

Calcific tendinopathy of the rotator cuff. Conservative management with 434 Mhz local microwave diathermy (hyperthermia): A case study

ANNALISA DI CESARE¹, ARRIGO GIOMBINI², STEFANO DRAGONI²,
LUCIANO AGNELLO¹, MAURIZIO RIPANI³, VINCENZO MARIA SARACENI¹ &
NICOLA MAFFULLI⁴

¹Department of Physical Medicine and Rehabilitation, University of Rome "La Sapienza", Rome, Italy, ²Institute of Sport Medicine and Science, Rome, Italy, ³Department of Health Sciences, University of Motor Sciences, Rome, Italy, and ⁴Department of Trauma and Orthopaedic Surgery, Keele University School of Medicine, Stoke on Trent, UK

Abstract

Purpose. To report the effects of local microwave diathermy (hyperthermia) at 434 Mhz on calcific tendinopathy of the shoulder in two middle aged patients.

Methods. Two middle-aged women with calcific tendinopathy of the shoulder were treated with local microwave diathermy (hyperthermia) at 434 Mhz three times a week for four weeks. Plain radiographs and ultrasonography demonstrated calcific deposits in the area of infraspinatus or supraspinatus. Shoulder Pain and Disability Index (SPADI) and passive Range of Motion (ROM) were used to assess the response to treatment.

Results. At the end of the treatment period, the improvement as measured by the SPADI score was respectively 30% for the first patient and 40% for the second patient with an improvement of the shoulder passive ROM for both patients. The calcific deposits seen on the initial radiographs and ultrasonography were no longer visible. At 1 year follow-up, both patients continued to be symptom free.

Conclusions. Hyperthermia is a safe option in the management of calcific tendinopathy of the shoulder. Prospective randomized controlled studies with long term assessment are needed to further document its therapeutic efficacy.

Keywords: Calcification, hyperthermia, microwave, diathermy, shoulder, tendinopathy

Introduction

Calcific tendinopathy of the shoulder is characterized by the presence of macroscopic deposits of hydroxyapatite (a crystalline calcium phosphate) in any tendon of the rotator cuff [1,2]. It may be an incidental finding in an asymptomatic shoulder or it may be the cause of shoulder pain and disability, thus interfering with daily living activities [3]. This condition, seen most frequently in women, affects mainly 30- to 60-year-old individuals and is bilateral in 25% to 30% of patients [1]. The management of calcific tendinopathy remains controversial, and includes the use of non steroidal anti-inflammatory agents, roentgen therapy, physical modalities to

control the pain and prevent loss of joint mobility, local steroid injection, and open or arthroscopic surgery [4-6].

In the last decade, local microwave diathermy machines producing hyperthermia have been introduced in physical medicine and rehabilitation [7,8]; they combine a superficial cooling system and a deep heating source with a microwave power generator at 434 MHz [9]. The clinical value of hyperthermia in the management of acute and chronic musculo-skeletal injuries has been shown in randomized controlled trials [10-12].

We describe the use of local microwave diathermy (hyperthermia) in two middle-aged women with calcific tendinopathy of the rotator cuff.