Shock Wave Therapy In Soft Tissue Conditions

Low Chee Kwang, M.B.B.S., M. Med. Surg., F.R.C.S., F.A.M.S.

Department of Orthopaedic Surgery
Tan Tock Seng Hospital, Singapore

INTRODUCTION

High-energy acoustic shock waves or lithostripsy were first used for medical purposes more than 20 years ago. Since then, lithotripsy has become established as an attractive, cost-effective and non-invasive treatment method of choice for kidney stones. In addition, it has been scientifically proven that shock waves stimulate bone growth[1] and promote healing of tendinopathies.[2] It has been used in various orthopaedic soft tissue conditions. Many of them may be sport injuries.[3]

The Effect

EHS shock waves alter cell metabolism and generate mechanical stimuli that cause neovascularisation. In both calcific and non-calcific tendinopathies, calcific deposits are re-sorted and degenerative tissue areas are revitalised.

The Benefits

Shock wave treatment of soft tissues can be carried out on an outpatient basis under local anaesthesia. Improvement of the patient's symptoms and even complete freedom from symptoms is achieved after one to two treatments. There is also a very low incidence of adverse reactions. Side effects in the treatment of the elbow include[4] transitory reddening of the skin, pain, small haematomas, migraine and syncope. The International Society for Musculoskeletal Shock Wave Therapy (ISMT) recommends the application of shock wave therapy as a substitute for surgery following four months of unsuccessful conservative therapy for the following soft tissue conditions.

Tendinosis calcarea

Tendinosis calcarea of the shoulder is usually the result of excessive stress and strain; the condition is especially common among untrained athletes. A traumatic aetiology needs to be taken into consideration. Diagnosis and position of therapy can be reliably undertaken with X-ray or ultrasound techniques.[5] Success rates vary between 70% and 85%, with complete resorption of the calcific deposits.[6-8]

For non calcified tendonitis of the rotatory cuff, the results are not consistent and range from good outcome[9] to placebo effect.[10]

Insertion tendinopathies (tennis or golfer's elbow)

Epicondylitis is frequently the result of excessive stress and strain on an epicondyle. The success rate of short wave therapy lies in the range of 70% to 75% after one or two treatments.[6, 11-13]

Patellar tip syndrome

In athletes, inflammation of the insertion of the patellar ligament is a frequent result of excess elastic stress. Short wave therapy gives satisfactory results.[3]

Fasciitis plantaris

This enthesopathy is also known as "heel spur". It is usually the result of excessive stress and strain on the heel. Complete healing is achieved in 70% to 85% of cases.[11,14-16] However, one study shows the improvement may be due to placebo effect.[17]

Achillodynia

Achillodynia frequently occurs as the result of excessive stress and strain on the Achilles tendon. It is especially common among athletes. Painful and changed areas of tissue are found along the Achilles tendon. These areas can be reliably located and visualised with sonographic techniques. Patients generally experience a distinct reduction of symptoms several days after treatment and are able to resume training.[18] Since excessive and sudden loading is to be avoided, resumption of intensive training should be performed gradually under a physician's supervision to avoid heavy or sudden strain.

Correspondence should be sent to :
Dr Low Chee Kwang
Department of Orthopaedic Surgery
Tan Tock Seng Hospital
11 Jln Tan Tock Seng
Singapore 308433

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