

# SYNOVIAL OSTEOCHONDROMATOSIS : AN UNUSUAL CAUSE FOR SUBACROMIAL IMPINGEMENT

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**Impingement syndrome is usually caused by encroachment on the rotator cuff of the acromion, coracoacromial ligament, acromioclavicular joint or coracoid process. Bursal causes of impingement are rare but include rheumatoid thickening, and thickening from previous and iatrogenic causes such as sutures, pins, or wires left from previous surgery. We report a case of synovial osteochondromatosis presenting as chronic impingement syndrome. Synovial osteochondromatosis may be difficult to differentiate from chronic calcific tendinitis, but we describe a radiological sign and its anatomical basis that can differentiate between the two. If densities are seen on plain radiographs distal to the greater tuberosity, then loose bodies within the subacromial bursa should be considered.**

**Keywords :** biceps brachii tendinitis ; osteochondromatosis ; impingement syndrome ; subcranial bursitis ; supraspinatus tendinitis.

**Mots-clés :** conflit sous-acromial ; ostéo-chondromatose synoviale ; tendinite de la coiffe des rotateurs ; tendinite du biceps brachial.

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## CASE REPORT

A 59-year-old woman presented with a 2 year history of insidious onset of true right shoulder pain. The pain was exacerbated by overhead activity, reaching and driving, and was present at night. On examination there was tenderness over the impingement area, and there was a classic painful arc of movement from 90° with increasing pain up to 170°. External rotation was symmetrical at 30°, and internal rotation was symmetrical to T7. There was a click on extension, and rotator cuff power was normal.

Radiographs showed some sclerosis under the acromion, ossification within the coracoacromial

ligaments and densities both above and below the greater tuberosity (fig. 1).

She failed to respond to local anesthetic and hydrocortisone injection within the bursa and was therefore scheduled for an anterior acromioplasty with excision of the calcifications.

When the bursa was opened six chondral loose bodies were seen, and the bursa was found to be markedly thickened with a superficial side partial tear of the supraspinatus 10 mm by 5 mm. There was no communication between the bursa and the glenohumeral joint. The partial thickness tear was repaired and an anterior acromioplasty performed using the Rockwood two-stage modification of the Neer procedure.

She initially did well but required a manipulation 3 months postoperatively and following this made a good recovery.

## DISCUSSION

Synovial osteochondromatosis is a proliferative disorder of the subsynovial soft tissue in which chondral or osteochondral nodules form from undifferentiated stem cells. The condition most commonly occurs in joints and is rare in bursae and tenosynovial structures (1).

A search of the world literature revealed only two previous reports of subacromial synovial

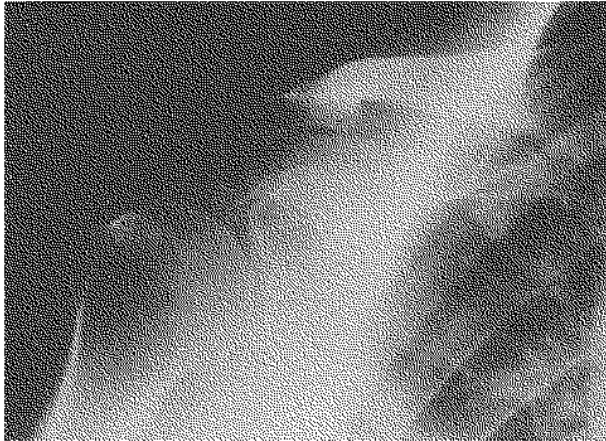
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**Fig. 1.** — AP (a) and lateral (b) x-ray of the shoulder show ossifications above and below the greater tuberosity.

osteocondromatosis, one in the French literature (2) and one in the English literature (3). In both these cases massive ossified loose bodies were seen on preoperative radiographs. In our case the loose bodies were small, ranging from 5 mm to 8 mm in diameter, and the radiographs were reported by a radiologist as showing “calcification within the tendon of supraspinatus”. However they did not have the amorphous aspect of calcifications but looked like real ossifications. Furthermore, the calcified opacity lateral to the long head of the biceps was unusual and anatomically could not be within the supraspinatus tendon, as it was below the lowest point of insertion.

A similar appearance has been described in the radiological literature (4), but has been termed calcification of the long head of the biceps distal to the glenohumeral joint. In that study 119 cases of calcification around the shoulder joint were reviewed radiologically, and of these 11 were found to have calcification distal to the glenohumeral joint, lateral to the bicipital sulcus as in our case. To our knowledge none of these patients were surgically explored to confirm the radiologist's hypothesis that this was calcification of the long head of biceps tendon and not, as in our case, a calcified loose body within the subacromial bursa. Dissections (5) have shown how the subacromial bursa sits on the front of the humeral head overlying the course of the long head of the biceps and this might mean that loose bodies within the subacromial bursa may be more common than was previously thought.

If densities around the shoulder joint are seen on radiographs distal to the greater tuberosity, then loose bodies within the subacromial bursa should be considered, especially if these densities have the aspect of ossifications.

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### SAMENVATTING

*A. DE FERM, K. LAGAE, T. BUNKER. Synoviale osteochondromatose : zeldzame oorzaak van subacromiaal impingement.*

Subacromiaal impingement syndroom wordt meestal veroorzaakt door contact tussen het acromion, coracoacromiaal ligament, acromioclaviculair gewricht of processus coracoideus enerzijds, en de rotator cuff anderzijds. Oorzaken in de bursa zoals rheumatoïde bursitis en suturen na vroegere heilkunde zijn zeldzaam. Een casus van subacromiale impingement door synoviale osteochondromatosis wordt voorgesteld. Deze pathologie is moeilijk te onderscheiden van calcifierende tendinitis. Het radiologisch beeld en de anatomische basis worden beschreven. Wanneer op de rontgenopname distaal van de grote trochanter densificaties worden gezien, dient aan de mogelijkheid van synoviale osteochondromatose gedacht te worden.

### RÉSUMÉ

*A. DE FERM, K. LAGAE, T. BUNKER. Ostéochondromatose synoviale : cause inhabituelle de conflit sous acromial.*

Le conflit sous-acromial est en général causé par des lésions de la coiffe des rotateurs provoquées par l'excroissance acromiale, le ligament coraco-acromial, l'articulation acromio-claviculaire ou le processus coracoïde. La bourse synoviale est exceptionnellement cause de conflit mais le devient en cas d'augmentation de volume d'origine rhumatoïde ou secondaire à des interventions antérieures, notamment la présence de fils de cerclage ou de broches. Les auteurs rapportent un cas d'ostéochondromatose synoviale se présentant comme un conflit sous-acromial chronique. Le diagnostic différentiel peut être difficile d'avec une tendinite calcifiante chronique mais les auteurs décrivent un signe radiologique, et son substrat anatomique, qui permet la différentiation. Si, quelques îlots denses se voient à la radiographic standard sous la grosse tubérosité, la présence de corps libres dans la bourse sous-acromiale est probable.