

ABSTRACT-HEEL PAIN TREATMENT RESULTS USING EXTRACORPOREAL PULSE ACTIVATION THERAPY (EPAT) VS. EXTRACORPOREAL SHOCK WAVE THERAPY (ESWT).

By Angela Drury-Schimberg, D.P.M, F.A.C., F.A.S.

INTRODUCTION

Heel pain is the most common foot problem presenting in the clinician's office. It is often attributed to plantar fasciitis. While most heel pain is responsive to conservative therapy including orthotics, strapping, physical therapy, NSAIS, corticosteroid injections and rest, 10% of patients remain with pain. These patients are faced with the choice of having surgery or living with pain. An alternative to surgery includes Shockwave Therapy. Shockwave Therapy most commonly used in the U.S. include Epos Dornier and Ossatron. Swiss made Storz Medical D-ACTOR 100 EPAT –Extracorporeal Pulse Activation Therapy is used extensively in Europe and Canada. The mode of action during Pulse Activation is stimulating chemical processes at the synaptic contact sites. The complex spatial and time-related stimulus pattern is stored at the synapses as a memory engram in the form of long-term modifications. Pulse Activation breaks the pathological association between pain and muscle tone and/or vascular tone. The strong stimuli produced enable natural movement patterns to be remembered and reproduced. In this manner, a non-pathological condition of the muscle tone can be restored. Treatment results have demonstrated that Pulse Activation Therapy provides improved blood circulation in the treated pain regions and that a long-term stimulation of metabolism is achieved in areas which are poorly supplied with blood. The study involving 19 feet using Storz Medical D-Actor 100 Extracorporeal Pulse Activation Therapy compares with patients who had undergone Extracorporeal Shock Wave Therapy using either Ossatron and or Dornier Epos machines. The results of both therapies are compared. Benefits and risks are discussed.

MATERIAL AND METHODS

16 patients (19 heels) were treated with the Swiss made Pulse Wave Therapy between January 2006 and March 2006. 3 patients had treatment on bilateral heels. There were 9 women and 6 men with an average age of 47 years (range, 40 to 56). The left heel was affected in 6 cases and the right heel in 13 cases. Criteria for the study included patients with established plantar fasciitis who failed 4 conservative treatments. Surgery would have been the next recommended treatment.

Each heel was treated with 5 weekly sessions using the Storz Medical Extracorporeal Pulse Activation Therapy (EPAT) with (a maximum of 2000 pulses/session, an intensity of 2.5 bars). Pain intensity (VAS) and F-Meter was documented at time of each treatment and then following 3 months follow-up.

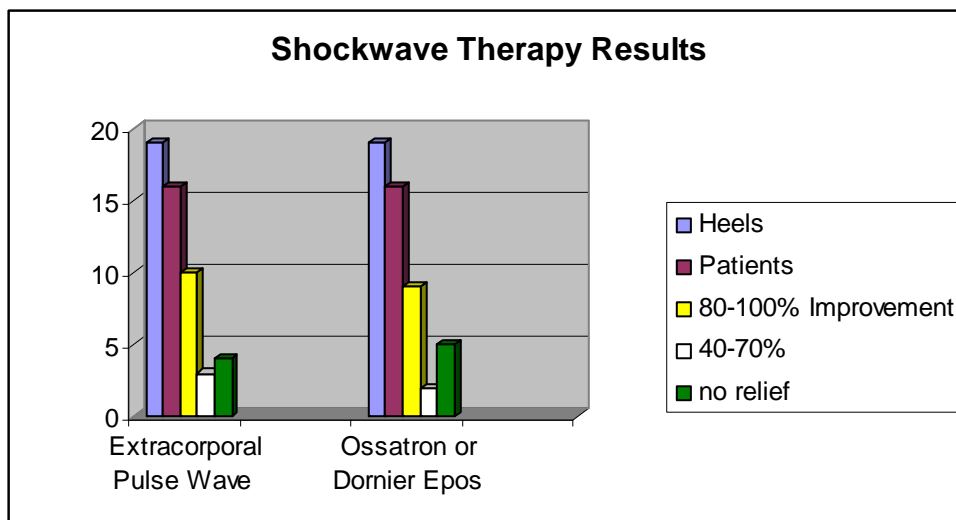
The 16 EPAT patients were compared with 11 patients (16 feet) treated with either Ossatron or Epos Dornier. 5 patients had treatment on bilateral heels. There were 5 men and 6 women with an average age of 40 years (range, 31 to 57). 4 patients had treatment with Ossatron. 7 patients had treatment with the Dornier Epos.

RESULTS

Out of the 16 patients (19 heels) that received the Extracorporeal Pulse Wave Treatment 9 patients (9 heels) in number of patients showed 80- 100% improvement. 4 patients (5 heels) showed 50-70% improvement and 3 patients (5 heels) showed no relief. No patients were worse in pain following the EPAT treatment.

8 patients (9 heels) receiving either the Ossatron or Dornier Epos treatment showed 80-100% improvement. 2 patients (2 heels) showed 40-70% and 4 patients (5 heels) showed no improvement. No patients showed worsening of their symptoms following treatment. No complications were found with either shock wave therapy.

SHOCKWAVE THERAPY RESULTS		
	EXTRACORPORAL PULSE WAVE	OSSATRON OR DORNIER EPOS
80-100% IMPROVEMENT	10	9
40-70% IMPROVEMENT	3	2
NO RELIEF	4	5
NUMBER OF HEELS	19	19
NUMBER OF PATIENTS	16	16



DISCUSSION

It is hypothesized that shock-wave therapy enhances neovascularization, increased local vascularity and reduces the inflammatory reaction to local trauma. Shock wave therapy is a safe and effective modality for treatment of plantar fasciitis. Out of 16 patients (19 heels) undergoing shockwave therapy 8 patients (10 heels) responded with 80% or greater improvement. Epos and Ossatron Shock Wave Therapy showed a slightly higher improvement effect however the ease of treatment experienced by the EPAT group was greater. The Storz Medical D-Actor 100 machine is smaller, easier to use, more tolerable to patients (none required anesthesia) and is less expensive than the current Epos Dornier and/or Ossatron. Both patients and insurance companies benefit from treatment satisfaction and cost containment. Both shockwave therapies provided similar findings however with the EPAT treatment patients experienced the above benefits.

Shock wave therapy is a useful modality in treatment of chronic plantar fasciitis that is not responsive to first hand conservative care. Because of its high success rate, negative complications, and ease for patients in recovery phase, shockwave therapy should be considered as treatment in lieu of surgery.