

Plantar Fasciitis: The Acupuncture Treatment of Heel Pain

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Abstract

Plantar fasciitis is the most common cause of heel pain and occurs in all types of athletic and active individuals. However, simply walking and standing on a hard surface may also cause symptoms. Plantar fasciitis is an inflammation and irritation of the plantar fascia, the connective tissue that supports the arch. Some orthopaedic texts suggest the possibility of micro-tears in the fascia at or near its attachment to the calcaneus. Fifty percent of patients may also have a calcaneal heel spur. Acupuncture treatment uses the extraordinary point Shimian M-LE-5 as the 'target' zone for local treatment. This point is located at the centre of the heel in the region of the attachment of the plantar fascia to the calcaneus. Palpation will reliably help to determine the precise site for needle insertion. Variations of paired needles at Shimian M-LE-5, possibly with electrical stimulation and/or thread moxa, are often effective as local points. Numerous other secondary points may be considered on the Kidney, Bladder and other related channels. The inclusion of complementary procedures, such as orthotics for the correction of the biomechanics of the foot, can also enhance clinical results.

Introduction

Plantar fasciitis is the most common cause of heel pain and occurs in all types of athletic and active individuals. It is commonly seen in runners, and may account for as much as 10 percent of all running injuries.¹ However, simply walking and standing on a hard surface may also cause symptoms. Although acupuncture treatment of plantar fasciitis is sometimes difficult, the practitioner should always approach the condition with the expectation that some success may be achieved. With precise needling and the inclusion of complementary therapies, the percentage of successful cases may be quite acceptable.

Plantar fasciitis is an inflammation and irritation of the plantar fascia, the connective tissue that supports the arch of the foot. Some orthopaedic texts suggest the possibility of micro-tears in the fascia at or near its attachment to the calcaneus. Fifty percent of patients will probably also have a calcaneal heel spur.² As many as 40 per cent of male and 90 per cent of female patients with plantar fasciitis are overweight.³ And while this is usually an overuse (repetitive stress) injury, it may be brought on by acute trauma in strenuous lower extremity activities.

Presentation

The patient reports pain at the plantar aspect of the heel with accompanying stiffness. Symptoms may extend along the arch toward the region of Yongquan KID-1 and even as far as the toes. This disorder has a predictable aggravation of pain and stiffness in the morning when taking the first steps of the day, or upon standing after prolonged sitting or rest. The symptoms may be alleviated as the patient 'warms up'

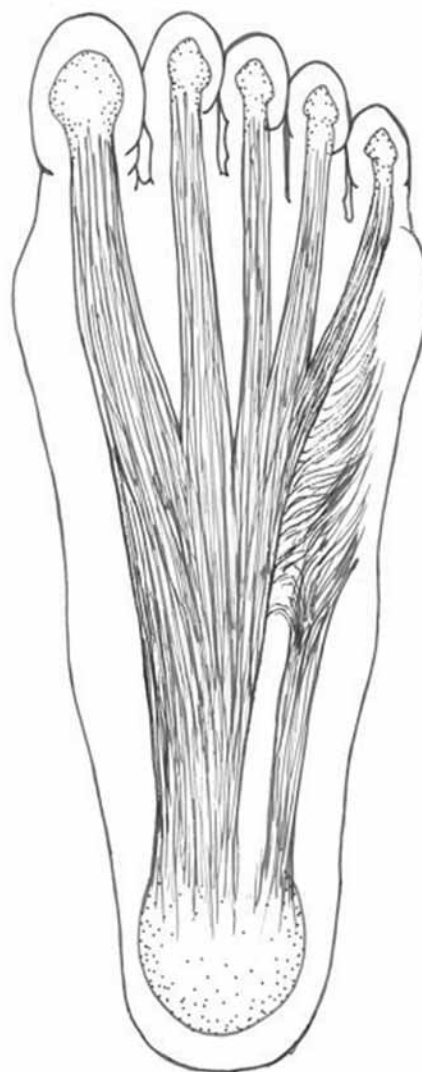


Figure 1: The plantar fascia

and stretches the fascia with moderate activity. Runners will frequently report that there is no pain during the early stages of a run, only for it to return towards the end of or after a workout. Similarly, it is not uncommon to hear that symptoms are alleviated during the day but worsen at the end of the day.

By far the most likely diagnosis of heel pain is plantar fasciitis, especially if it follows the predictable patterns of aggravation covered above. However, there are several other possible causes of heel pain that present like plantar fasciitis that the practitioner should not overlook. These include achilles tendonitis, achilles bursitis and periosteal bruising.

With achilles tendonitis, the tendon will often be thickened and sometimes inflamed compared to the unaffected side. It will also have a positive 'pinch' test - pinching the tendon superior (proximal) to its attachment will produce pain. A positive pinch test directly at the calcaneal attachment may implicate the achilles bursae. Both of these conditions - achilles tendonitis and bursitis - may refer pain to the heel.

With periosteal bruising, the pain is widespread across the plantar surface of the heel rather than point sensitive at Shimian M-LE-5 (see below) in the region of the fascial attachment. Also watch for 'fat pad syndrome', which results in bruising of the heel from repetitive stress due to a thinning fat pad. This is often seen in women and the elderly. Occasionally plantar pain can be referred from the soleus muscle, in what Dr. Janet Travell in her text on trigger points describes as 'jogger's heel'.⁴ Consider further orthopaedic evaluation to differentiate if necessary.

Some patients do not report the predictable pattern of heel pain that is worse on taking the first steps in the morning or after prolonged sitting. It is possible that periosteal bruising as discussed above could present in such cases. Additionally, the practitioner must always consider entrapment of the medial plantar nerve. The pain is often similar to plantar fasciitis, but the patterns differ: the patient usually reports most relief in the morning, and pain worsens as the day progresses after walking, standing and other activities. Again, orthopaedic evaluation may be helpful.

In terms of examination, start with palpation at the centre of the plantar surface of the heel. This is the extraordinary point Shimian M-LE-5.⁵ Also palpate over the medial tubercle of the calcaneus, as the pain is often found on this medial surface of the heel. Pain with modest pressure from the finger or thumb strongly suggests plantar fasciitis, but you should compare sensitivity with the unaffected side. Pay attention, as you may be able to palpate a heel spur.

Plantar fasciitis is frequently associated with a change in training, such as increased mileage, hills or speed. A change in running shoe or running surface may also contribute to the condition. As with most lower-extremity

injuries, consider having the patient evaluated for biomechanical imbalances of the foot. Some texts suggest that up to 80 percent of these injuries are due to excessive foot pronation.⁶ Anatomical problems, like decreased fat pad thickness, leg length discrepancy, or high or low arches may also increase the chance of developing plantar fasciitis.

Overview of acupuncture treatment

Plantar fasciitis is most commonly diagnosed under the category of accident/trauma. It is usually a repetitive stress disorder due to the accumulation of micro-trauma. However, occasionally it may occur as an acute strain. Inflammation is at the level of the tendons, ligaments and bone. There is qi and blood stagnation in the channels and collaterals. Internal organ imbalances may also possibly contribute (see below). It is recommended to treat twice a week for three weeks, and then re-evaluate. Most uncomplicated cases will show improvement within six treatments. In chronic cases, continue treatment at least once weekly after the first three-week period.

The four steps

The following are points and techniques to consider in the treatment of the plantar fasciitis. This protocol is organised into four steps, an approach that is useful in sports medicine acupuncture. It makes point selection and needle technique simple, logical and systematic and is easy-to-understand and inclusive for acupuncturists from differing traditions and backgrounds.

Step one

Uses points and techniques that may have an immediate effect on the patient, such as a decrease in pain or an increase in range of motion.

Opposite extremity (upper/lower) method

Needle Shaofu HE-8, the shaoyin corresponding point. This is an example of treating the yin surface of the palm for symptoms on the yin surface of the foot. This point is sometimes effective in plantar fasciitis, and may be the first technique used in the treatment protocol. After needle insertion, have the patient walk (weight-bear) for up to five minutes. If there is improvement, retain the needle, and continue with the next steps. Note that Shaofu HE-8 is generally needled contralaterally, i.e. on the right hand for the left foot and vice-versa. If the condition is chronic it may be needled on the same side. If in doubt, palpation for tenderness may help determine the most appropriate side.

Step two

Channel and microsystem points that are not located at the site of injury

- Fuliu KID-7 plus Jiaoxin KID-8 or
- Dazhong KID-4 plus Shuiquan KID-5

Either of these two paired-point combinations may be helpful to activate the Kidney channel and treat symptoms of heel pain. Needle on the affected side, using palpation to assist in point selection.

- Taichong LIV-3 plus Yongquan KID-1

Taichong LIV-3 benefits the tendons and ligaments. Yongquan KID-1 is an adjacent point located directly in the plantar fascia where it separates into bands attaching toward the digits. Use of electrical stimulation between Taichong LIV-3 and Yongquan KID-1 frequently benefits the condition.

- Taixi KID-3 plus Kunlun BL-60
- (The region of) Chengjin BL-56 and Chengshan BL-57

The calf muscles (gastrocnemius and soleus group) should be palpated from the popliteal fossa at Weizhong BL-40 inferiorly to Chengshan BL-57. This area of the muscle may present with *ashi* points that can be incorporated into the treatment protocol. These may be considered secondary points.

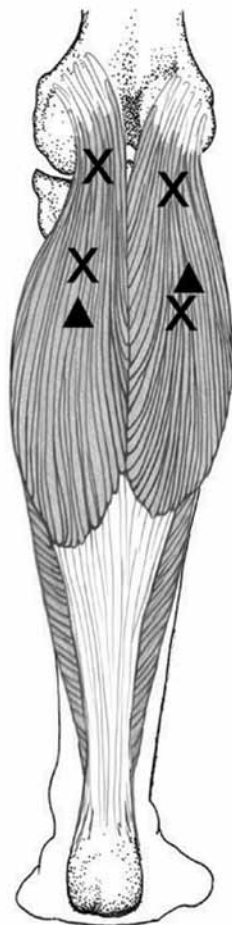


Figure 2: Trigger and motor points for plantar fasciitis (X denotes trigger points; ▲ denotes motor points)

Other points that may be used include Sanyinjiao SP-6, the crossing point of three leg yin, and Yanglingquan GB-34, the *hui-meeting* point of sinews.

Step three

Points that benefit the qi, blood and the zangfu organs

Plantar fasciitis is a repetitive stress injury and internal organ imbalances are therefore usually not causative factors. However, there are several *zangfu* patterns that may contribute to the condition:

- Liver qi stagnation, Liver yin deficiency and Liver blood deficiency

Liver imbalances may be observed in patients with plantar fasciitis. These imbalances result in susceptibility of the tendons to inflammation and repetitive stress injury.

- Kidney deficiency

Deficiency in the Kidney and Bladder channels may increase the susceptibility of the plantar fascia to repetitive stress injury.

Step four

Local and adjacent points at the site of injury

- The extraordinary point Shimian M-LE-5

The extraordinary point Shimian M-LE-5 is the 'target' zone of the plantar fascia and its attachment to the calcaneus. This point is located in the centre of the plantar surface of the heel.⁷ All local needling is in relationship to Shimian M-LE-5. Palpation will help determine the precise site of needle insertion. The practitioner may consider just one *ashi* point or as many as four needle insertions. This will be determined by the signs and symptoms of the patient and the size of the 'zone of pain' on the calcaneus and the attachment of the plantar fascia. The following is a summary of several variations for using this local point:

1. *Two points at Shimian M-LE-5*

Two needles are inserted perpendicularly into the two most sensitive *ashi* points in the region of Shimian M-LE-5. The depth is about 0.5 inches (varying with each patient). Some patients have a very thin 'fat pad' on the heel, making insertion depth less than 0.5 inch. Consider electrical stimulation.

2. *'Medial' Shimian*

Palpation often reveals tenderness near the medial tubercle of the calcaneus. This is about one-third of the distance between Shimian M-LE-5 and the point Zhaohai KID-6. Consider this zone to

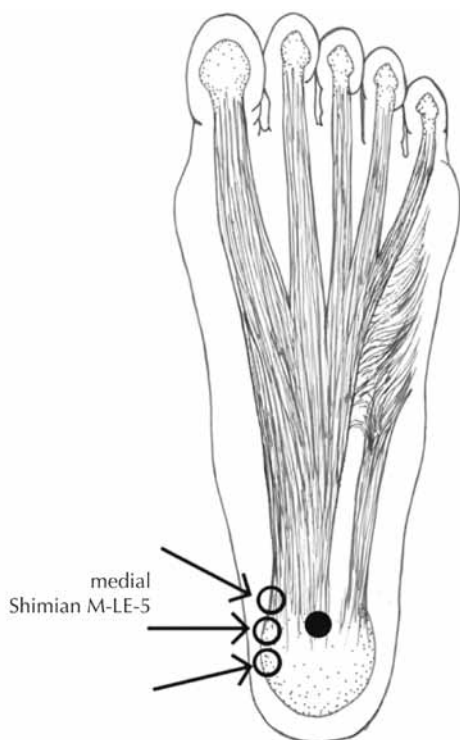


Figure 3: Shimian M-LE-5 and medial Shimian

be 'medial' Shimian. Insert the needle at medial Shimian, directed toward the centre of the heel to a depth of about one inch. Two needles may be used at this zone, determined by palpation. Electrical stimulation may also be of benefit.

3. Shimian M-LE-5 plus 'medial' Shimian

'Medial' Shimian may be paired with Shimian M-LE-5 in the centre of the heel. The needle inserted in the region of 'medial Shimian will be roughly at a 90 degree angle to the perpendicular insertion at Shimian M-LE-5 in the centre of the heel. In some cases, you could add a second set of needles, making four needles in total, i.e. two needles perpendicular at the centre of the heel and two inserted from the medial side towards the centre of the heel. Again, consider electrical stimulation on these four needles.

Comments on treatment technique

With each of the variations above, needling is directly into the plantar fascia at or near its attachment to the calcaneus - the site of qi stagnation and blood stasis. In theory, we are increasing micro-circulation through these tissues. However, with all direct needling comes the possibility of aggravation. Explain this to your patients so they can be prepared. The flaring up these tissues is often clinically beneficial.

Three depths of insertion

This technique may be more comfortable to the patient and may also reduce the possibility of aggravation. Use three depths of needle insertion during a 30-minute treatment session. For the first 10 minutes, the needles are inserted to a superficial depth. For the second 10 minutes, the needles are inserted deeper, to an intermediate depth. For the final 10 minutes, the needles are inserted to the deepest position. With this final depth, the needle approaches the plantar surface of the periosteum and the bone. If the needle hits the calcaneus, retract it slightly. Electrical stimulation may be used between paired points at each of the three depths.

Moxibustion

Warm needling may also be considered in this treatment. Some practitioners avoid needling directly into the heel, and therefore use only thread moxa. While they report good results with this technique, the inclusion of the needle is also recommended. Alternatively, you may follow needling with thread moxa at the site of insertion. Consider five small, rice grain-size threads at each point needled. ■

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Whitfield Reaves will be presenting a two-day seminar/workshop devoted to the shoulder and hip organised by The Journal of Chinese Medicine in Brighton, England on October 8th & 9th 2011 (www.jcm.co.uk/seminars-events).

Illustrations by Debrah Kelley

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