

Efficacy of Acupuncture as an Adjunct to Physiotherapy for Chronic Medial Ankle Pain: A Case Report

Dr. Laran Chetty^{1*}

¹Senior Physiotherapist, National Health Service, London, United Kingdom

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*Corresponding author: Dr. Laran Chetty

Senior Physiotherapist, National Health Service, London, United Kingdom

Abstract

Case Report

Ankle injuries are very common. Chronic ankle pain can be attributed to inadequate rehabilitation or misdiagnosed underlying pathology. Management of chronic conditions often pose a great challenge to physiotherapists. This case report provides a perspective on how acupuncture can be used as an adjunct in physiotherapy care for a client presenting with chronic medial ankle pain.

Keywords: Acupuncture, Physiotherapy, Ankle Pain, Chronic.

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INTRODUCTION

The ankles support the entire body weight and ankle injuries are very common. Each year, approximately 2 million clients are treated for ankle sprains and strains and ankle fractures are one of the most common injuries treated by orthopaedic surgeons and podiatrists [1]. Ankle sprains are extremely common injuries in both the athletic population and the general population [1]. Approximately thirty percent of those sustaining an ankle sprain are likely to develop chronic functional limitations post injury regardless of whether treatment was previously received [1].

Pain and instability especially with more stressful activities, such as running, are frequent complaints. Anyone, from well conditioned athletes to the most sedentary person, can experience an ankle injury. People who are overweight and those who wear high-heeled shoes are at an increased risk for ankle injuries. Ankle injuries usually involve a sudden, unexpected, loss of balance that results in a sharp twist of the ankle [2]. A strain occurs when a muscle or tendon overstretches. A sprain, which is more serious, occurs when strong connective tissue that connects one bone to another (ligaments) become overstretched. In some cases, a ligament tears and may pull a fragment of bone with it, known as an avulsion fracture. Sprains may account for 85% of all ankle injuries and about 45% of all sports-related injuries. It is estimated that as many as 50% of clients who experience an ankle sprain will have a recurrence [3].

Management of chronic conditions often pose a great challenge to physiotherapists [4]. Chronic ankle pain can be attributed to inadequate rehabilitation or misdiagnosed underlying pathology. Accurate history taking and examination of the ankle will guide in the appropriate management [5]. However, if pain is persistent or there are recurrent ankle injuries, surgical repair of the ankle ligaments may be necessary. A badly torn ligament may need to be surgically reattached to the bone, for example, or a chronically unstable ankle may be strengthened by removing a piece of tendon from one side of the foot and attaching it to the weakened area for support [6].

CASE

Subjective examination

A 30-year-old female runner presented at the occupational health physiotherapy clinic complaining of chronic medial left ankle pain on her twice weekly 10 km run. She complained of localised sharp pain of 6/10 at rest and 8/10 on the Visual Analogue Pain Scale (VAS) within the first 20 minutes of running, especially when running uphill. Stretching her calf muscle also aggravated her pain. The pain was eased by walking for about five minutes and limiting her dorsiflexion range. The client had a chronic history of ankle sprains reportedly having first sprained her ankle when she was only 8 years old, in which she was unable to weight-bear on the left ankle for 3 weeks or run for a month. No treatment was received. She has since sprained her ankle numerous times, yet never to the same extent and not within the last two years. She has therefore suffered from

the current complaint intermittently for 22 years but, until now, has never investigated it. The only significant past medical history of note was bilateral shin splints four years previously. The symptoms have, however, have been completely relieved by changing her running shoes. The client was not suffering from any other medical complaints, was not experiencing any neurological symptoms nor was she taking any medication. No x-rays or other medical imaging investigations had been performed. On subjective questioning the client presented with two 'yellow flags'. The first being that she was irritated that she had to take longer to warm up before her run and had to take extra precautions which limited her from running for a club. The second was that she had taken a very long time to seek treatment and was almost in denial of her pain. The client's main functional goal was to be able to run 7-10 km twice a week pain free and without having to warm up for 5 minutes.

Objective Examination

Observed abnormalities in the client's standing posture included a decrease in left knee extension, slight external rotation of the left tibia, increased weight bearing on the right foot, bilateral supination of feet and bilateral high arches. A visual analysis of the client's barefoot running gait showed the following deviations: bilateral pronation, decreased strike of her left heel at heel strike (toe running), eversion of left ankle with swing through, uneven cadence and heavy landing of her right foot in midstance. The squat revealed an obvious decrease in dorsiflexion range and the client reported that the left ankle felt "stuck". Active and passive movements

of the left ankle were limited, the most marked being dorsiflexion and eversion. Table 1 presents the range of ankle movements. Calf muscle length was limited on the left for both gastrocnemius and soleus muscles. The length was measured with a tape measure over a 10cm step as the distance from the floor to the lowest part of the client's heel. In prone the difference in the client's heel height between left and right sides was also measured. The measurements were taken three times and the average recorded. The anterior drawer sign and talar tilt were negative indicating uninterrupted ankle ligaments. The client's lower limb was neurologically intact and testing of straight leg raise revealed no neurodynamic mobility problems. One leg standing test for proprioception showed good balance and proprioception for both legs. On palpation the left ankle was slightly cold and clammy, but no oedema or swelling was noted. Tenderness of 2/10 was elicited over the anterior medial area (over the talus) of the left ankle with deep pressure. This area also felt medially displaced. Tightness of the proximal gastrocnemius and soleus was felt compared to the right side. Palpations of the Achilles tendon, medial and lateral ankle ligaments, the extensor retinaculum and tibialis anterior tendon were all non-tender. Posterioranterior (PA) accessory movements of the talocrural joint elicited the client's sharp 8/10 pain at half ROM with a block end-feel. The other movements were full range and pain free. Accessory examination of the tarsal, metatarsal, phalangeal, subtalar, proximal and distal tibiofibular joints were asymptomatic. Clearing tests were asymptomatic for the client's lumbar spine, sacroiliac joint, hip and knee.

Table 1: Range of ankle movements

Ankle Joint	Active ROM		Passive ROM			
	Movement	Left	Response	Right	Left	Response
Dorsiflexion	21 ⁰	8/10 sharp pain	35 ⁰	21 ⁰	8/10 sharp pain	28 ⁰
Plantarflexion	40 ⁰	No pain	45 ⁰	45 ⁰	No pain	45 ⁰
Inversion	21 ⁰	No pain	30 ⁰	28 ⁰	No pain	33 ⁰
Eversion	16 ⁰	2/10 dull pain	32 ⁰	17 ⁰	5/10 moderate pain	35 ⁰

Acupuncture treatment

The client received six treatment sessions over an eight-week period with each session being 20-30 minutes in duration. The client continued to run 7 to 10

km twice weekly during the intervention. The acupuncture points chosen and applied during the treatment sessions are depicted in Table 2.

Table 2: Acupuncture points

Gall Bladder:	GB 41
Kidney:	KI 2 (degenerative conditions); KI 6
Spleen:	SP 5
Stomach:	ST 44 (strong analgesic point)
Liver:	LR 3 (earth point)
Distal Point:	GB 31
Deqi Obtained:	Warm, Heaviness

Other physiotherapy techniques were used in conjunction with acupuncture, including, anterior-posterior glide applied to the distal tibia with stabilisation

of the posterior foot. This technique was performed thirty times then repeated two more times. The client was instructed on maintaining calf muscle length with

stretching. The client was instructed to place her hand on a wall with her leg behind the right in a manner as to feel a stretch in her calf and hold the stretch for three times thirty seconds. The client was given appropriate injury prevention advice such as being encouraged to run with proper heel strike and discharged with a home exercise programme. It was deemed unnecessary to refer for further radiological investigations.

DISCUSSION

On completion of the physical examination the client's pain was severe when provoked yet non-irritable as it eased within seconds. The pain was more mechanical in nature due to reproduction through movement. The three main findings of the subjective and physical examinations were decrease in active and passive dorsiflexion and eversion, accessory PA of talocrural joint and measured calf muscle shortening. The aim of the management was to reduce the client's pain and increase her range of dorsiflexion by correcting the positional fault of the talocrural joint. Calf muscle shortening would have to be addressed. This would allow for achievement of the client's functional goal. Treatment would include acupuncture for pain symptoms, joint mobilisations for decreased dorsiflexion, an effective calf stretching program and educating the client on seeking early treatment of an injury and promotion of good running style with heel strike together with a home exercise programme. The client would be referred for an x-ray if her pain persisted (to rule out any fracture or other complications).

This case study has shown the beneficial effects of applying acupuncture in conjunction with other manual techniques and advice. The client reported immediate pain with acupuncture reporting a 4/10 (i.e., 33% improvement) at rest on VAS in the first treatment and 3/10 by the fourth treatment (i.e., 50% improvement). There was also a significant improvement with muscle length of the gastrocnemius and soleus muscles within one week of stretching. This improvement is attributed to the rapid pain relief reported by the client following acupuncture needling, thereby increasing client compliance to the stretching programme. The joint mobilisations increased ankle ROM to full range and by the sixth treatment client

reported a 4/10 VAS with running (i.e., 50% improvement). Although in this case the clients' symptoms were not totally eradicated, a significant improvement was noted in all outcome measures. We must also bear in mind that this is a chronic injury, with an acute exacerbation and that total pain eradication is not always possible with chronic conditions. However, a home exercise programme was prescribed for the client prior to discharge to maintain or improve on the goals achieved during the physiotherapy sessions.

CONCLUSION

A follow-up review appointment was booked with this client three months after discharge in which ankle strapping and taping were applied and additional needling of the right ankle (i.e. unaffected limb) using the same acupuncture points as on the affected limb (i.e. left ankle). A specialist orthotics referral was made to determine if any devices could be worn to improve function. The client was pleased with her overall physiotherapeutic management.

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