

Acetic-Acid Iontophoresis and Ultrasound Effectiveness on Calcifying Tendonitis of the Elbow

Marcos E Fernández Cuadros^{1,2*}, María J Albadalejo-Florín¹, Rubén Algarra-López¹, Luz O Casique Bocanegra² and Olga S Pérez-Moro¹

¹Rehabilitación y Medicina Física, Hospital Universitario Santa Cristina, Spain

²Rehabilitación y Medicina Física, Fundación Hospital de la Santísima Trinidad, Spain

Received: August 09, 2017; Published: August 22, 2017

*Corresponding author: Marcos E Fernández-Cuadros, Rehabilitación y Medicina Física, Hospital Universitario Santa Cristina, Fundación Hospital de la Santísima Trinidad, Madrid, Spain

Case Report

Calcifying tendonitis (CT) is the deposit of hydroxyapatite within tendons. CT is multifactorial and it could affect the rotator cuff, Achilles, patella, forearm extensors biceps brachii and tibialis posterior tendons. The etiology is unclear, playing degeneration and important role. Three stages with clinical/histological and radiological correlation are described:

- A. Pre-calcification: tenocyte metaplasia/chondrocyte transformation;
- B. Calcification: a)formative, b)resorptive (spontaneous resorption/phagocytosis);
- C. Post-calcification: collagen remodeling/tendon repair.

The diagnosis is clinical and radiological. Conservative treatment includes NSAIDs, physiotherapy, electrotherapy (micro-waves, short-waves, TENS, ultrasounds, iontophoresis, interferential and pulsed electromagnetic therapy). Advanced treatment includes shock-waves, eco-guided aspiration and arthroscopy [1-3].

Iontophoresis is a non-invasive technique that increases the penetration of transdermal substances through the skin with the help of electric current, based on physical-chemical properties of attraction and repulsion of charges. Psaki and Carroll introduced acetic acid iontophoresis as an effective treatment for shoulder CT [4]. However, there are controversial results on CT, and limited case reports on effectiveness in other tendons such as gluteus medius and minimum and Achilles' tendon [5]. To the best of our knowledge, there is no report on the effectiveness of acetic acid iontophoresis and ultrasound in calcific tendonitis of the elbow.

We present the case of a 48 years old woman, who presented a 2-months history of elbow pain which increased with hand movements. She was a right-handed nurse, with no important medical history, but used to smoke 10 cigarettes/day. NSAIDs did not alleviate pain and the use of an elbow orthosis decreased pain slightly, so she decided to quit. Radiography showed a formative

calcification of 12 mm length in its longer axis, at the insertion of the forearm extensor tendon at the elbow (Figures 1 & 2). After 30 sessions of 5% acetic acid iontophoresis (2cc, 4.7mA x 10 minutes) and continuous Ultrasound (1W/cm²/1MHz x 5 minutes) over the calcification, pain decreased from 10/10 to 4/10 on Visual Analogical Scale (VAS), and calcification disappeared after treatment (from 12 mm to 0mm), evaluated by a 100%-size posterior/ anterior radiography of the elbow.



Figure 1: VAS 10/10, Calcification 12 mm.



Figure 2: VAS 4/10, Calcification 0mm.

By presenting this case report, it is confirmed that 5% acetic acid iontophoresis + ultrasound is a safe and effective in the treatment of calcific tendonitis of the elbow.

References

1. Cuadros ME, Moro OSP (2016) Effectiveness of Acetic Acid Iontophoresis and Ultrasound on Calcifying Tendonitis of the Shoulder. *J Women's Health Care* 5: 328.
2. Fernández-Cuadros, ME Pérez-Moro, OS Nieto-Blasco, J Rivera-García, V Olazar-Pardeiro, et al. (2015) Calcifying Tendonitis of the Shoulder: Risk Factors and Effectiveness of Physical Therapy. *Occup Med Health Aff* 3(220): 2.
3. Fernández-Cuadros ME, Pérez-Moro OS, Albaladejo-Florín MJ (2017) Calcifying tendonitis: effect of Physical Therapy and Iontophoresis. Germany, Lambert Academic Publishing.
4. Cuadros MEF, Moro OSP, Rabasa SÁ, González JMG, Canelo JAM (2016) Calcifying Tendonitis of the Shoulder: Risk Factors and Effectiveness of Acetic Acid Iontophoresis and Ultrasound. *Middle East Journal of Rehabilitation and Health* 3(4).
5. Marcos EFC, Olga SPM, Fuencisla DR, María J AF (2016) Acetic Acid Iontophoresis and Ultrasound Effectiveness on Calcifying Tendonitis of the Shoulder, Elbow, Wrist, Hip, Knee and Ankle: A Non-Randomized Multicenter Control Trial. *Ortho & Rheum Open Access J* 3(3): 555-611.



Assets of Publishing with us

- Global archiving of articles
- Immediate, unrestricted online access
- Rigorous Peer Review Process
- Authors Retain Copyrights
- Unique DOI for all articles

<http://biomedres.us/>