

Treating Hidden Left Supraspinatus Calcific Tendinitis with Conventional Surgery

Sir,

Calcific tendinitis of the rotator cuff is a prevalent musculoskeletal disorder characterised by the deposition of calcium crystals in the tendons and an associated inflammatory response, often resulting in acute, debilitating pain and restricted shoulder mobility.¹ This painful condition manifests as the presence of one or multiple deposits in the rotator cuff tendons, with some patients reporting persistent pain and shoulder dysfunction.² This painful shoulder condition primarily affects sedentary workers in their fifth or sixth decade of life. It progresses through two distinct stages: A formation stage and an absorption stage. The formation stage is primarily induced by brief episodes of hypoxia, leading to chronic deposition of calcium in the matrix vesicles of chondrocytes. This process is further exacerbated by repetitive micro-injuries, which subsequently result in the formation of bone lesions that eventually coalesce. The formation stage is often asymptomatic and can persist for one to six years. The subsequent absorption stage, which typically spans from three to six months, is characterised by the vascularisation of the periphery of the calcium deposits, leading to the infiltration of macrophages and monocytes. This, in conjunction with the recruitment of fibroblasts, elicits an aggressive inflammatory response, culminating in the aggregation of inflammatory cells, heightened oedema, and increased intratendinous pressure. Non-surgical interventions constitute the primary approach to management, with a majority of patients achieving improvement following the administration of oral anti-inflammatory medications, physical therapy, and corticosteroid injections. For individuals who do not respond to non-operative treatments, a range of therapeutic modalities exists, including extracorporeal shock wave therapy, ultrasound-guided aspiration, and surgical debridement.³

The case under consideration concerns a patient with calcifying tendinitis of the left supraspinatus. Despite attempts at non-operative and arthroscopic treatments, satisfactory outcomes were not attained due to the obscure nature of the calcification site. Consequently, the traditional operative approach was pursued.

A 41-year male initially sought medical attention for pain, discomfort, and restricted movement in the left shoulder. Following a diagnosis of calcific tendinitis in the left supraspinatus muscle and subsequent ineffective non-surgical treatment, the patient underwent arthroscopic surgery which, however, failed to locate the lesion. Subsequently, the patient was referred to our hospital for further evaluation and management. Physical examination revealed pronounced left shoulder pain and a marked reduction

in left shoulder joint mobility. Shoulder pain was severe, shoulder abduction angle was 60°, and rotational activities were significantly limited. Radiographic examination demonstrated the presence of an abnormal calcified plaque in the left shoulder, while MRI revealed oedema in the left supraspinatus tendon, with abnormal signal foci in the supraspinatus muscle presumed to be either calcified or necrotic in nature (Figure 1).

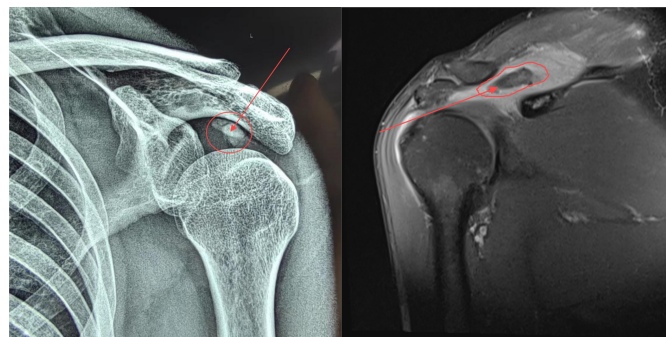


Figure 1: Radiographic examination demonstrated the presence of an abnormal calcified plaque in the left shoulder, while MRI revealed oedema in the left supraspinatus tendon, with abnormal signal foci in the supraspinatus muscle presumed to be either calcified or necrotic in nature.

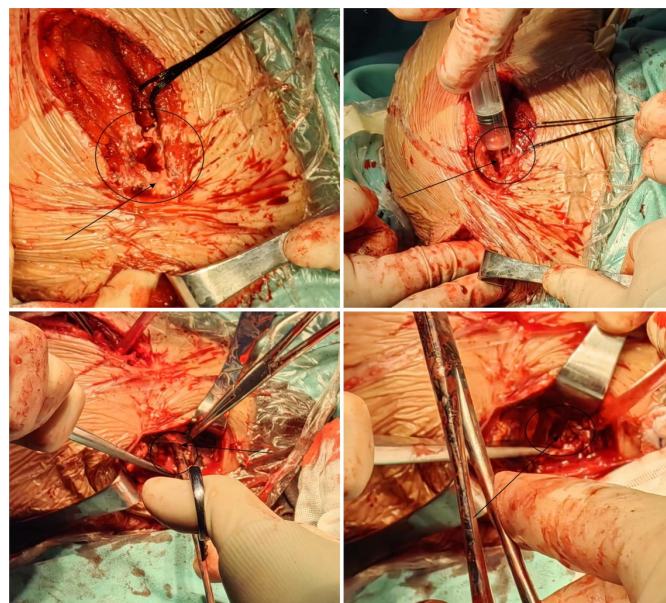


Figure 2: The lesions were surgically identified, removed, and a portion of the lesion was taken for pathological examination.

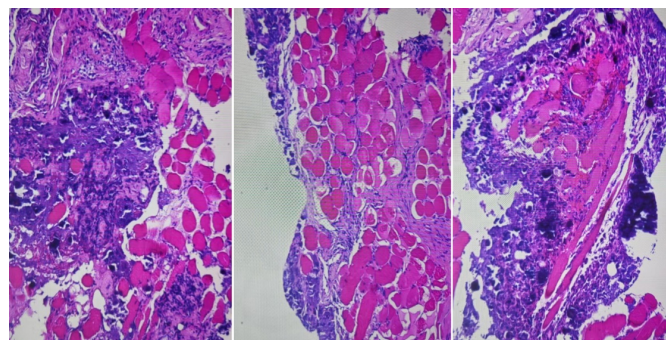


Figure 3: Postoperative pathological analysis revealed the presence of skeletal muscle tissue with some fibrous tissue and sporadic irregular calcium salt deposits.

Under general anaesthesia, the left shoulder joint was examined and the lesion was subsequently excised. The lesion, which was positioned discreetly at the centre of the supraspinatus tendon, necessitated two surgical incisions, one anterior and one posterior, to achieve accurate localisation. Subsequently, the periosteum covering the lesion was incised, revealing white, 'buttermilk-like' fluid. A sample of this fluid, along with a portion of the periosteum, was sent for pathological analysis. Upon completion of the examination, the lesion was fully excised (Figure 2). The pathological analysis revealed the presence of skeletal muscle tissue with some fibrous tissue and sporadic irregular calcium salt deposits (Figure 3), aligning with the clinical diagnosis of calcific tendinitis. At one week postoperatively, the patient's shoulder abduction angle was 60°, and rotational activity was restored compared with before, and at one month, the patient's shoulder abduction angle was 90°, and rotational activity was significantly restored.

Calcific tendinitis is typically amenable to non-surgical or spontaneous intervention. However, in cases of occult calcific tendinitis, the concealed nature of the condition, as well as the formation of a dense sheath around the affected tendon, often undermine the efficacy of non-surgical approaches. Arthroscopic intervention may likewise prove inadequate in accessing the lesion, thereby necessitating recourse to traditional surgical methods for lesion localisation and removal. Enhanced outcomes can be achieved through a synergy of traditional surgical techniques, rehabilitative measures, and pharmacotherapy. At present, the patient's self-reported shoulder pain has completely disappeared, and there is no abnormality in shoulder joint movement, and the patient is very satisfied with this treatment.

COMPETING INTEREST:

The authors declared no conflict of interest.

AUTHORS' CONTRIBUTION:

GM: Drafted, revised, and edited the manuscript.

WX, RN: Conducted the questionnaire survey, collected and analysed the data, and interpreted the results.

XS: Conducted the questionnaire survey and collected data.

All authors approved the final version of the manuscript to be published.

REFERNECES

1. Sperr A, Erber B, Horng A, Glaser C. [Calcific tendinitis]. *Radiologie (Heidelb)* 2024; **64(2)**:125-33. doi: 10.1007/s00117-023-01218-4.
2. Albano D, Vicentin I, Messina C, Sconfienza LM. Post-surgical Achilles calcific tendinopathy treated with ultrasound-guided percutaneous irrigation. *Skeletal Radiol* 2020; **49(9)**:1475-80. doi: 10.1007/s00256-020-03453-5.
3. Calvi M, Malnati S, Clivio V, Vincenzo Z, Callegari L, Genovese EA. Nonsurgical removal of a massive calcification of the shoulder. *Radiol Case Rep* 2024; **19(11)**: 5226-30. doi: 10.1016/j.radcr.2024.07.194.

Guifu Ma¹, Wendong Xie², Ruixiong Nan³ and Xiufen Si¹

¹Orthopaedics Department, Gansu Provincial Hospital, Gansu, China

²Orthopaedics Department, Gansu University of Chinese Medicine, Gansu, China

³Emergency Surgery, The First People's Hospital of Lanzhou City, Gansu, China

Correspondence to: Dr. Xiufen Si, Orthopaedics Department, Gansu Provincial Hospital, No.204, Donggang West Road, Lanzhou, 730000, Gansu Province, China
E-mail: 527403432@qq.com

Received: August 20, 2024; Revised: October 08, 2024;

Accepted: October 12, 2024

DOI: <https://doi.org/10.29271/jcpsp.2025.01.137>

• • • • •