

SUPRASCAPULAR NERVE ENTRAPMENT SECONDARY TO COMPRESSION AT SUPRASCAPULAR NOTCH: A CASE REPORT

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ABSTRACT

Suprascapular nerve entrapment at spinoglenoid notch is rare but well documented. Kopell and Thompson (1) are always credited with providing the first description of the suprascapular nerve entrapment syndrome in English literature (2,3) but in fact the first description of suprascapular nerve entrapment was provided by André Thomas in La Presse Médicale, entitled "La paralysie du muscle sous-épineux in 1936" (4,5). We report a case of suprascapular nerve compression at suprascapular foramen.

Key words: suprascapular nerve, supraspinatus, infraspinatus, muscle wasting

CASE REPORT

The case site is The Aga Khan University Hospital in Karachi, Pakistan. The patient presented at the Orthopaedic clinic on 16th February 2010 and was operated on 11th March 2010.

A 35 year old right hand dominant cook presented with the complaints of gradual onset of pain and weakness of his left shoulder for more than two years duration. No history of trauma or any other illness. Pain was increased after activity and relieved by rest. He also noticed wasting of his scapular muscles. Examination revealed that there was marked wasting of both suprascapular and infrascapular muscles (Figure 1). Full range of movement of left shoulder was present when compared to right side. There was no sensory deficit over left shoulder. Neck examination was unremarkable.

Figure 1

Atrophy of supra spinatus and infra spinatus



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. 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 (6).

Thomas (4) 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 suprscapular 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 (7). 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* (8). 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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