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CASE REPORT

Calcific tendinitis of the biceps-labral complex : A rare cause of acute shoulder pain

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Calcific tendinitis most commonly affects the rotator cuff and has not been previously reported affecting the biceps-labral complex. We report a case of calcific tendinitis of the biceps-labral complex attachment, a rare cause of acute, severe shoulder pain. Clinically, it can be misdiagnosed as supraspinatus tendinitis or septic arthritis of the shoulder joint. Non-operative treatment failed to resolve the symptoms. Arthroscopic debridement of the calcific deposit resulted in resolution of symptoms. Knowledge of this clinical condition and its imaging features is crucial for a correct diagnosis of this uncommon cause of shoulder pain.

Keywords : **c**alcific tendonitis ; biceps-labral complex ; shoulder joint ; MRI.

INTRODUCTION

Calcific tendinitis accounts for 40-45% of patients with shoulder pain (*5*). It is most often located at the insertion of the supraspinatus tendon on the greater tuberosity, or less frequently at the other three tendons of the rotator cuff. A series of 11 cases of calcific tendinitis of the extra-articular portion of the tendon of the long head of the biceps brachii close to its junction with the muscle has been reported (*2*). We know of no report on calcific tendinitis occurring at the biceps-labral complex. We believe that calcific tendinitis of the biceps-labral complex should also be considered in the differential diagnosis of acute shoulder pain.

CASE REPORT

A 35-year-old male baseball player visited our hospital with complaints of pain and severe restriction of movements of the left shoulder of one week duration, without any specific trauma. On physical examination, the skin over the lateral aspect of the shoulder joint was normal, without any fullness or puffy appearance. Gentle palpation around the shoulder joint intensified the pain to an intolerable degree. Elbow flexion and extension were normal. Rotator cuff testing was restricted by pain. All laboratory data were within normal limits. Anteroposterior and oblique radiograph of the left shoulder joint showed a calcification at the superior part of the glenoid fossa (fig 1). This calcification was located in the vicinity of the long head of the biceps tendon near its attachment to the superior margin of the glenoid. In order to confirm the exact

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Fig. 1. — Plain radiograph of the left shoulder shows calcification in the superior glenoid fossa.

Fig. 2. — MRI (a) T1-weighted sequence shows a decreased signal intensity corresponding with the calcification at the postero-superior glenoid labrum (b) a sagittal T2-weighted sequence shows a focal peripheral high-intensity rim around the lesion suggesting oedema at the postero-superior part of the biceps-labral complex associated with glenohumeral joint effusion.

location of the lesion, magnetic resonance imaging (MRI) was performed using a 1.5 Tesla Gyroscan (Philips, Eindhoven, The Netherlands) with fat suppressed proton density T1 and T2-weighted sequences. The T1- weighted sequence showed decreased signal intensity at the postero-superior glenoid labrum corresponding with the calcified lesion (fig 2a) and the sagittal T2- weighted sequence showed focal peripheral high-intensity rim around the lesion suggesting oedema at the postero-superior part of the biceps-labral complex, associated with glenohumeral joint effusion (fig 2b).

Based on the MRI findings, the patient was treated with analgesics, local steroid injection and physical therapy for 8 weeks. The symptoms failed to resolve and an arthroscopy was performed. The glenohumeral joint was inspected systematically through a posterior portal with a probe into the antero-superior portal. Erythema and increased vascularity commonly found with calcific tendinitis were not observed on the articular surface of the rotator cuff. The biceps tendon was inspected from its superior labral attachment laterally to the bicipital groove and then the biceps tendon was pulled with a probe further into the joint to inspect the portion lying within the intraarticular groove. The biceps tendon did not show any signs of inflammation or tearing.

During probing and needling of the biceps-labral complex and the posterior superior glenoid labrum, small amounts of cheese like substance were observed to adhere to the needle (fig 3a). We did not observe a lesion of the superior labrum anterior and posterior (SLAP). Further probing of the biceps-labral complex and the posterior superior glenoid labrum with an 18G needle discharged a large amount of calcified substance. We removed the calcified substance with a shaver through the anterosuperior portal, and then moved the arthroscope to the anterosuperior portal and the shaver to the posterior portal to remove the remaining calcified substance (fig 3b). Finally, the subacromial space was inspected. No evidence of rotator cuff tear, calcific tendinitis or impingement pathology was found. After thorough irrigation of the joint, the skin portals were closed with an interrupted suture. The arm was supported in a sling and the patient was allowed to start range of motion exercises as tolerated.

Ten days after the arthroscopic procedure, the patient was satisfied with the relief of pain and the rapid improvement of shoulder motion. We further advised him not to start any overhead throwing activities for 3 months. A program of shoulder strengthening exercises was followed. After 3 months the patient demonstrated normal shoulder

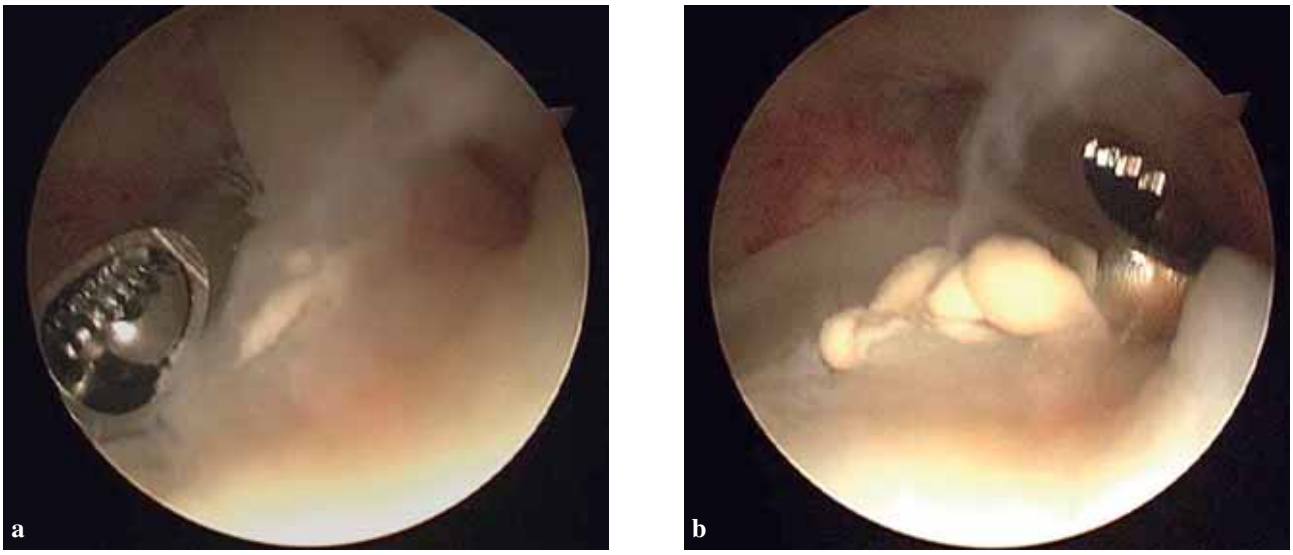

Fig. 3. — Arthroscopic findings. (a) needling of the posterosuperior labrum reveals calcific deposit (b) compression of the posterosuperior labrum with the shaver releases a large amount of calcified substance.

motion and strength and started playing baseball without any difficulty.

DISCUSSION

Calcific tendinitis of the biceps-labral complex is an uncommon condition which is not well described in the literature. Our patient was involved in overhead throwing motions. The long head of the biceps brachii muscle helps to stabilise the humeral head especially during abduction and external rotation (*6*) and appears to be moderately active during overhead throwing (*4*). Traction on the long head of the biceps tendon is thought to be a critical component for the development of SLAP lesions in throwing athletes (*1*). Tendinitis of the long head of the biceps brachii is cited as a frequent cause of shoulder pain (*8*). It may occur as an isolated entity, but often coexists with rotator cuff tendinitis or impingement. Rathbun and Macnab (*7*), in a microvascular injection study of the shoulder, showed a critical zone in the long head of the biceps tendon similar to that seen in the supraspinatus. This critical zone of avascularity was primarily in the intracapsular portion of the tendon. We believe that repetitive throwing in our patient caused microtraumatic stresses on the biceps-labral complex attachment mainly on the posterosuperior part of the glenoid labrum, which might have caused localised damage, deterioration of blood circulation and finally calcific tendinitis.

Pain in the anterior aspect of the shoulder is the usual presenting complaint of patients with bicipital tendon disorders and often is located within the bicipital groove (*8*). The pain of bicipital tendinitis radiates over the anterolateral humeral head and shaft and in supraspinatus tendinopathy it is referred to the distal insertion of the deltoid (*3*). In our case symptoms were acute and of short duration, mimicking septic arthritis. We ruled out infective pathology by relevant laboratory investigations. The severity of pain and shoulder restriction may also be confused with acute brachial plexitis (Parsonage-Turner syndrome), but pure neurological findings are absent and the elbow, wrist and hand function are spared.

Standard radiographs are indispensable to the diagnosis of calcific tendinitis. Calcifications within the long head of the biceps are ovoid in nature and frequently seen adjacent to the upper portion of the glenoid, and the position of these deposits is unchanged by external or internal rotation of the humerus (*2*). One of the differential diagnoses of calcific tendinitis of the biceps-labral complex is a

trapped loose body in the biceps tendon sheath. Any density related to the biceps tendon will be medial on the internal rotation view, lateral on the external rotation view and anterior on the axillary projection. Although it is not necessary for diagnosis, MRI is especially helpful when the calcific deposit is located in an unusual position. In our case MRI scan accurately showed calcification on the postero-superior part of biceps-labral complex.

Calcific tendinitis is regarded as a self-healing condition that usually undergoes spontaneous resolution and in most patients calcific tendinitis can be successfully treated non-operatively. Since conservative treatment failed in this case, we opted for surgical treatment because of the persistent severity of symptoms affecting daily activities. Arthroscopic debridement provided early rehabilitation. Care should be taken not to divide the tendon at surgery ; there is a theoretical risk that the debrided tendon may rupture postoperatively.

In summary, calcific tendinitis of the biceps-labral complex is a rare entity causing shoulder pain in overhead sports. It should be included in the differential diagnosis of acute shoulder pain.

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