

# CHALLENGING CLINICAL CONSIDERATIONS

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## Referring a shoulder ultrasound? Should the referral include an x-ray? YES!

Following acute injuries x-rays are essential to assess for fractures, including avulsion injuries of the rotator cuff or bony injuries as a result of dislocation, such as a Hill–Sachs or bony Bankart lesion. In older patients humeral neck and greater tuberosity fractures are quite common.

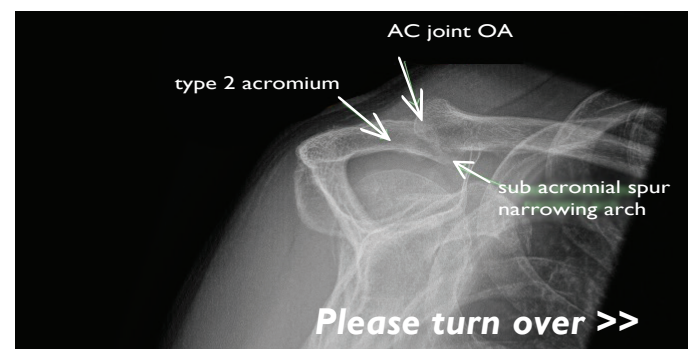
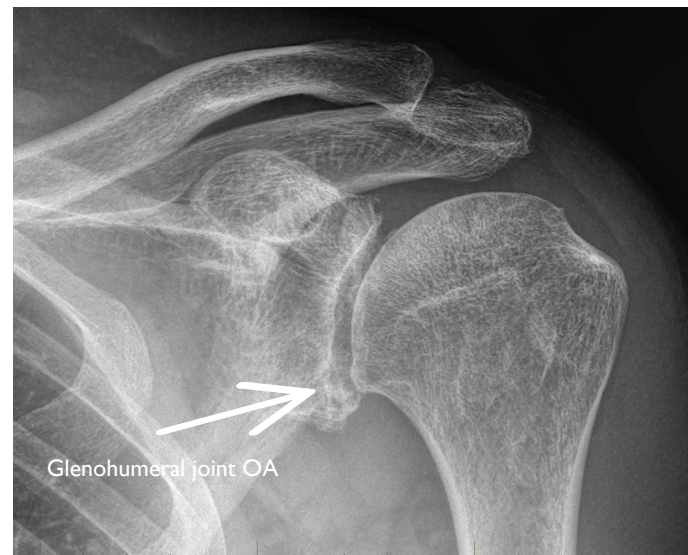
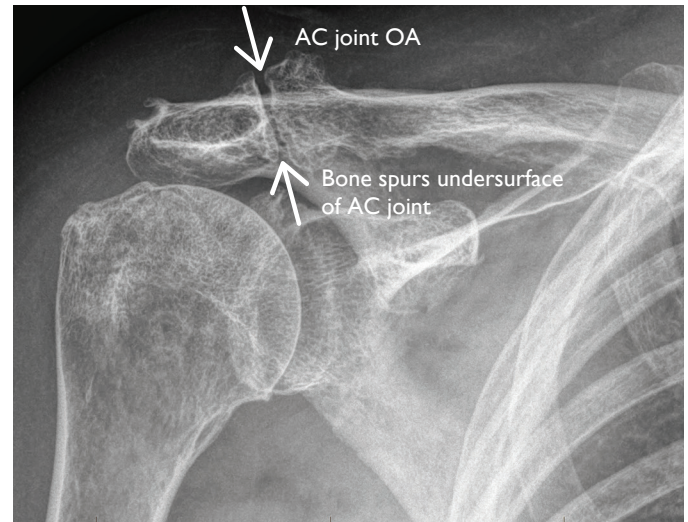
Chronic shoulder pain is very common, with as many as 20% of the population suffering from shoulder pain during their lifetime. While ultrasound seems to have become one of the first-line tests for the diagnosis of shoulder pain it should not be performed at the exclusion of x-ray radiography which still remains a valuable first-line test in the examination.

Take for example a patient with impingement symptoms. Ultrasound is very useful to assess the integrity of the rotator cuff and allows dynamic assessment of the shoulder to assess for impingement of the bursa or tendon however it provides little, if any, information about cause and invariably likelihood of success of conservative treatment. Impingement of the shoulder is a condition characterized by pressure on the supraspinatus tendon and the bursa between the humeral head and the coracoacromial arch. Often, bony spurs can be seen of the acromion in association with the presence of certain anatomical variations, including os acromiale, a type 3 acromion or osteoarthritis of the AC joint with sub acromial spurring.

These causative factors to rotator cuff pathology can not be seen on ultrasound but easily assessed on x-ray.

Also important to remember is that rotator cuff pathology and impingement is not the only cause of shoulder symptoms. Although osteoarthritis in the glenohumeral joint is less frequent than in weight bearing joints it is a common cause of shoulder pain and stiffness especially secondary to injury, or with a history of RA. Ultrasound is of limited value in assessing the glenohumeral joint and x-ray is essential. X-rays also able to assess other rarer causes of shoulder symptoms that are occult on ultrasound such as avascular necrosis and bone malignancies.

## SHOULDER IMAGING



# SHOULDER ULTRASOUND WHY AN X-RAY SHOULD ALWAYS BE PERFORMED *continued...*



On occasions the x-ray and ultrasound fail to identify a cause of the patients symptoms or clinical assessment would indicate an intra articular pathology. In such cases, MRI is considered the gold standard. In addition to detailed assessment of the rotator cuff, bursa, sub acromial arch morphology and other bony pathology, this modality allows assessment of the glenoid labrum and stabilizing ligaments, intra articular portion of long head of biceps and other glenohumeral joint processes such as adhesive capsulitis which is often occult on x-ray and ultrasound. It is often used by surgeons to plan surgical approach for rotator cuff tears, sub acromial decompression and following dislocation and patients with recurrent instability. Unfortunately Medicare restricts rebatable shoulder MR to specialists only.

In summary, x-ray in combination with ultrasound allows a far more comprehensive radiological assessment of the shoulder especially with targeted review following appropriate clinical assessment to determine potential cause and should be considered complimentary investigations and performed together for best diagnostic accuracy.

Should you ever have any questions on best imaging test please feel free to ring and discuss directly with the Radiologist.

## What interventional procedure is most appropriate for the shoulder pain?

The most common procedure performed for shoulder pain is a subacromial steroid injection. This is indicated for subacromial bursitis and/or rotator cuff tendinosis. The procedure involves a small needle being placed under ultrasound guidance into the subacromial bursa. A mixture of steroid and anaesthetic is then injected into the bursa which spreads out around the rotator cuff tendons. The efficacy of these injections is difficult to predict accurately for a specific patient, however these injections are generally well tolerated.

In specific instances of suspected adhesive capsulitis, hydro-dilatation can be attempted. This involves distending the joint in the hope that the injectate acts to breakdown and stretch adhesions.

If you are unsure, we would be happy to advise, and you are welcome to refer for +/- injection where appropriate.

Corticosteroids cause a number of side effects which can be limited to the area injected or affect the entire body. Side effects increase with larger doses and repeated clinical use. For this reason, physicians may limit the number of injections and the cumulative amount of corticosteroid that is given. Typically, corticosteroid injections are not given more often than every six weeks, and usually not more than four times a year. But these are only guidelines. A patient's situation dictates the timing and frequency of treatment.

## What happens if an MSK injection 'doesn't work'?

As mentioned above, a repeat injection may be appropriate if the pain relief is only temporary. Physiotherapy is often an important adjunctive therapy. In difficult to diagnose or treat cases, further imaging with MR shoulder (as mentioned above, unfortunately Medicare restricts rebatable shoulder MR to specialists only), and/or sports physician/orthopaedic referral may be appropriate.

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