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Case Report

Treatment of Plantar Fasciitis with the *Yuan-Luo* Point Pair: A Clinical Case Report

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Abstract
This case report chronicles the treatment of a case of plantar fasciitis with acupuncture and *tui na* for more than six clinic visits. The patient was a 41-year-old female with plantar fasciitis for two months. A variety of acupuncture and electroacupuncture protocols were used at first, with no benefit. After the fourth and fifth visits, however, the patient experienced total relief of pain and a significant reduction in stiffness that persisted through her final visit two weeks later. These later treatments included the *yuan-luo* (origin-connecting) acupuncture point pair KI 3 and BL 58, which is one possible explanation for their effectiveness. The *yuan-luo* pair is a classical point combination with much theory behind it, yet no studies have been published regarding its practical uses in clinic. This case is an example of one practical application of the pair; further examples are needed.

1. Introduction

Plantar fasciitis, or plantar heel pain (PHP), is responsible for approximately 1 million patient visits to the doctor per year in the United States [1]. Although the etiology of PHP is not well understood, repeated microtrauma and/or increased tension to the deep plantar fasciada supportive band of the connective tissue superficial to the muscles on the plantar aspect of the foot are possible causes [2,3]. Patients will usually describe pain near the heel that is worse with the first steps of the day or after a period of inactivity. Standard treatment includes rest and ice, stretching, over-the-counter heel inserts, and short-term nonsteroidal antiinflammatory drugs. If symptoms persist, glucocorticoids, more costly custom orthotics and surgery may be considered [4].

In contemporary acupuncture practice, a variety of strategies are used in the treatment of PHP in the local or distal areas, standard acupuncture points, tender points, or myofascial trigger points with or without electroacupuncture. Different treatment approaches are sometimes contradictory, such as the application of moxibustion by some and ice by others, and no consensus exists as to which approach is more effective. Although such heterogeneity has undermined the demonstration of effectiveness

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of acupuncture for PHP in research [5], recent systematic reviews have reported significant benefits and the need for further research that recognizes the complexity of acupuncture and PHP [6,7]. The following is a case study in which a few different acupuncture and electroacupuncture protocols were applied to treat a patient with PHP, but significant relief came only after the use of a protocol that included a classical *yuan-luo* point pair.

2. Case presentation

The patient was an active 41-year-old female with PHP for two months. She experienced constant stiffness and pain on the plantar surface of her left foot, just distal to the heel, which was worse in the mornings. The pain was dull with a severity between 3 and 5 of 10 on the numeric rating scale (NRS) with 10 being the worst pain. Precipitating factors included cold weather, running, and prolonged standing. Pain was alleviated by pressure applied to the plantar foot at the area of pain. Tender points were palpated along the left calf. The patient had a second chief complaint of left-sided low back pain (4 to 7 out of 10 on the NRS) with radiation midway down the posterior thigh lasting two years. The pain would come on after prolonged sitting and last for a couple hours to a day. Tender points were palpated on the left near the point GB 30. The patient exercised four to five times per week (running, biking, and hiking). She experienced some relief (reduced frequency and intensity) of low back pain from physical therapy but received no other treatments for PHP before acupuncture.

The PHP was located along the kidney channel pathway at the left plantar heel. The fact that it improved with pressure indicated that pain was due to deficiency in the channel. Dry mouth and eyes; nocturia; weakness in the knees; lower back pain; a hot feeling; thirst; a small, red, cracked tongue with a peeled coating at the edges; and a thin, rapid pulse indicated kidney and liver yin deficiency with empty heat. Taking the patient's athletic lifestyle into account, the PHP was viewed as an overuse injury facilitated by the aforementioned *zang-fu* organ imbalance. Because the pain at the low back and posterior thigh was sharp and tender points were palpated there and along the calf, an excess presentation of qi and blood stagnation along the bladder channel was assumed. The dusky nature of the tongue and the wiry pulse indicated liver qi stagnation.

The patient committed to six acupuncture visits because that was the number her health insurance would cover. Five acupuncture treatments were delivered at a frequency of one treatment per week with a final treatment two weeks later. Acupuncture needles (spring type; DBC brand, Korea) were inserted with the patient in a prone position and retained for thirty to thirty-five minutes. A Teding Diancibo Pu lamp was placed twelve inches above the left buttock although needles were retained, and *tui na* pressing and rolling on the left buttock, grasping on the left calf, pushing and pressing on the left plantar foot was performed for six to eight minutes after each acupuncture treatment. Between visits, the patient was advised to massage the bottom of her left foot in the mornings and evenings with a tennis ball. The details of acupuncture points and needling methods used at each clinic visit are provided in Table 1. Peak PHP scores recorded each visit throughout the course of treatment are provided in Fig. 1.

The patient continued to experience constant PHP between a 3 and 5 of 10 on the NRS during the week after her first visit. The duration of low back pain episodes reduced from hours to less than a minute, but no change in radiation or intensity was reported. Electroacupuncture was, therefore, applied for thirty minutes between the points BL 63 and KI 2, and the point BL 37 at the terminus of leg pain was added on visit two. Still, constant 3 to 5 of 10 PHP was reported; however, the patient only experienced one episode of low back pain during the following week that resolved on its own immediately. Owing to poor results on the foot, the points BL 63 and KI 2 were discarded on the third visit and replaced by a "surround the dragon" needle formation. Needles were inserted on the plantar surface of the left foot just distal to the heel: four needles inserted at points 0.5 inches distal, proximal, lateral, and medial to and pointed toward the center of the site of discomfort. Electroacupuncture was applied between the medial and lateral points in the formation for thirty minutes. Electroacupuncture was also applied between the points GB 30 and BL 37 for thirty minutes during this treatment, and the point BL 36 was added because despite a significant decrease in low back pain frequency and duration, the pattern of pain radiation had not changed. The patient experienced complete relief of low back pain (0 of 10 on the NRS) from that moment through her final visit. Her PHP remained constant between a 3 and 5 of 10 on the NRS.

On the fourth visit, the *yuan-luo* point combination was applied. The *yuan* point of the kidney channel (KI 3) was chosen and paired with the *luo* point of the bladder channel (BL 58). Both were needled on the left side. BL 58 was needled first until an achy *de qi* response was experienced by the patient and increased pull-out force was noted by the practitioner. KI 3 was needled then, and the patient experienced an electric sensation that spread quickly across the plantar aspect of the foot and then subsided. BL 56 and BL 57 were added to release the calf, and points were added (Table 1) for a new complaint of right-sided neck pain that had emerged that week with unknown cause. During the following week, the patient experienced only occasional, mild discomfort (1 of 10 on the NRS) and stiffness in the bottom of the foot. Complete relief of pain (0 of 10 on the NRS) with only mild stiffness in the mornings was reported after the same treatment was repeated on the fifth visit with additional points (Table 1) for neck pain. These same results persisted over the next two weeks, and the treatment was repeated a final time. The patient elected to discontinue treatment because her insurance benefits for acupuncture and physical therapy were exhausted. She did not respond to a follow-up phone call or email eighteen months later.

3. Discussion

In this case report, a 41-year-old female with PHP experienced complete relief of pain after six acupuncture

Table 1 Points and methods used by visit.

Point	Rationale	Needling method	Needle
At every visit:			
BL 65 (L)	Stream (*shu*) of the BL chan.; for BL chan. pain	PERP 0.3 *cun* deep to *de qi* response	0.25 × 30 mm
SI 3 (R)	Pair w/BL 65; *shu* of SI chan.	PERP 1 *cun* deep to *de qi* response	0.25 × 40 mm
BL 60 (L)	For back and BL chan. pain	PERP 0.5 *cun* deep to *de qi* response	0.25 × 30 mm
GB 30 (L)	For sciatica	PERP 2.5 *cun* deep to *de qi* response; rotated clockwise 180° 6 rotations every 10 min.	0.30 × 75 mm
BL 54 (L)	For sciatica	PERP 2 *cun* deep to *de qi* response; rotated clockwise 180 × 6 rotations every 10 min.	0.30 × 75 mm
SP 6 (B/L)	Nourish yin and SP, LR, KI	PERP 1 *cun* deep to *de qi* response	0.25 × 40 mm
Visit #1:			
KI 2 (L)	Spring (*ying*) of the KI chan.; For KI chan. pain & def. Heat	PERP 0.5 *cun* deep to *de qi* response; rotated clockwise 180 × 6 rotations every 15 min.	0.25 × 30 mm
BL 63 (L)	Cleft (*xi*) of BL chan.; for acute-type pain	PERP 0.5 *cun* deep to *de qi* response; rotated clockwise 180 × 6 rotations every 15 min.	0.25 × 30 mm
BL 39, 40 (L)	For sciatica	PERP 1 *cun* deep to *de qi* response	0.25 × 40 mm
Visit #2:			
KI 2, BL 63 (L)	Same as above	Same as above þ EA 2 Hz continued for 30 min.	0.25 × 30 mm
BL 39, 40 (L)	Same as above	Same as above	0.25 × 40 mm
BL 37 (L)	For sciatica	PERP 1 *cun* deep to *de qi* response; rotated clockwise 180 × 6 rotations every 10 min.	0.25 × 40 mm
Visit #3:			
"Surround the Dragon" to treat local foot pain 4 needles inserted at points 0.5 *cun* distal, proximal, lateral, and medial to the site of pain		1 *cun* deep toward site of pain. EA 2/100 Hz mixed medial to lateral points for 30 min.	0.25 × 30 mm
GB 30, BL 37 (L)	Same as above	Same as above þ EA 2/100 Hz mixed 30 min.	As above
BL 39, 40 (L)	Same as above	Same as above	0.25 × 40 mm
BL 37 (L)	Same as above	Same as above	0.25 × 40 mm
BL 36 (L)	For sciatica	PERP 2 *cun* deep to *de qi* response; rotated clockwise 180 × 6 rotations every 10 min.	0.30 × 75 mm
Visit #4:			
KI 3 (L)	*Yuan* of KI chan.; w/BL 58 for deficiency. type low back & leg pain, difficulty walking	PERP 0.5 *cun* deep until electric sensation spread quickly across the plantar foot	0.25 × 30 mm
BL 58 (L)	Pair w/KI 3; *luo* of BL chan.	PERP 1 *cun* deep to *de qi* response	0.25 × 40 mm
BL 56, 57 (L)	Benefit calf & heel	PERP 1 *cun* deep to *de qi* response	0.25 × 40 mm
GB 20 (R)	For disorders of the neck	0.5 *cun* deep toward the tip of nose to *de qi*	0.25 × 30 mm
BL 62 (L)	Pair w/SI 3 to open GV	0.5 *cun* deep toward center of joint to *de qi*	0.25 × 30 mm
Visits #5 & #6:			
KI 3, BL 58 (L)	Same as above	Same as above	As above
BL 56, 57 (L)	Same as above	Same as above	0.25 × 40 mm
GB 20 (R)	Same as above	Same as above	0.25 × 30 mm
BL 62 (L)	Same as above	Same as above	0.25 × 30 mm
LU 7 (L)	Open *Ren mai*; benefits nape	TVS proximally along channel 0.5 *cun* deep	0.25 × 30 mm
KI 6 (R)	Pair w/LU 7; nourishes KI yin	0.5 *cun* deep toward center of joint to *de qi*	0.25 × 30 mm
GB 21 (R)	For disorders of the neck	OBL posterior 1 *cun* deep w/muscle twitch	0.25 × 40 mm
GB 39 (R)	For disorders of the neck	PERP 1 *cun* deep to *de qi* response	0.25 × 40 mm
SI 14, 15 (R)	For levator scapulae disorders	OBL inferior-lateral 0.5 *cun* deep	0.25 × 30 mm

PERP = perpendicular; OBL = oblique; TVS = transverse; EA = electroacupuncture; chan. = channel.

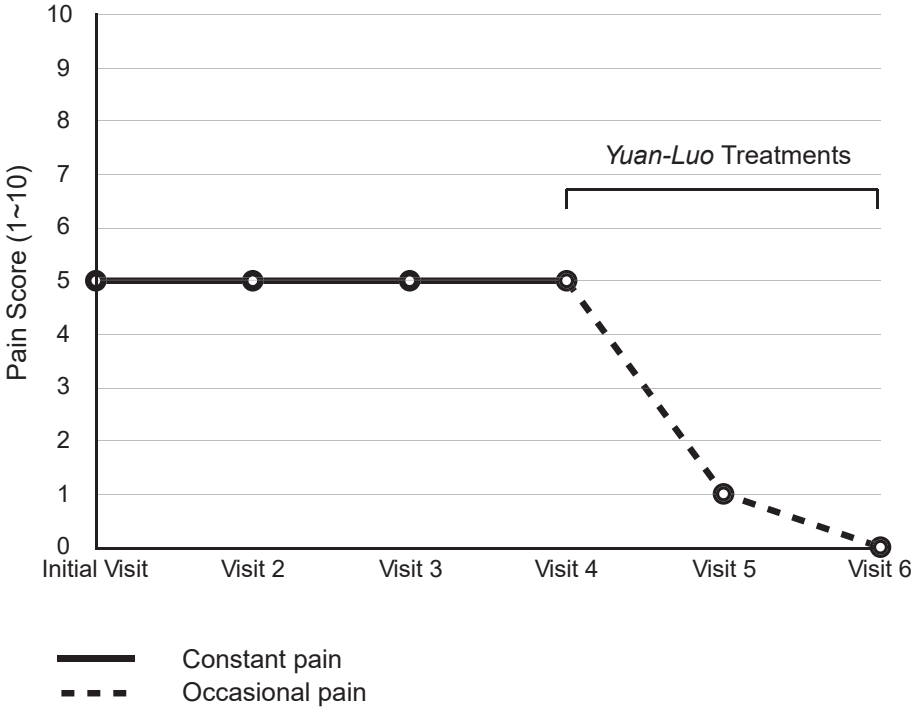

Figure 1 Peak plantar heel pain scores by visit.

and *tui na* treatments. Three different acupuncture protocols were used on the foot over the course of treatment. The first featured two points that flank the plantar heel which are indicated when there is acute-type pain and deficiency heat KID 2, the spring (*ying*) point of the kidney channel, and BL 63, the cleft (*xi*) point of the kidney channel's interior—exterior pair , the bladder channel used with and without electroacupuncture. The second featured a "surround the dragon" formation indicated in pain conditions, especially where pain is fixed in one location used with electroacupuncture. The third protocol featured the *yuan luo* point pair KI 3 and BL 58 as well as a variety of points along the calf. The patient's pain did not improve immediately after the use of KI 2 and BL 63 or the "Surround the Dragon" formation but dropped five points on the NRS from a 5 to a 0 of 10 after KI 3, BL 58, and the points on the calf were applied on the fourth and fifth clinic visits.

The use of a classical *yuan-luo* point pair is one possible explanation for the change in results after visit four. There is an extensive theory behind the use of *yuan* and *luo* points. The qi of *yuan* points corresponds to the *yuan* (original) qi, and they may be used when any of the *zang fu* organs are diseased. *Luo* points correspond to a network of *luo* channels between the main channels and the skin. They may be used alone to affect areas influenced by the *luo* channels or to treat symptomology specific to each *luo* channel [for further information, *Ling Shu* (Spiritual Pivot) chapter 10]. *Yuan* and *luo* points on interiorly and exteriorly related channels may be combined in a "host—guest" pairing in which the *yuan* point functions as host to tonify a diseased channel and/or organ, and the *luo* point functions as guest to enhance the effect of the host [8] (For a list of *yuan* and *luo* points, refer to the book *The Foundations of Chinese Medicine: A Comprehensive Text for Acupuncturists and Herbalists*, 2 ed. by Giovanni Maciocia [9]).

The *yuan luo* pair of the kidney—bladder was chosen on the patient's fourth visit for two main reasons. First, because the patient's pain had shown some early resistance to treatment, it seemed prudent to dredge the network of *luo* channels associated with the area of pain. This strategy can be very useful especially in recalcitrant or chronic cases because it is in the *luo* network especially that blood becomes knotted over time. Needling at the *luo* point of an affected channel can help break up old stagnation and relieve pain. The *luo* point of the bladder channel was selected in this case because of the channel's association with the calf where tender points of stagnation, as well as the heel, had been palpated . The second reason this particular pair was chosen was related to the location of pain (in the area of the kidney channel on the plantar aspect of the foot) and its deficiency presentation (relieved by direct pressure), as well as the presence of kidney deficiency symptoms (nocturia, weakness in the knees, and lower back pain). KI 3 was selected as the host point to tonify the kidney channel and organ, and BL 58 served as guest to enhance this function.

There are other possible explanations for the effectiveness of later treatments besides the *yuan- luo* pair. Owing to the limitations of this case study, they cannot be ruled out. First, KI 3 can be effective on its own for PHP, as can BL 62 and the distal point SI 3. Second, BL 56, BL 57, and BL 58 can be used without KI 3 to release myofascial trigger points in the calf commonly associated with PHP. *Tui na* may also be used in this effect. Third, acupuncture protocols previously used may have had a delayed effect or facilitated the benefits of the *yuan-luo* treatments. Fourth, the successful treatment of sciatica may have contributed to PHP resolution by altering gait or reducing chronic channel stagnation. Similarly, the treatment of neck pain may have played a role, especially if its onset between visits three and four was

part of a complex response to treatments to restore the free flow of qi and blood in the channels. Finally, there is natural remission and placebo response.

Follow-up was limited in this case report. Long-term follow-up attempts were unsuccessful, so there is no way to know if results were sustained. Furthermore, if the patient had been able to commit to more than six visits, each acupuncture protocol might have been given more chances to yield results before being replaced, and follow-up care would have continued for an appropriate amount of time once results emerged to ensure sustained relief. As it stands, however, there is value in this case report as an example of how insurance limits and out-of-pocket costs can be barriers to preferred treatment practices.

PHP can be a complex issue for which a variety of treatment approaches are necessary. The main value of this case report lies in its presentation of at least three distinct acupuncture and electroacupuncture protocols that may be used for PHP. One of these protocols stands out as a practical application of the classical theory of the *yuan-luo* point pair. Further research with sufficient long-term follow-up that compares the effectiveness of these and other acupuncture strategies for various types of PHP is needed, as well as examples of other practical uses of the *yuan-luo* pair.

Disclosure statement

The author has neither financial interests nor conflicts of interest to declare in relation to the material in the manuscript.

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