

CASE REPORT

A RARE CAUSE OF SHOULDER PAIN: SUPRASCAPULAR NERVE ENTRAPMENT NEUROPATHY

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HOW TO CITE THIS ARTICLE:

Mukharjee G. S, Vindhya K, M. Qamar Abdul Azeez, M. Ramachandrudu, M. P. R. Vittal. "A Rare Cause of Shoulder Pain: Suprascapular Nerve Entrapment Neuropathy". Journal of Evolution of Medical and Dental Sciences 2015; Vol. 4, Issue 36, May 04; Page: 6337-6340, DOI: 10.14260/jemds/2015/920

ABSTRACT: Shoulder pain is a common problem with an estimated prevalence of 4% to 26%.¹ Pathology may originate from the neck, glenohumeral joint, acromioclavicular joint, rotator cuff, and other soft tissues around the shoulder girdle. Suprascapular nerve entrapment at spinoglenoid notch is rare but well documented. Kopell and Thompson² are credited with providing the first description of the suprascapular nerve entrapment syndrome.³ This condition is largely underreported, meta-analysis revealed only 88 published reports on suprascapular nerve compression syndrome from 1959 through 2001. We report a case of suprascapular nerve compression at suprascapular foramen the cause of which was not the spinoglenoid cyst or any tumorous swelling like neuroma but a narrow canal at suprascapular foramen, the symptoms of which were relieved after surgical release of transverse scapular ligament.

KEYWORDS: Brachial Plexus Neuritis [C10.668.829.100.500], Nerve Compression Syndromes [C10.668.829.550], Shoulder Pain [C05.550.091.700], Neuroma [C04.557.580.600.610].

INTRODUCTION: The patient presented on 14th June 2011 and was operated on 16th August 2011. A 28 year old right hand dominant manual labourer presented with the complaints of gradual onset of pain and weakness of his right shoulder for more than 1 year duration. No history of trauma or any other illness. Pain was increased after activity and relieved by rest. He did not complain of numbness, or symptoms of root involvement (cervical pain, and change from Valsalva's manoeuvre). His past medical history was negative. He noticed wasting of his scapular muscles from past 8 months. Examination revealed that there was marked wasting of both suprascapular and infrascapular muscles. Full range of movement of right shoulder was present when compared to left side. There was no sensory deficit over left shoulder. Deep tendon reflexes were active and symmetrical with no pathological reflexes. There was no Horner's sign. Neck examination was unremarkable.

Initial diagnosis of suprascapular nerve entrapment at the suprascapular notch was made on the basis of clinical findings. Plain X-rays were unremarkable and nerve conduction studies were done which were suggestive of partial left suprascapular nerve injury proximal to the branch to supraspinatus muscle. This confirmed the diagnosis but not the cause. MRI scan was performed to identify any pathology. It did not reveal any space occupying compressive lesion. The patient underwent decompression of suprascapular nerve decompression at suprascapular notch. The incision was made just above the spine of scapula and suprascapular foramen was identified after careful dissection, preserving the vessel in the suprascapular fossa. There was thickening of the nerve and foramen was very tight. Foramen was dilated and any fibrous tissue was excised. Nerve was found to be completely free at the end of the procedure.

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Postoperative course was uneventful. His pain disappeared over a week and at 6 month follow-up there was gradual improvement in the power of supra and infraspinatus muscle.

DISCUSSION: There are many causes of suprascapular nerve dysfunction. These include trauma (scapular fractures, clavicular fractures, shoulder dislocations, and penetrating trauma) repetitive overuse, a mass lesion, or iatrogenic causes may occur during operative procedures.^{1,2,4} Thomas³ suggested that the nerve passes through two narrow osteofibrous openings (“deux canaux étroits ostéofibreux”), the suprascapular and spinoglenoid notches, representing two rings over which the nerve is pulled. This makes the nerve particularly vulnerable to traction and/or compression. He also described provocative test with the patients arm in abduction and pushed backward to relax the deltoid muscle, pressure is applied with index finger into the neck of the spine of scapulae where the spinoglenoid notch is presumably located. This will cause an unpleasant feeling in the patient’s shoulder area with painful radiation to the outer part of the upper arm. A branch of the upper trunk of the brachial plexus, containing fibers from fifth and sixth cervical roots, the suprascapular nerve runs deep to the trapezius and passes through suprascapular foramen and spinoglenoid notch.

In its course it supplies suprascapular, infrascapular muscles as well as gives branches to acromioclavicular and glenohumeral joints. Selective entrapment of suprascapular nerve at spinoglenoid notch due to intrinsic and extrinsic factors leads to isolated infraspinatus dysfunction. This is more often the case and has been well documented.⁵ However, compression at suprascapular notch is less well documented. When compression does occur in the suprascapular notch, most of the time the reason is supraglenoid cyst as reported by Moore et al.⁶ It is rare for compression to occur due to narrowing of the notch in the absence of cyst as occurred in our case. Our case differs from many reported in the literature as compression of the suprascapular nerve was due to a congenitally narrow suprascapular notch in the absence of cyst; whereas majority are due to compression of nerve due to ganglion in spinoglenoid or suprascapular notch.

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Figure 1 : Pre op picture showing atrophy of suprascapular and infrascapular muscles.



Figure 2 : Intra O. P. picture exposing suprascapular foramen



Figure 3 : Intra O. P. picture exposing site of incision

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FINANCIAL OR OTHER

COMPETING INTERESTS: None

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Date of Submission: 22/04/2015.
Date of Peer Review: 23/04/2015.
Date of Acceptance: 28/04/2015.
Date of Publishing: 04/05/2015.