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

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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 medium 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 0 mm), evaluated by a 100%-size posterior/ anterior radiography of the elbow.

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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