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Case Report

Arthroscopic decompression of paralabral cyst around suprascapular notch causing suprascapular neuropathy

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ABSTRACT

A case of 22 year old male gymnast, who suffered from suprascapular neuropathy due to compression of suprascapular nerve by paralabral cysts around suprascapular notch, leading to marked atrophy of supraspinatus and infraspinatus muscles. After arthroscopic decompression of paralabral cysts, weakness and atrophy of the supraspinatus and infraspinatus muscles improved.

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1. Introduction

Suprascapular nerve entrapment can be caused by a variety of anatomic and pathologic entities as the nerve courses from the brachial plexus (C5–C6) through the suprascapular and spinoglenoid notches to innervate the supraspinatus and infraspinatus muscles.¹ Suprascapular neuropathy can be presented as pain located in the posterior and lateral aspect of the shoulder, or as weakness, with little or no pain, whereas other patients may be completely asymptomatic.² Suprascapular neuropathy is an uncommon cause of shoulder pain and weakness and therefore is frequently misdiagnosed. As a consequence, misdiagnosis can lead to inappropriate conservative treatment or unsuccessful surgical procedure.³ In this

study, paralabral cysts were the cause of suprascapular nerve entrapment.

2. Case report

We are reporting a case of 22 year old male gymnast, who sustained injury to his left shoulder 6 months back while lifting up a heavy object from the ground, following which he developed pain in left shoulder. Pain was persistent, diffuses, aggravated with overhead activity. He underwent physiotherapy for the same and received significant pain relief. Then patient presented to OPD with complaints of progressive weakness in left shoulder leading to limitation in performing routine activities, particularly lifting heavy objects with left

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Fig. 1 – Pre-operative clinical picture.

Fig. 2 – Pre-operative MRI of left shoulder.

upper limb. On physical examination significant weakness was found in abduction (90) and in external rotation (15). Marked atrophy of the supraspinatus and infraspinatus was also found (Fig. 1). Power grading for supraspinatus and

infraspinatus was 3/5. There was no sensory loss detectable in the left upper extremity. All passive ROM around left shoulder joint were normal and painless.

MRI of the left shoulder showed multiloculated cystic lesion abutting the anterior labrum along the anterior surface of glenoid measuring 40×7 transversely, extending posteriorly and superiorly through suprascapular notch into the intramuscular planes of supraspinatus muscles, indenting neural bundle in the notch, with diffuse atrophic changes in supraspinatus and infraspinatus, suggestive of denervation (Fig. 2).

The arthroscopic decompression of the paralabral cysts was planned. Paralabral cysts adjacent to the suprascapular notch causing compression of the suprascapular nerve were decompressed arthroscopically, while cysts within the supraspinatus muscle could not be reached arthroscopically. Subsequently, it was planned that if patient remained symptomatic, open surgery will be done to decompress the cysts. Post-operative MRI showed persistent cysts in the suprascapular region (Figs. 3 and 4). After 6 months follow up, pain, weakness and atrophy of the supraspinatus and infraspinatus muscles improved (Fig. 5).

3. Discussion

Paralabral cysts are swellings that arise around the socket of the shoulder joint (glenoid). They are pockets of joint fluid that develop outside of the joint under tears of the labrum. The cysts can be diagnosed on an MRI scan, or MR Arthrogram. These may occur anywhere around the glenoid. Often the cysts themselves don't cause any pain, but the labral tears can cause pain. The cysts may become very large and can press on some of the important nerves around the shoulder. This can cause pain and also weakness of the muscles supplied by the nerve. The commonest nerve affected is the suprascapular nerve. The suprascapular nerve can be compressed at the spinoglenoid notch with a posterior labral tear or at the suprascapular notch. This can lead to suprascapular nerve palsy. Inferior labral tears can cause inferior paralabral cysts which may press on the axillary nerve. Treatment for paralabral cysts causing nerve compression involves arthroscopic repair of the labral tear, as well as decompression of the nerve and drainage of the cyst.⁴⁻⁷

Suprascapular nerve entrapment is a cause of shoulder pain and weakness. Suprascapular neuropathy is infrequent, causing only 1%–2% of diagnoses for shoulder pain.⁸ It occurs at

Fig. 3 – Post-operative MRI of left shoulder axial cuts image.

Fig. 4 – Post-operative MRI of left shoulder coronal cuts image.

Fig. 5 – Clinical picture 6 months post-operative.

either the suprascapular notch, resulting in weakness and atrophy of both the infraspinatus and the supraspinatus, or at the spinoglenoid notch, resulting in only infraspinatus weakness. EMG and NCV are the relevant investigations which can help in early diagnosis of suprascapular neuropathy. Constraint of the nerve is commonly caused by its course through the suprascapular notch under the transverse scapular ligament or through the spinoglenoid notch under the spinoglenoid ligament, as well as compression by supraglenoid and paralabral cysts. Although conservative treatment such as physiotherapy can be recommended for suprascapular neuropathy, it is not successful in cases of nerve compression or space occupying lesions, which require surgery. Whereas pain relief after surgery has been consistent, the return of muscle strength and shoulder function is less predictable.^{9,10}

4. Conclusion

Suprascapular neuropathy should be considered in the differential diagnosis of shoulder pain, especially when other

common causes of shoulder pain have been excluded. It is sure that arthroscopic decompression of the suprascapular nerve is technically challenging, but less invasive and potentially a more effective way to treat suprascapular neuropathy.

Conflicts of interest

All authors have none to declare.

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