

# Arthroscopic Treatment for Calcific Tendinitis of Origin of Long Head of Triceps

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A 55-year-old female experienced acute left shoulder pain without specific trauma. Radiography showed calcific deposits in the inferior part of the glenoid fossa. Magnetic resonance arthrography showed calcific deposits in the origin of the long head of triceps brachii muscle. Conservative treatment failed to resolve the symptoms; therefore, arthroscopic surgery was performed. The patient experienced immediate and dramatic pain relief, and normal shoulder motion was demonstrated 1 year after surgery. In conclusion, although rare, calcific tendinitis of the triceps brachii muscle, which causes shoulder pain, should be included in the differential diagnosis of acute shoulder pain. Arthroscopic surgery is a treatment option for chronic cases and those resistant to conservative treatment.

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**Key Words:** Calcification; Tendinopathy; Shoulder joint; Arthroscopy

Calcific tendinitis of the shoulder is a common cause of acute or chronic painful conditions. Calcium deposits have been reported in 7.5% to 20.0% of asymptomatic adults.<sup>1)</sup> An estimated 7% of painful shoulder cases are caused by calcific tendinitis.<sup>2)</sup> The presence of calcific deposits inside or around the rotator cuff tendons is caused by the deposition of calcium hydroxyapatite crystals commonly within the supraspinatus and infraspinatus tendons.<sup>1)</sup> Cases in the long head of the biceps tendon, pectoralis major, and trapezius are reported less frequently.<sup>3-5)</sup>

We know of no report on calcific tendinitis occurring in the long head of triceps brachii muscles, and we believe that calcific tendinitis of the long head of the triceps brachii should also be considered in the differential diagnosis of acute shoulder pain.

## Case Report

A 55-year-old female housewife visited our hospital with a complaint of left shoulder pain, which had waxed and waned for 1 year. However, severe pain and restricted movement of the left shoulder had started 4 days prior to her presentation at

our hospital, without specific trauma. On physical examination, the skin over the lateral aspect of the shoulder joint was normal, with no fullness or puffiness. Gentle palpation around the shoulder joint intensified the pain to an intolerable degree. Passive forward flexion was 100°, and internal rotation was up to the L5 level, with a visual analogue scale (VAS) score of 9. Elbow flexion and extension were normal. Rotator cuff testing was restricted by pain. Simple shoulder radiography showed a calcification in the inferior portion of the glenoid fossa, and, according to the classification of Gärtner and Simons,<sup>6)</sup> it was classified as type II (Fig. 1). Magnetic resonance arthrography (MRA) of the left shoulder was performed using a 1.5-T GE scanner (Signa; GE Medical Systems, Milwaukee, WI, USA) using a fluoroscopic-guided anterior intra-articular approach to confirm the exact location of the lesion. Composite MRA detected a calcific deposit and its position. A T1-weighted sequence sagittal image showed decreased signal intensity at the posteroinferior glenoid labrum (Fig. 2A) and a T2-weighted sequence coronal image showed a focal peripheral high-intensity rim around the lesion (Fig. 2B), which was corresponding with the calcified lesion. We assumed that the calcific

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deposit was located at the origin of the long head of the triceps (Fig. 2C).

Despite administration of conservative treatment elsewhere, including medication, physical therapy, and subacromial steroid injection, the pain worsened and became intolerable. Ultrasound guided needle decompression could have been considered, however, the procedure was considered harmful due to location of calcific deposits near the neurovascular structures. Finally, arthroscopic surgery was performed.

Arthroscopic evaluation was performed with the patient in the lateral decubitus position under general anesthesia. The glenohumeral joint was examined systematically through a posterior

portal using a probe into the anterosuperior portal. A cherry-red spot lesion and increased vascularity were observed on the posteroinferior area of the glenoid (Fig. 3A). After releasing the posteroinferior capsule of the shoulder joint using a radiofrequency probe (Quantum 2; Arthrocare, Austin, TX, USA), small amounts of a cheese-like substance were observed. Compression of the posteroinferior labrum using a probe resulted in release of a large amount of the calcified substance (Fig. 3B). Following thorough irrigation of the joint, the skin portals were closed with an interrupted suture. Plain radiography after the arthroscopic procedure did not show calcification at the posteroinferior part of the glenoid fossa (Fig. 4). The arm was supported with a sling, and the patient was allowed to start range-of-motion exercise as tolerated. After the operation, the patient experienced immediate and dramatic pain relief. Two weeks after arthroscopic surgery, the passive forward flexion was 165° and the internal rotation was up to the T9 level, without pain (VAS=0). She then returned to her preoperative functional level. Normal shoulder motion without difficulty was demonstrated after 1 year.

## Discussion

Calcific tendinitis of the shoulder is a common cause of shoulder pain. The presence of calcific deposits inside or around the rotator cuff tendons is caused by the deposition of calcium hydroxyapatite crystals commonly within the supraspinatus and infraspinatus tendons.<sup>1)</sup> Cases in the long head of the biceps tendon, pectoralis major, and trapezius are reported less frequently, however, no case involving the origin of long head of the triceps has been reported.

Calcific tendinitis is considered a self-healing condition that usually shows spontaneous resolution. In most patients, calcific



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

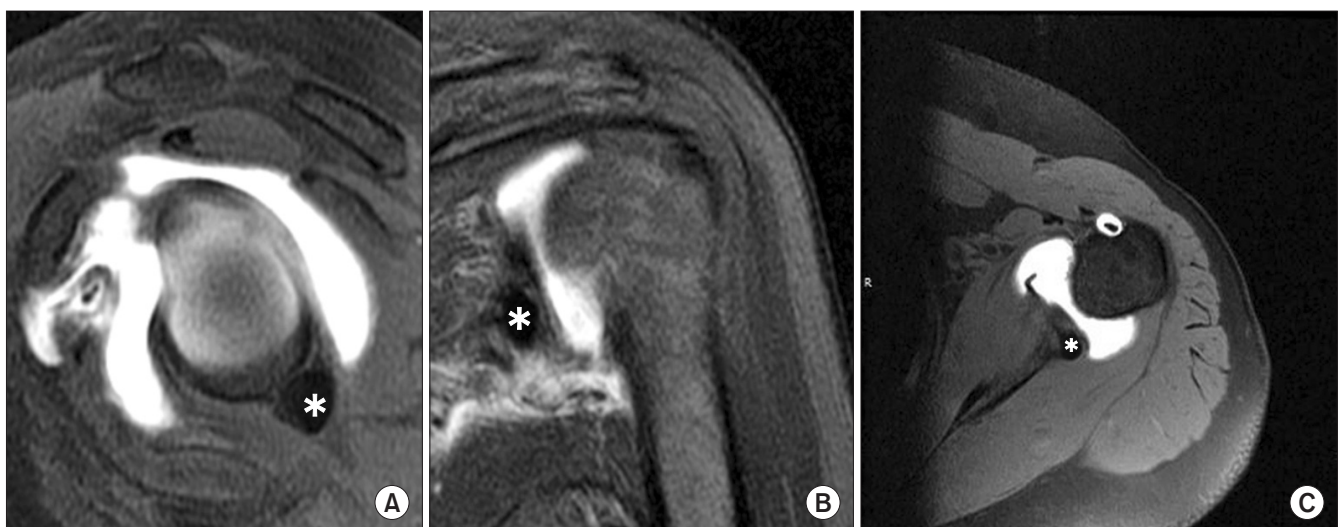


Fig. 2. Magnetic resonance arthrography, (A) T1-weighted sequence coronal image, (B) T2-weighted sequence sagittal image, (C) T1-weighted sequence axial image shows decreased signal intensity corresponding with the calcification (asterisks) at the origin of the long head of the triceps.

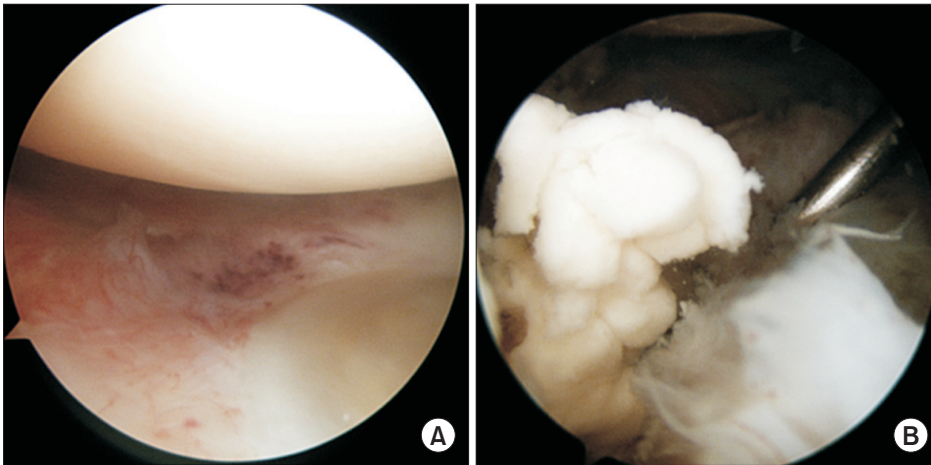


Fig. 3. Arthroscopic findings, (A) the cherry-red spot lesion is visible on the posteroinferior of the capsule, (B) compression of the posteroinferior glenoid fossa using a probe after releasing the capsule with care releases a large amount of calcified substance.



Fig. 4. Plain radiograph of the left shoulder does not show calcification in the posteroinferior glenoid fossa after surgery.

tendinitis can be treated successfully without surgery. Many different options for treatment of calcific tendinopathy have been reported in the literature.

Initially, analgesics and nonsteroidal anti-inflammatory drugs are useful for improving shoulder pain. Subacromial steroid injection and percutaneous needling are often applied in treatment of rotator cuff calcific tendinopathy.<sup>7,8)</sup> The efficacy of extracorporeal shockwave therapy (ESWT), either radial (rESWT) or focal (fESWT), in rotator cuff calcific tendinopathy has been demonstrated in several studies.<sup>9,10)</sup>

In the current patient, despite conservative treatment including analgesics and steroid injection, the size of the calcific deposit was so large that it caused severe pain. As conservative treatment failed in this case, due to the persistent severity of the symptoms, which affected the patient's daily activities, we opted for surgical treatment. Complete evacuation of the calcific de-

posit was successful, and arthroscopic surgery enabled early rehabilitation. At the last follow-up 1 year after surgery, she had no recurrence of symptoms or difficulty in performing activities of daily living, and no sign of calcification was observed on simple radiography.

Conservative treatment is usually successful in most patients with calcific tendinitis, and therefore should be primarily considered. However, intervention is required for patients with intolerable pain despite appropriate conservative treatment. We believe that calcification occurring in rare locations, such as the long head of the triceps muscle, could be treated successfully with application of such principles based on patient history, symptoms, and additional images.

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