

Prognostic value of CT evaluation of calcifications for extracorporeal shock wave therapy (ESWT) in calcifying tendinitis of the rotator cuff

Author:

Davide Volpe, Peter A.Mattei, Nicola Volpe, Paolo Pastore, Giuseppe Sessa, Alessandro Carriero

Institution:

Radiology Department, Maggiore della Carita Hospital, Eastern Piedmont University, Novara, Italy

Device and producing company:

Reflectron (HMT, Kreuzlingen, Switzerland)

Introduction:

The aim of this study was to evaluate the prognostic value of computer tomography (CT) characterization of calcifications, as well as patient characteristics, in predicting positive outcome of extracorporeal shock wave therapy (ESWT) in calcifying tendinitis of the rotator cuff.

Methods:

Twenty symptomatic patients with calcified tendinitis of the shoulder were enrolled. After giving their informed consent, all patients underwent CT (GE Lightspeed, Milwaukee) in order to characterize the calcifications in terms of volume, Hounsfield (HU) density and position. They then received three treatments of 500 pulses (240 pulses/min at an energy range of 0.11-0.12 mJ/mm² using a Reflectron (HMT). The treatments were separated by a 14-day period and the follow-up CT was performed 12 weeks after the third treatment. Patients were asked to complete a VAS scale to evaluate pain prior to each treatment and during the follow-up visit. The pre-treatment CT was used to target the pulses.

Results:

All patients had a reduction in pain (decreased VAS score) and a significant reduction in the size of the calcification. The majority of the patients also showed a significant reduction in calcification density (HU). Preliminary analyses indicated that patient characteristics were not correlated with outcome while the initial density of the calcification was directly correlated with the percentage reduction in volume.

Discussion:

Factors which can be used to effectively determine the benefits patients will receive should reduce unnecessary suffering and increase effectiveness of their overall treatment program, compensating or the increased radiation exposure.

Conclusion:

CT evaluation prior to ESWT is a useful tool for predicting which patients will have a reduction of the calcification, but not in cases where the aim of the therapy is an analgesic effect.