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Atypical localizations of calcific deposits in the shoulder

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ABSTRACT

INTRODUCTION: Calcific tendinopathies of the shoulder are due to inflammation around deposits of calcium within periarticular tendineal structures.
PRESENTATION OF CASES: We present three cases of atypical localization of calcium deposits in the shoulder. All of the cases have been treated with arthroscopic excision, followed by post-operative rehabilitation, regaining excellent results. Patients were evaluated 6 months after surgery using the Visual Analogue Scale (VAS), the Simple Shoulder Test (SST) and the UCLA modified shoulder rating.
DISCUSSION: Calcific tendinopathy is a self-limiting condition or is successfully treated with conservative therapy especially during the early phases of the pathology. If conservative measures fail, removal of calcium deposits is recommended. Arthroscopic management showed good results in our three cases.
CONCLUSION: We suggest that arthroscopic treatment of calcific tendonitis guarantees good results even when calcium deposits are in atypical locations.

1. Introduction

Calcific tendinopathies of the shoulder are due to inflammation around deposits of calcium hydroxyapatite crystals [1–8] within periarticular tendineal structures. These conditions represent 6.8% of all painful shoulders. Mean age of onset varies between 40 and 60 years [2]. Females are more affected than males (57–76%) [2] and, typically, calcifications are more frequent in the dominant shoulder. The prevalence reported of asymptomatic calcifications in the rotator cuff is about 2.7–20% [1].

The most commonly affected tendon is the supraspinatus tendon at about 1.5 cm from its insertion on the humerus trochanter (critical zone), being involved in 51–82% of cases. More rarely, it is located on the infraspinatus (15–30%), the subscapularis (10%), or the teres minor (<10%). Calcifications in the region of the long head of the biceps tendon have rarely been detected [3].

We present the case reports of three patients with calcium deposits in atypical locations of the shoulder.

2. Presentation of cases

2.1. Case 1

A 48-year-old woman, a professional teacher, had experienced pain in her right (dominant) shoulder for 11 years with exacerbation of symptoms in the two months prior to the first visit and severe functional impotence. The MRI showed a massive shoulder calcium deposit in the supraspinatus muscle belly and widespread hypertrophic subacromial bursitis (Fig. 1a and b). The patient underwent a series of 10 sessions of physiokinetic therapy to improve the static and dynamic scapular posture, with the recovery of the propriocettivity, and manual treatment of contractures affecting cervical paravertebral muscles and the scapular elevator muscle. Furthermore, she underwent a series of local physical therapy, including tecar (capacitive and resistive energy transfert) therapy and ultrasound during 8 sessions and an infiltration of Depomedrol. After the failure of the conservative therapy and the persistence of pain and functional impotence, surgery was carried out. Arthroscopic surgery was then performed to remove the calcium deposit from the muscle belly and for bursectomy (Fig. 2a–c). Post-operatively, the patient wore a brace for the shoulder in abduction of 15° for 14 days with gradual removal for 10 additional days and started a program of assisted physiotherapy from the 5th post-operative day. The physical therapy included articular mobilization of the shoulder and shoulder girdle, assisted mobilization of the shoulder, manual therapy, reinforcement exercises of the periscapular muscles and active mobilization of the elbow and wrist. Later, starting from the 9th week, the intensity of muscular work was increased by the introduction of resistance excercises, water exercises, spiral movements, enhancement of the frequency of the therapeutic exercise, perturbed closed kinetic chain exercises, standing on unstable surfaces, throwing, dynamic stabilization, reproduction of specific gestures, and swimming.

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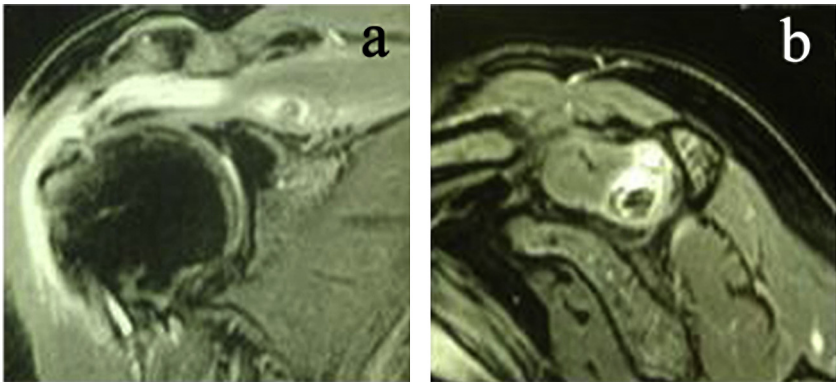

Fig. 1. (a, b) MRI images of calcific supraspinatus intramuscular deposit.

2.2. Case 2

A 58-year-old businessman, who practiced sports (body-building, fitness and skiing), had experienced pain in his left (non-dominant) shoulder for about 6 months, especially at night and during movements of abduction. Clinical evaluation revealed a diagnosis compatible with supraspinatus insertional pain and suffering of the long head of the biceps. X-ray and MRI showed a lesion of the supraspinatus and the presence of a calcium deposit located in the biceps anchor (Fig. 2e and f). The patient underwent a series of 12 sessions of physiokinetic therapy to improve the static and dynamic scapular posture, achieving the recovery of the propriocettivity. Furthermore, he underwent a series of local physical therapy (laser therapy and ultrasound) during 6 sessions and an infiltration of Depomedrol followed by 3 infiltrations of low molecular weight hyaluronic acid. After the failure of the conservative therapy and the persistence of pain and functional impotence, arthroscopic surgery was carried out on the tenotomy of the long head of the biceps, as well as removal of the calcium deposit associated with reconnection of the supraspinatus with two metal anchors (Fig. 3b–e). Post-operatively, the patient wore a brace for his shoulder in abduction of 15° for 34 days with a gradual removal in the subsequent 10 days. He began a program of assisted physiotherapy from the 20th post-operative day, according to the same protocol described in the previous case. The post-operative X-ray showed the disappearance of the calcification and the presence of two metal screws (Fig. 3f).

2.3. Case 3

A 43-year-old woman, a professional agent, who practiced sports (swimming and cycling), had experienced pain in her right (dominant) shoulder for about 4 months, especially at night and in the movements of internal rotation of the shoulder. The MRI showed the presence of a massive calcium deposit in the most cranial intra-articular component of the subscapularis tendon (Fig. 4a

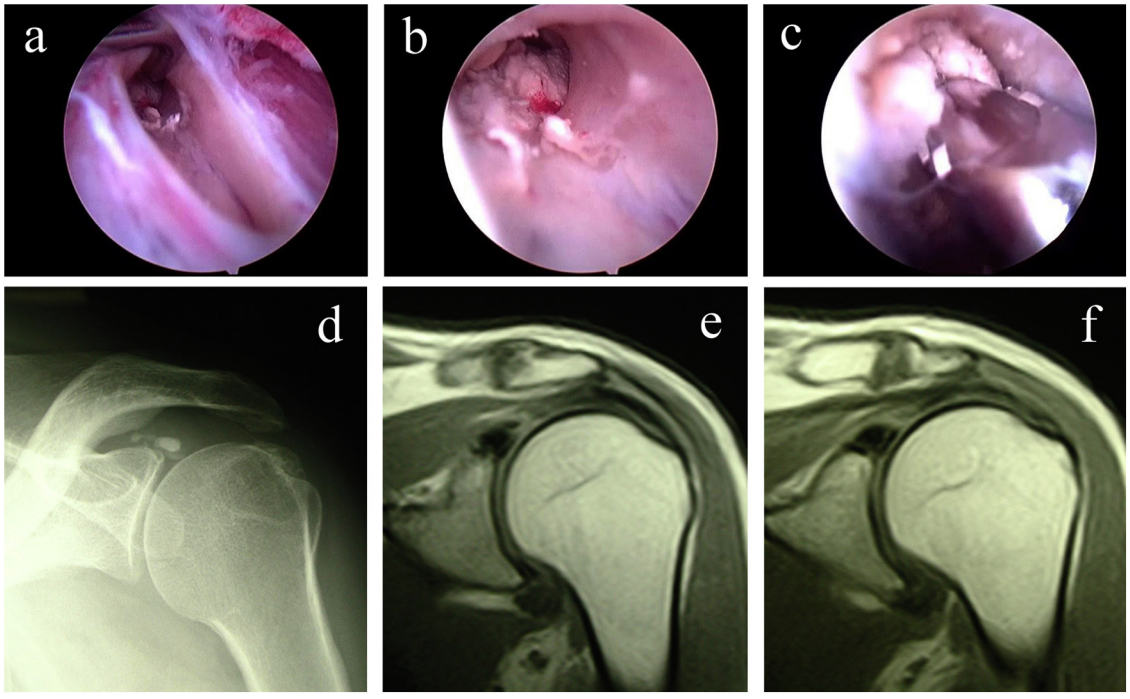

Fig. 2. (a) Arthroscopic image of the bursal side of the supraspinatus muscle: with the aid of a tracer, introduced from the posterior access port with a lateral optical port, the intramuscular space that contains the calcium deposit is detected after performing an accurate bursectomy using a motorized shaver. In this picture, the calcium deposit is visible below the tip of the tracer. (b) Intramuscular arthroscopic image: the calcium deposit can be identified. (c) Intramuscular arthroscopic image: procedure for the removal of the calcium deposit using motorized drill. (d) X-ray of calcification at the biceps anchor. (e, f) MRI pictures of calcification in the bicipital anchor.