelling and architectural distortion of the anterior third of the distal supraspinatus tendon in keeping with tendinopathy. Small 6mm wide partial articular surface tear (<50% thickness) of the tendon 3mm away from the anterior edge. Further shallow partial articular surface tear of the tendon more proximally and posteriorly with some extension into the articular surface of the infraspinatus. Cortical irregularity of the greater tuberosity.

Full thickness tear



- There is a full thickness tear through the mid to posterior fibres of supraspinatus, the anterior fibres appear to be intact.
- Evidence of supraspinatus large defect with anechoic echotexture communicating from articular to bursal surfaces located in the anterior edge of supraspinatus measuring 7x14mm. No evidence of hyperaemia, but pain on probe pressure and compressible. No evidence of large tendon tears or impingement on dynamic examination.
- There is a full thickness insertional tear of the supraspinatus tendon lying 6mm posterior to the rotator interval. It measures 7mm in width with 14mm retraction from the insertion. The remainder of the tendon has good depth and texture.

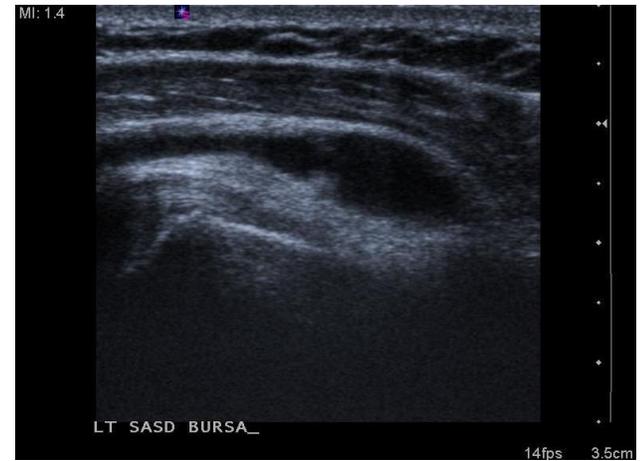
Complete full thickness tear



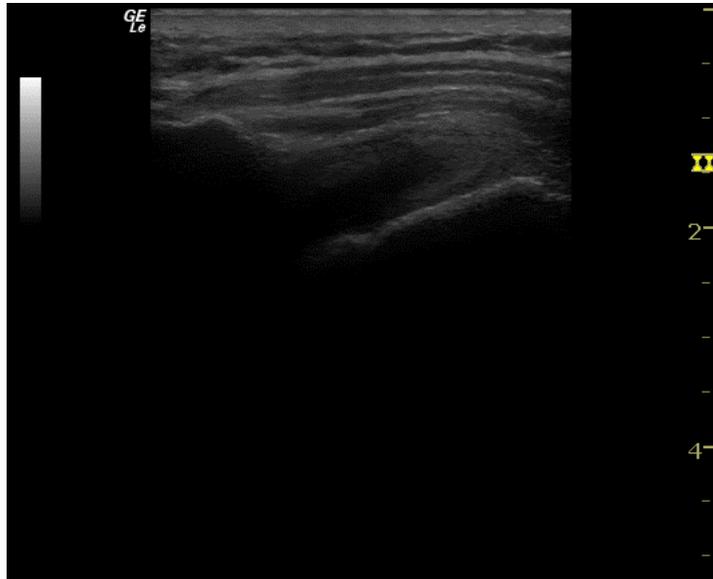
- There is a massive full thickness tear to the left supraspinatus tendon with a thickened, fluid filled bursa noted.
- Complete full thickness tear of the supraspinatus tendon - the retracted tendon cannot be seen.

Impingement/bursitis

- Poor subacromial movement on dynamic scanning.
- Note is made of a thickened fluid filled bursa with restriction to subacromial movement on dynamic scanning.
- There is thickening of the subacromial bursa which has some fluid and bunches up on dynamic scanning through abduction suggestive of impingement.
- Evidence of bursa thickening with anechoic fluid measured at 2.5mm, which is compressible and painful. Evidence of bunching on dynamic active abduction examination. No evidence of tendon oedema, calcification or tendon tears. No evidence of hyperaemia. Impression: Left shoulder subacromial bursa thickening with evidence of impingement.



Impingement



Shoulder ultrasonography is reliable in the diagnosis of full thickness tears but less reliable in the detection of partial thickness tears. The reliability of shoulder ultrasound in the diagnosis of subacromial impingement syndrome has not been clearly established. The validity of the diagnosis of subacromial bursitis is problematic because of the lack of a suitable ultrasound definition of subacromial bursitis and because the “diagnosis” may not reflect a specific entity requiring specific treatment.

Clinicians need diagnostic certainty to optimise management. A reported ultrasound abnormality enables the clinician to fulfil the doctor’s half of the bargain in the doctor–patient relationship, by delivering a diagnosis with the promise of treatment. The patient can be mollified and may even be satisfied. If the patient is also a claimant or litigant, the injury claim can seemingly be validated by an objectively verifiable abnormality on imaging.

That all of this has the potential to reinforce and thereby perpetuate referral behaviour is consistent with the rise in requests for shoulder ultrasonography in Australia between 2000 and 2006. Yet on the available evidence, shoulder ultrasonography, like all other imaging modalities, is rarely able to deliver the diagnostic certainty for which clinicians yearn. Awerbuch 2008

Surgeon's opinion

'There is a growing feeling in secondary care that USS is over used in primary care for shoulder pain leading to increased hospital referrals. This is highlighted by new PCT Lavender Statements. USS of the shoulder in my view is best considered an extension of one's clinical assessment and its main role is deciding if a full thickness rotator cuff tear is present in a symptomatic patient. The radiologists will have you believe they can accurately diagnose bursitis, impingement on dynamic scanning and partial thickness tears. I am not aware of any evidence for this and certainly anecdotally we receive a multitude of referrals based on such scans which are almost comical if someone had actually assessed the patient as the diagnosis is so far off the mark. If a patient is told they have a torn tendon they usually want to see a surgeon even if they don't need surgery

The main disadvantage of shoulder US is its dependence on operator skills and experience and whether it has any true diagnostic value other than identifying rotator cuff tears!

To give an example – a common referral is, can you see this 75 year old lady with a rotator cuff tear on USS. When you examine the patient they have barn door global loss of GH movement and crepitus and an xray demonstrates GH joint arthritis – the cuff tear is totally irrelevant and the USS fails to diagnose a bony problem! '