CLINICAL VIGNETTE

Suprascapular Neuropathy Caused by a Spinoglenoid Cyst

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Introduction

Suprascapular neuropathies are an uncommon cause of shoulder pain and weakness and are frequently misdiagnosed. Suprascapular neuropathies account for only 1-2% of shoulder pain.[1] Spinoglenoid cysts are a rare cause of suprascapular neuropathy. Suprascapular nerve entrapment can occur at the suprascapular and/or spinoglenoid notches.[2] This is most commonly caused by a paralabral cyst resulting from a labral tear. The suprascapular nerve branches off of the brachial plexus and courses from the superior border of the scapula through the suprascapular and spinoglenoid notches (Figure 1). The suprascapular nerve provides motor innervation to the supraspinatus and infraspinatus muscles. Impingement at the suprascapular notch results in weakness in both the supraspinatus and infraspinatus muscles whereas impingement at the spinoglenoid notch will result in weakness in the infraspinatus muscle only.

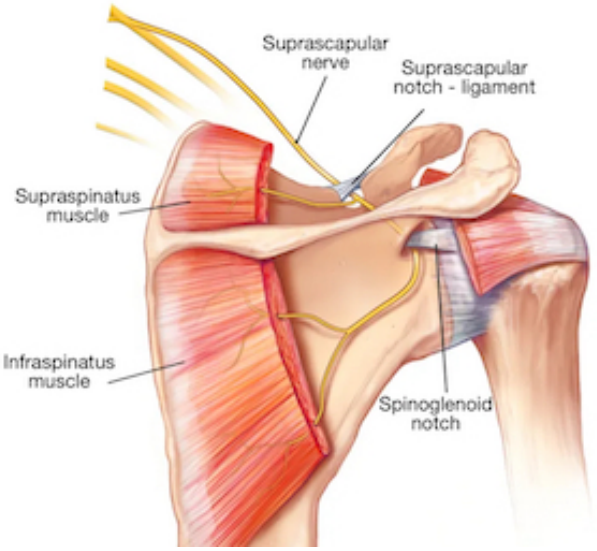

Figure 1: Suprascapular nerve. https://shoulderelbow.org/2017/01/14/suprascapular-nerve-decompression/

Case

A right handed 46-year-old male presents with 3 weeks of left shoulder pain. Pain is mostly posterior, but also involves the lateral aspect of the shoulder. He does not recall any recent or remote shoulder injury. Pain is described as a mild ache, 1/10 in severity. The pain worsens when holding his arm out in front of his body such as when holding a steering wheel or when shaving. Otherwise, there are no other known aggravating factors. He reports no stiffness and no worsening at night interfering with sleep. Review of systems is unremarkable.

Exam reveals muscle atrophy in the infraspinatus fossa with normal muscle mass in the deltoid and supraspinatus fossae. He has painless full active range of motion of his shoulder with 4/5 strength with resisted external rotation with his arm at his side. Deltoid, supraspinatus, and subscapularis muscle strength is 5/5. There is no pain with rotator cuff testing and no tenderness to palpation over the deltoid, posterior shoulder and bicipital groove. Speed's test is negative. Hawkin's and Neer's impingement signs are negative. He has full range of motion at the elbow without pain. Biceps and triceps muscle mass are normal with 5/5strength.

X-ray of the left shoulder were unremarkable. MRI of the left shoulder revealed a large spinoglenoid cyst within the spinoglenoid notch with impingement of the suprascapular nerve. There is evidence of denervation edema of the infraspinatus muscle as well as a posterior labral tear (Figures 2 and 3).

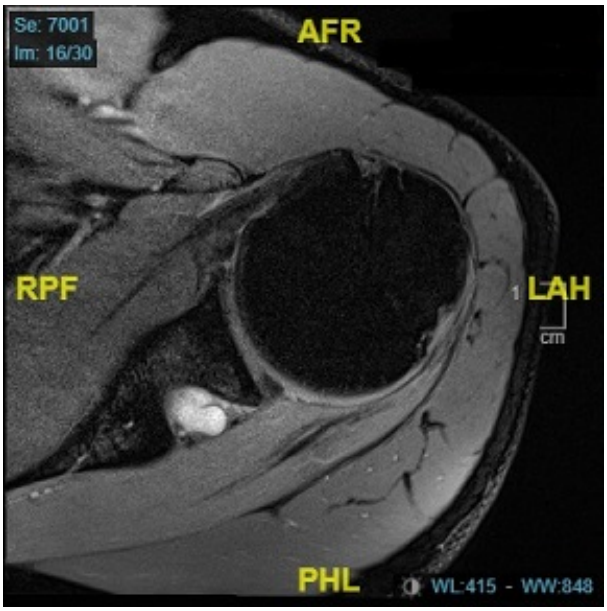

Figure 2: MRI left shoulder axial view of the spinoglenoid cyst.

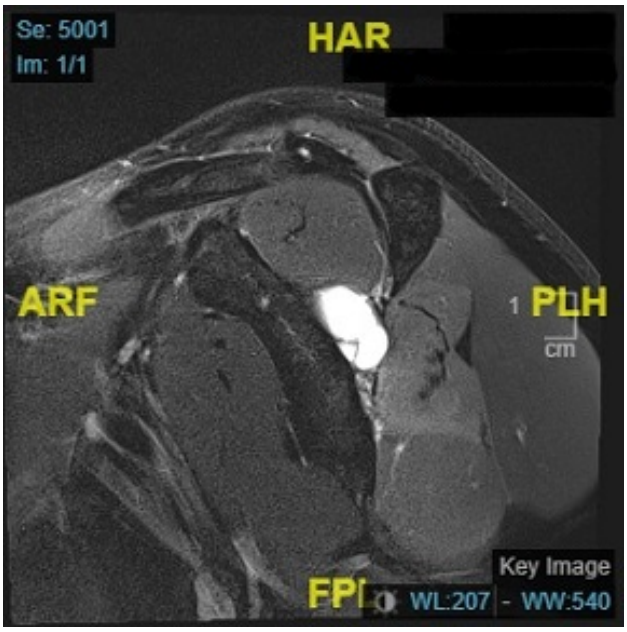

Figure 3: MRI left shoulder sagital view of the spinoglenoid cyst.

The patient was referred to sports orthopedic surgery and underwent shoulder arthroscopy for cyst decompression and posterior labral repair with post-operative physical therapy. By the 3-month postop follow up, he had regained full strength of his infraspinatus muscle and muscle mass returned to normal.

Discussion

Paralabral cysts develop from labral tears. The cysts themselves do not cause pain, but as the cyst enlarges, it can impinge the suprascapular nerve at either the suprascapular or spinoglenoid notch. If the impingement occurs at the suprascapular notch, weakness can develop in both the supraspinatus and infraspinatus muscles. If the impingement occurs at the spinoglenoid notch, infraspinatus weakness can develop. Severe cases can lead to muscle atrophy and permanent nerve damage. Impingement at the suprascapular notch can be accompanied by pain whereas impingement at the spinoglenoid notch generally has little or no pain.[3]

MRI is the preferred imaging modality when there is suspicion for a paralabral cyst causing compression of the suprascapular nerve. EMG/NCS can also be considered when there is suspicion for a suprascapular neuropathy. Suprascapular neuropathies can result from other etiologies including blunt trauma to the shoulder, massive rotator cuff tear, traction injuries, and repetitive motion sports injuries.[1-2,4-6]

Surgical decompression of the cyst with labral repair is the preferred treatment. When treated early, patients have an excellent prognosis. Patients with suprascapular neuropathies caused by nerve impingement from paralabral cysts should be referred to orthopedic surgery for further management.

Conclusion

Shoulder weakness on exam should prompt further investigation, especially if accompanied by muscle atrophy. Delay in diagnosis of a suprascapular neuropathy caused by nerve entrapment can lead to permanent nerve damage and muscle weakness.

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