

Extra Corporeal Shock Wave Therapy in Orthopaedics

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Introduction

The use of extra corporeal shock waves in the treatment of urolithiasis is well established and is in wide use world wide. Further applications focus on other calculi such as gall bladder, pancreatic and salivary gland stones. Since the past decade, various experiments are on to test the efficiency of ESWT in the treatment of various orthopaedic conditions like painful heel, Tennis Elbow, Golfers Elbow, Supraspinatus Tendinitis, Pseudarthrosis etc.

The paper presented here, studies the effect of pneumatically generated radial shock waves in the treatment of orthopaedic related conditions.

Materials And Methods

The machine consists of a control device and a hand piece connected by a flexible tube. A control device regulates the metered discharge of technically pure compressed air to the hand piece supplied by a separate compressor. In the hand piece, the compressed air accelerates a projectile, which strikes the underside of a metal applicator. The force of impact of the projectile on the applicator produces a shock wave in this transmitter. The atraumatic tip of

the applicator is positioned at the point of maximum pain, determined by patient's biofeedback.

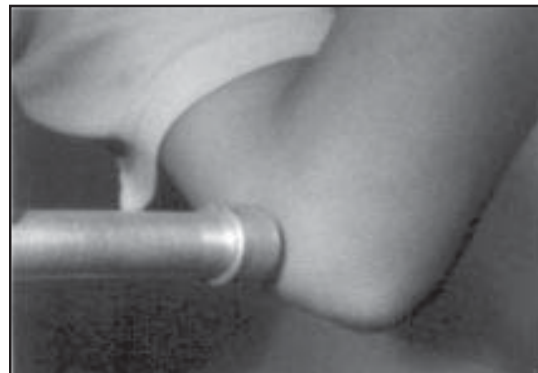
Patients

65 patient's were studied as a part of prospective controlled study mean age of patient was 42.2 years. Only patients with at least 6 weeks history and with unsuccessful attempts at conservative treatment were enrolled under the study. The exclusion criteria were a pregnancy, blood clotting disorders poor general condition, tumour growth in the region to be treated and systemic disease like Collagen Disorders or Rheumatic conditions.

Out of the 65 patients studied, 20 had plantar fasciitis, 9 had insertional tendinitis of Tendo-Achillis, 20 had tennis elbow, 10 had Golfer Elbow and 6 patients had supraspinatus tendinitis. The diagnosis was essentially clinical. Each of our patient received ESWT for three sittings with a interval of 8-10 days between each sitting. The patients also received NSAID's along with the ESWT. The patients were assessed at a 4 weeks, 10 weeks, and 16 weeks interval after the last sitting on OPD basis.



The eswt machine shoolar.



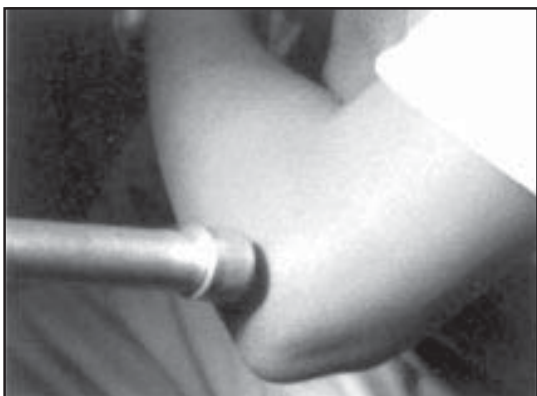
Treatment with eswt for golfer's elbow.



Treatment with eswt for calcaneal spur and plantar fasciitis.



Treatment with eswt for supraspinatus tendinitis.



Treatment with eswt for tennis elbow.

Results

All 65 patients were assessed on OPD basis, as mentioned above.

Of the 20 patients with plantar fasciitis, 11 patients had significant relief of pain which was analysed on visual analogue scale. Restriction of

walking time was persistent in 9 cases (45%), although the extent of restriction was decreased significantly. 5 Patients (25%) had persistent rest pain and were not satisfied with treatment.

Of the 9 patients with insertional tendinitis of Tendo-Achillis 7 (77.77%) had complete relief of pain, while 2 patients did not have relief of pain.

Of the 20 patients with tennis elbow 14 patients (70%) had complete relief of pain, while in 6 patients (30%) the pain persisted. Similarly in 10 patients with Golfers Elbow 7 had complete relief of pain.

Of the 6 patients with supraspinatus tendinitis 4 patients (66.66%) had relief of pain, while 2 patients (33.33 %) did not respond to treatment.

	No. of Patient	Relief of Pain	No Relief of Pain
Plantar Fasciitis	20	11 (55%)	9 (45%)
Insertional tendonitis of TA	9	7 (77.77%)	2 (22.23%)
Tennis Elbow	20	14 (70%)	6 (30%)
Golfers Elbow	10	7 (70%)	3 (30%)
Supraspinatus Tendinitis	6	4 (66.66%)	2 (33.33%)

When asked after 1st sitting, vast majority of patients said, that they would have the treatment again, which correlates with patient satisfaction.

Discussion

The use of ESWT in the treatment of urolithiasis brought a new physical medium into medicine. In Plantar Fasciitis, Tennis Elbow, Golfers Elbow, and Supraspinatus tendonitis hardly any conservative and surgical procedures have been subject of multi centric, controlled studies, therefore it is difficult to assess their value. However conservative treatment should certainly be attempted first.

The side effects of ESWT are Erythema, Petechial Bleeding or Subcutaneous Hematoma which was seen in 2 of our patients (3.07%). No systemic side effects were noted but local irritation does not appear to be of lasting clinical significance.

The subjective success rates with ESWT are quoted as 50-75%, in the literature which correlates with our study. ESWT does not interfere with future surgery or any other suitable treatment required in non responders.

The use of shock waves in Orthopaedics is controversial. The lack of studies is the main focus of criticism. Yet a few prospective Randomized Studies of ESWT in orthopaedics that do exit prove the effectiveness of this treatment in Orthopaedics.

The decisive limitation of this study is the lack of control group. Also there are no standard criteria to assess the results. Therefore, the results can not be regarded as sufficiently confirmed according to the criteria of evidence based medicine for this reason. Further confirmation is needed in future by means of a Controlled & Randomized Study.

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