Extracorporeal Shock Wave Therapy (ESWT) in the Treatment of Musculoskeletal Pain.

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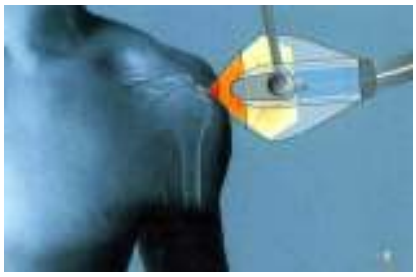

What is ESWT?

Extracorporeal shock wave therapy (ESWT) is now an established therapeutic procedure for the treatment of a wide number of musculoskeletal complaints, including heel, knee, shoulder and elbow pain, calcific disorders and some fractures. The treatment involves very high energy sound waves. It aims to reduce the pain arising from nerve endings and to promote the healing response to injury.

What does treatment involve?

Therapy involves 1-3 treatments, each lasting 15 minutes, usually performed one week apart. The sound waves are delivered to the painful area under the guidance of an imaging system.

In the first few minutes of treatment you may experience some discomfort. Patients may choose to have a local anaesthetic injection administered prior to treatment: this varies between different individuals and will be discussed with the patient.

Unlike many therapies, side effects of treatment are few. The most commonly noted one is that of discomfort during treatment. However, the delivery of the shock wave therapy can be stopped at any time during treatment.

It is important to note that it may be up to 12 weeks after the treatment course before improvement is noted. Treatment courses can be repeated if necessary.

In using this treatment, it is important that it is administered by a clinician with an expertise in this field.

NICE GUIDANCE
Extracorporeal shockwave lithotripsy for calcific tendonitis (tendinopathy) of the shoulder

1 Guidance

1.1 Current evidence on the safety and efficacy of extracorporeal shockwave lithotripsy for calcific tendonitis of the shoulder appears adequate to support the use of the procedure, provided that normal arrangements are in place for consent, audit and clinical governance.

2 The procedure

2.1 Indications

2.1.1 Extracorporeal shockwave lithotripsy (ESWT) is used to treat calcific tendonitis, where crystalline calcium phosphate is deposited in a tendon. This most commonly occurs in the shoulder joint, specifically in the supraspinatus tendon of the rotator cuff. When calcific tendonitis is symptomatic, it may present as chronic, relatively mild pain in the shoulder, with sporadic episodes of pain radiating down the arm or to the neck, with mechanical symptoms or with severe acute pain due to an inflammatory response.

2.1.2 Treatment for calcific tendonitis includes nonsteroidal anti-inflammatory drugs, corticosteroids, physiotherapy, aspiration or lavage.

2.1.3 For patients refractory to these approaches, open or arthroscopic shoulder surgery may be offered. ESWT is a non-invasive alternative to these types of surgery.

2.2 Outline of the procedure

2.2.1 ESWT involves giving controlled, short duration sonic pulses to produce transient pressure disturbances, which fragment calcific deposits.

2.2.2 ESWT is an established technique for the treatment of renal calculi.

2.3 Efficacy

2.3.1 Four studies all showed an increase in function and a reduction of pain.

2.4 Safety

2.4.1 Few complications were reported in the reviewed literature, and the most common was subcutaneous haematoma. It is not known whether this is because complications are uncommon or because complications were not well reported in the studies reviewed.

Extracorporeal Shock Wave Therapy (ESWT) in Plantar Fasciitis

The FDA in the USA have supported the use of ESWT in refractory tendinopathies after a large trial by Ogden JA (2004). [1].

This was a randomised multicentre controlled trial involving 293 patients with recalcitrant plantar fasciitis. Outcome measures were pain, tenderness and general health status and follow up was performed over 12 months. For treatment to be considered a success, subjects had to report at least a 50% improvement in all of 4 outcome measures.

Success at 3 months:

- Active treatment group = 46.5% (67/144)
- Placebo group = 29.8% (42/141)
- p = 0.008

Success at 12 months:

- Active treatment group = 45.1% (65/144)
- Placebo group = 17.7% (25/141)
- p = 0.002

The most frequent complications were pain after treatment and mild neurologic symptoms such as numbness. All patients had complete resolution of these after 3 months.

Kudo et al performed a further large randomised controlled trial of shock wave therapy in chronic proximal plantar fasciitis, and reported significant efficacy in the treatment group at 3months [2].

Moretti et all reported a 71% improvement in plantar heel pain in runners with the condition [3] and other studies have also demonstrated significant benefit in a spectrum of ondividuals with plantar fasciitis [4-6].

In addition to this study, a meta-analysis identified 8 acceptable studies of sufficient duration of follow up (one year or more after treatment) [7]. The report concluded that the therapeutic application of extracorporeal shockwaves is clinically effective for the treatment of chronic proximal plantar fasciitis.

Undoubtedly, the effectiveness of treatment is influenced by machine choice, guidance of the treatment to the site of the pathology (as opposed to treating blindly), and dosage regimes used [8].

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Extracorporeal Shock Wave Therapy (ESWT) in Other Soft Tissue Complaints

Shock wave therapy is used in a number of other recalcitrant soft tissue complaints.

In addition to calcific forms of tendinitis and plantar fasciitis, shock wave therapy has a role to play in lateral epicondylitis, insertional tendinopathies and patellar tendinosis.

Patient selection, the type of machine used, use of imaging guidance and other aspects of treatment are all important.

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