



FIGURE 1. Anteroposterior external rotation radiograph of the left shoulder, demonstrating mild acromioclavicular joint arthropathy and extensive dense soft tissue calcification at the insertion site of the rotator cuff.



FIGURE 2. Anteroposterior external rotation radiograph of the left shoulder, demonstrating marked improvement in the previously noted soft tissue calcifications identified at the insertion site of the rotator cuff, with only trace amounts of calcification remaining.

Calcific Tendinopathy of the Rotator Cuff Treated With Acetic Acid Iontophoresis

MARYCRIS MEDINA-GANDIONCO, PT, DPT, Physical Therapy Service, Brigadier General Crawford F. Sams US Army Health Clinic/Medical Department Activity-Japan, Camp Zama, Japan.

ROBERT A. BRIGGS, PT, DPT, PhD, OCS, Army-Baylor University/US Army Medical Center of Excellence, Fort Sam Houston, TX.

A 62-YEAR-OLD RIGHT HAND-DOMINANT man with a 20-year history of left shoulder pain and 6-month insidious, progressively worsening symptoms was referred to physical therapy with clinical and radiographic evidence of left supraspinatus tendon calcification (**FIGURE 1**). The patient enjoyed tennis, push-ups, and resistance training but had discontinued these activities because of his increasing shoulder symptom severity.

At evaluation, the patient reported pain ranging from 7/10 to 9/10 on the visual analog scale, and scored 54% on the Shoulder Pain and Disability Index (SPADI). Left shoulder active range of motion was limited to 60° of flexion and abduction, with empty end feel due to muscle guarding. Passively, the patient tolerated 90° of

shoulder flexion with increasing pain.

Due to severity and irritability of pain, the patient was prescribed rest, isometrics, and pain-free range of motion. He was treated with iontophoresis, utilizing 3% acetic acid, for 3 visits per week for 5 weeks. Radiographs, repeated 1 week post treatment and 9 weeks since his initial radiographs, demonstrated marked resorption of the calcific deposit (**FIGURE 2**). At that point, the patient demonstrated 160° of active left shoulder flexion, 2/10 pain, and a SPADI score of 28% disability. A progressive resistive exercise program was initiated.

At 16 weeks post evaluation, the patient demonstrated full active range of motion of the left shoulder, 4+/5 shoulder girdle strength, a SPADI score of 5%

disability, and reported a pain-free return to prior activities.

Calcific deposition, with accompanying shoulder pain, is common.¹⁻³ While understanding of specific physiological processes of calcification resorption remains incomplete, increased solubility of calcifications with acetic acid is theorized to be beneficial.^{1,3} In this individual, concurrent resorption of the calcification and resolution of pain coincided with treatment including iontophoresis. However, we cannot conclude that iontophoresis with acetic acid was directly responsible for this outcome. This treatment modality appears to be a potentially beneficial, noninvasive treatment, warranting further consideration. ● *J Orthop Sports Phys Ther* 2020;50(11):650. doi:10.2519/jospt.2020.9270

References

1. Fernández Cuadros ME, Pérez Moro OS, Álava Rabasa S, García González JM, Mirón Canelo JA. Calcifying tendonitis of the shoulder: risk factors and effectiveness of acetic acid iontophoresis and ultrasound. *Middle East J Rehabil Health Stud*. 2016;3:e41112. <https://doi.org/10.17795/mejrh-41112>
 2. Fernández-Cuadros ME, Pérez-Moro OS, Díez-Ramos F, Albaladejo-Florin MJ. Acetic acid iontophoresis and ultrasound effectiveness on calcifying tendonitis of the shoulder, elbow, wrist, hip, knee and ankle: a non-randomized multicenter control trial. *Orthop Rheum Open Access J*. 2016;3:555611. <https://doi.org/10.19080/OROAJ.2016.03.555611>
 3. Kachewar SG, Kulkarni DS. Calcific tendinitis of the rotator cuff: a review. *J Clin Diagn Res*. 2013;7:1482-1485. <https://doi.org/10.7860/JCDR/2013/4473.3180>
- The opinions or assertions contained herein are the private views of the authors and are not to be construed as official or reflecting the views of the US Army, US Air Force, or Department of Defense.*