

Shoulder Pain

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Interesting Case History

Mr 'S' had CABG surgery in July 2013, and soon after developed pain in his left posterior shoulder. This was initially put down to referred pain from a persistent pleural effusion. However the pain persisted and a degree of weakness developed. His dysfunction was not severe, more of an annoying pain and weakness.

On examination, shoulder elevation was achieved with significant scapular hitching. There was obvious wasting of infraspinatus, and less obvious wasting of supraspinatus. Resisted abduction was moderately weak, and lateral rotation strength was profoundly reduced. A recent ultrasound reported normal rotator cuff tendons, making the most likely diagnosis a suprascapular nerve injury.

The condition:

Injury to the suprascapular nerve is most often reported as an entrapment neuropathy which tends to occur in overhead athletes. It is most commonly reported in volleyball, where up to 45% of elite competitors may be affected. Other common sports are tennis, weight lifting, baseball and swimming. It has also been reported in carpenters and labourers, probably due to carrying heavy weights on the shoulder. Interestingly, one paper reports cardiac rehabilitation as being an associated factor, with no mechanism described. I contacted a colleague who has worked for over 30 years in post-cardiac surgery rehabilitation, and she was unaware of such a connection. However she did point out that if the condition occurred due to surgery or rehab, the symptoms would be delayed, and the patient would be unlikely to return to the cardiac team with problems related to the shoulder.

If the pathology is due to nerve compression, this tends to occur at one of two sites: the suprascapular notch, which will affect both supraspinatus and infraspinatus, resulting in moderate to severe shoulder dysfunction.

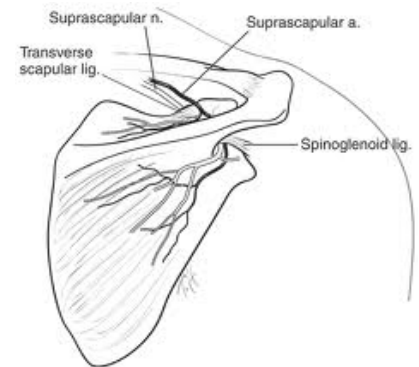
If at the spinoglenoid notch (posterior to the glenohumeral joint), this will affect infraspinatus only, with less severe dysfunction. Volleyball players have been known to function almost normally with this injury.

Causes:

The nerve may be injured by compression, traction, friction, repetitive micro-trauma, or direct injury. Compression may occur under ligaments or the rotator cuff tendon, or due to the presence of a ganglion cyst behind the joint. These commonly arise due to labral tears. Stretching may occur due to adoption of repetitive positions, particularly overhead, or due to postural scapular protraction, depression or retraction. During abduction, nerve tension may increase due to faulty scapular position. Direct trauma mechanisms include glenohumeral dislocation or fractures around the shoulder.

Presentation & examination:

There is often poorly localised pain over the posterior shoulder, with or without weakness on overhead activity. Muscle wasting may be apparent,

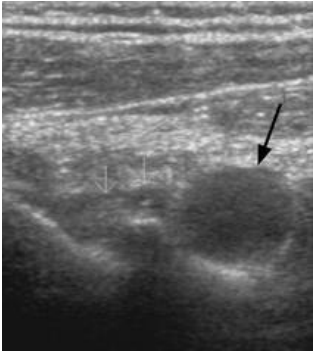


particularly of infraspinatus, while supraspinatus wasting is not as obvious due to this being disguised by the overlying upper trapezius. There may be weakness of abduction &/or lateral rotation. Cross body adduction is sometimes uncomfortable.

Diagnostic tests:

This will involve a combination of clinical examination, nerve testing and imaging. EMG and nerve conduction studies may be useful, however

false negatives are not uncommon. Diagnostic ultrasound may detect a ganglion cyst near the spinoglenoid notch. MRI may be useful in evaluating the soft-tissues around the nerve, and particularly for the presence of ganglion cysts. MRI can also confirm the



presence of muscle atrophy, and rule out rotator cuff tear as the alternative diagnosis. Diagnostic nerve blocks are sometimes performed, but can be unreliable.

Treatment:

If no cyst is present and discomfort is mild to moderate, the initial management should be conservative. Often, resolution of symptoms occurs over 6 to 12 months. Treatment during this period includes relative rest, maintenance of proper posture and proprioceptive exercises. Full shoulder range of motion should be maintained to ensure no secondary stiffness. This may include stretching of the posterior capsule. Strength should also be maintained, particularly for the rotator cuff, deltoid and periscapular muscles – serratus anterior, trapezius and rhomboids. NSAID's may help relieve pain and nerve inflammation.

Surgery:

If a cyst is present, it may be due to the presence of a labral tear. This may need to be debrided or removed, otherwise cyst decompression may be unsuccessful. If the lesion is at the suprascapular notch, the transverse scapular ligament may need to be sectioned. If the notch is shallow or “V” shaped, a notchplasty may also be required. Sometimes notchplasty and ligament sectioning is required at the spinoglenoid notch.

References:

1. Gebauer, G & Cosgarea, A (2009). Suprascapular nerve entrapment. In Wilk, K et al (eds). The Athletes Shoulder (2nd ed). Churchill Livingstone, Philadelphia.
2. Safran, M (2004). Nerve injury about the shoulder in athletes, part 1: suprascapular nerve and axillary nerve. AJSM, 32, 3, 803-819.

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