



Coracoclavicular Calcification Treated by Arthroscopy: A Case Report

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Keywords

Coracoclavicular conflict; Shoulder arthroscopy; Calcification shoulder.

Introduction

The distal part of the clavicle is held to the scapula by the acromioclavicular capsulo-ligamentary complex, the trapezoid-deltoid clevis and the trapezoid and conoid ligaments stretched between the superior aspect of the coracoid process and the inferior aspect of the ¼ outer clavicle.

Coracoclavicular conflicts of the shoulder are rare pathological entities and very little described in the literature. The case of our patient is proof of this with a 5-year therapeutic errancy on chronic pain of the right shoulder for which medical treatments by rehabilitation and glenohumeral, subacromial and acromioclavicular infiltrations remained ineffective.

Case Presentation

This is a 39-year-old female patient, with no history of upper limb trauma, followed up between 2013 and 2018 for right scapular pain labeled "tendinopathy and subacromial impingement".

Medical treatments never relieved her pain: Physiotherapy, infiltrations of the acromioclavicular joint (very moderate effectiveness of xylocaine, ineffectiveness of corticoids) and scapulohumeral joint, analgesics, rest.

She was referred to the department for pain resistant to medical treatment: On examination, the shoulder was supple but painful, with normal active amplitudes, but with increased pain in anterior elevation. She had no long biceps pain or signs of frank subacromial impingement, but she had severe pain (VAS 7/10) on pressure of the distal part of clavicle. The cross arm test was inconclusive.

The shoulder X-rays showed a type 1 acromion with a CSA (Critical Shoulder Angle) of 31°, without reporting any coracoclavicular abnormality at first sight. The arthro-scanner performed on this patient found calcification of the trapezoid tendon at its clavicular insertion with an obvious coracoclavicular impingement.

A xylocaine infiltration test of this calcification was performed, which resulted in complete resolution of impingement pain. A resection of the sub-clavicular calcification was decided upon following a good response to the xylocaine test.

Under arthroscopy, using a lateral and anterior instrumental approach, a bursectomy of the subacromial joint was performed without going intra-articular: A preserved subacromial space was found. A dissection of the bursa was performed up to the inferior aspect of the distal ¼ of the clavicle at the VAPR: evidence of a reduced coracoclavicular space (<5 mm). A per operative dynamic pressure operation on the clavicle confirmed a real coracoclavicular impingement.

Using a motorized cutter, abrasion of the sub-clavicular calcification located opposite the clavicular insertion of the trapezoid ligament was performed while preserving the conoid. A dynamic operation using postoperative clavicular pressure ensured that this conflict disappeared.

The postoperative follow-up was simple, with the arthroscopic entry points closed to the strips on Day 1. She was discharged on Day 1 with a rehabilitation protocol without any limitation of mobility. Force work was allowed after full recovery of the amplitudes joint.

She was seen in consultation at 3 weeks and 3 months with complete resolution of her pain, recovery of all passive and active range of motion without pain. The control radiographs did not reveal any acromioclavicular subluxation or dislocation and a disappearance of coracoclavicular

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calcification.

Discussion

The coracoclavicular ligaments are remnants of the embryonic pro-coracoid cartilage (1) [1]. In about 6% of normal subjects both ends of the pro-coracoid remain cartilaginous. The pro coracoid may ossify. When its clavicular portion undergoes this transformation, a tubercle is formed on the clavicle. If its lower portion ossifies, the two processes can form a joint (1% of shoulder X-rays).

Chen et al. [2] report two most frequent causes of coracoclavicular calcification with trauma [3], which has a rather punctiform appearance (36%) and chronic kidney disease, which has a rather tumors appearance (28%). Ankylosing spondylitis has also been reported as a cause of coracoclavicular calcification [4,5]. The patient presented in this case report had no such history.

Three types of calcifications have been reported [2]: Punctate calcifications [4], ossifications with or without joint formation, and mass tumour calcifications.

In the literature, coracoclavicular pain is mostly reported and described in patients with a true "coracoclavicular joint" [6,7], so the incidence varies between 0.04% and 27%. Like all joints, they could be affected by rheumatic arthritis or osteoarthritis [1]. The case reported by Cheung et al. [6] presents clinical characteristics like clinical case presented here. The pain was in front of the left clavicle on anterior rising of the arm.

As far as the treatment of this condition is concerned, the only cases described in the literature of this type of conflict have not been treated by arthroscopy. They were described at a time when arthroscopy was not very developed for shoulder. Treatment, when surgical, consisted of open resection [1,3,6]. The approach allowing access to the coracoclavicular space is difficult and invasive and does not allow good visualization of calcifications.

The current challenge is the early detection of these conflicts on clinical examination, as described in the literature, a painful and limited anterior elevation with normal glenohumeral abduction

seems to be a sign of coracoclavicular conflict because of a greater mobilization of the clavicle in these movements. X-rays, but especially CT scans with 3D reconstruction, are indispensable aids in the diagnostic process. The xylocaine test is also described as necessary in predicting a good surgical result.

Conclusion

Coracoclavicular calcifications are rare conditions with very few cases described in the literature. This can lead to diagnostic difficulties and yet the sub-clavicular space is easily accessible by arthroscopy. The technique described in this article is simple and allows an efficient and rapid management. The functional and aesthetic damage remains intact compared to the open surgery described until now for this type of pathology.

Arthroscopy offers a real advantage in the management of symptomatic coracoclavicular calcification, but this clinical entity should not be overlooked in front of painful anterior elevation with normal glenohumeral joint on radiography.

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