

Accepted Manuscript

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PII: S2005-2901(18)30136-5

DOI: <https://doi.org/10.1016/j.jams.2019.05.003>

Reference: JAMS 451

To appear in: *Journal of Acupuncture and Meridian Studies*

Received Date: 11 July 2018

Revised Date: 19 May 2019

Accepted Date: 24 May 2019

Please cite this article as: Day J, Treatment of Plantar Fasciitis with the *Yuan-Luo* Point Pair: A Clinical Case Report, *Journal of Acupuncture and Meridian Studies*, <https://doi.org/10.1016/j.jams.2019.05.003>.

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Treatment of Plantar Fasciitis with the *Yuan-Luo* Point Pair:

A Clinical Case Report

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Keywords

acupuncture;

electroacupuncture;

yuan luo;

origin connecting;

plantar fasciitis;

plantar heel pain

Abstract

This case report chronicles the treatment of a case of plantar fasciitis with acupuncture and *tuina* over 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.

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]. Though the etiology of PHP is not well understood, repeated micro-trauma and/or increased tension to the deep plantar fascia - a supportive band of 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 non-steroidal anti-inflammatory drugs. If symptoms persist, glucocorticoids, more costly custom orthotics, and surgery may be considered [4].

In contemporary acupuncture practice, a variety of strategies are utilized in the treatment of PHP - 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. While such heterogeneity has undermined the demonstration of effectiveness 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.

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, that was worse in the mornings. The pain was dull with a severity between 3 and 5 out 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, hiking). She experienced some relief (reduced frequency and intensity) of low back pain from physical therapy, but received no other treatments for PHP prior to 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 *zangfu* organ imbalance. Since 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 *TDP* lamp was placed twelve inches above the left buttock while needles were retained, and *tuina* - 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 following 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.

The patient experienced no relief in PHP in the week following 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 therefor 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. Once again, no relief in PHP was achieved, however, the patient only experienced one episode of low back pain during the following week that resolved on its own immediately. Due 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 from that moment through her final visit. Her PHP did not significantly change.

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 next, and the patient experienced an electric sensation that spread quickly across the plantar aspect of the foot then subsided. BL 56 and BL 57 were added to release the calf, and points were added (see 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 out of 10 on the NRS) and stiffness in the bottom of the foot. Complete relief of PHP was achieved after the same treatment was repeated on the fifth visit with additional points (see Table 1) for neck pain. Pain relief persisted over the next two weeks, with only mild stiffness in the mornings, 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.

Discussion

In this case report, a 41-year-old female with PHP experienced complete relief of pain after six acupuncture and *tuina* 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 out 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 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 *zangfu* 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, see *Ling Shu* (Spiritual Pivot) chapter 10]. *Yuan* and *luo* points on interiorly-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, see *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, since 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 had been palpated - and with the heel. 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, 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. *Tuina* may also be used to 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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Table 1. Points and methods used by visit.

At every visit:			
Point	Rationale	Needling Method	Needle
BL 65 (L)	Stream (<i>shu</i>) of the BL chan.; for BL chan. pain	PERP 0.3 <i>cun</i> deep to <i>de qi</i> response	0.25x30mm
SI 3 (R)	Pair w/ BL 65; <i>shu</i> of SI chan.	PERP 1 <i>cun</i> deep to <i>de qi</i> response	0.25x40mm
BL 60 (L)	For back and BL chan. pain	PERP 0.5 <i>cun</i> deep to <i>de qi</i> response	0.25x30mm
GB 30 (L)	For sciatica	PERP 2.5 <i>cun</i> deep to <i>de qi</i> response; rotated clockwise 180° 6 rotations every 10 min.	0.30x75mm
BL 54 (L)	For sciatica	PERP 2 <i>cun</i> deep to <i>de qi</i> response; rotated clockwise 180° 6 rotations every 10 min.	0.30x75mm
SP 6 (B/L)	Nourish yin and SP, LV, KI	PERP 1 <i>cun</i> deep to <i>de qi</i> response	0.25x40mm
Visit #1:			
Point	Rationale	Needling Method	Needle
KI 2 (L)	Spring (<i>ying</i>) of the KI chan.; For KI chan. pain & def. heat	PERP 0.5 <i>cun</i> deep to <i>de qi</i> response; rotated clockwise 180° 6 rotations every 15 min.	0.25x30mm
BL 63 (L)	Cleft (<i>xi</i>) of BL chan.; for acute-type pain	PERP 0.5 <i>cun</i> deep to <i>de qi</i> response; rotated clockwise 180° 6 rotations every 15 min.	0.25x30mm
BL 39, 40 (L)	For sciatica	PERP 1 <i>cun</i> deep to <i>de qi</i> response	0.25x40mm
Visit #2:			
Point	Rationale	Needling Method	Needle
KI 2, BL 63 (L)	Same as above	Same as above + EA 2Hz cont. for 30 min.	0.25x30mm
BL 39, 40 (L)	Same as above	Same as above	0.25x40mm
BL 37 (L)	For sciatica	PERP 1 <i>cun</i> deep to <i>de qi</i> response; rotated clockwise 180° 6 rotations every 10 min.	0.25x40mm
Visit #3:			
Point	Rationale	Needling Method	Needle
“Surround the Dragon” to treat local foot pain - 4 needles inserted at points 0.5 <i>cun</i> distal, proximal, lateral, and medial to the site of pain		1 <i>cun</i> deep toward site of pain. EA 2/100Hz mixed medial to lateral points for 30 min.	0.25x30mm
GB 30, BL 37 (L)	Same as above	Same as above + EA 2/100Hz mixed 30 min.	As above

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BL 39, 40 (L)	Same as above	Same as above	0.25x40mm
BL 37 (L)	Same as above	Same as above	0.25x40mm
BL 36 (L)	For sciatica	PERP 2 <i>cun</i> deep to <i>de qi</i> response; rotated clockwise 180° 6 rotations every 10 min.	0.30x75mm
Visit #4:			
Point	Rationale	Needling Method	Needle
KI 3 (L)	<i>Yuan</i> of KI chan.; w/ BL 58 for def. type low back & leg pain, difficulty walking	PERP 0.5 <i>cun</i> deep until electric sensation spread quickly across the plantar foot	0.25x30mm
BL 58 (L)	Pair w/ KI 3; <i>luo</i> of BL chan.	PERP 1 <i>cun</i> deep to <i>de qi</i> response	0.25x40mm
BL 56, 57 (L)	Benefit calf & heel	PERP 1 <i>cun</i> deep to <i>de qi</i> response	0.25x40mm
GB 20 (R)	For disorders of the neck	0.5 <i>cun</i> deep toward the tip of nose to <i>de qi</i>	0.25x30mm
BL 62 (L)	Pair w/ SI 3 to open <i>Du mai</i>	0.5 <i>cun</i> deep toward center of joint to <i>de qi</i>	0.25x30mm
Visits #5 & #6:			
Point	Rationale	Needling Method	Needle
KI 3, BL 58 (L)	Same as above	Same as above	As above
BL 56, 57 (L)	Same as above	Same as above	0.25x40mm
GB 20 (R)	Same as above	Same as above	0.25x30mm
BL 62 (L)	Same as above	Same as above	0.25x30mm
LU 7 (L)	Open <i>Ren mai</i> ; benefits nape	TVS proximally along channel 0.5 <i>cun</i> deep	0.25x30mm
KI 6 (R)	Pair w/ LU 7; nourishes KI yin	0.5 <i>cun</i> deep toward center of joint to <i>de qi</i>	0.25x30mm
GB 21 (R)	For disorders of the neck	OBL posterior 1 <i>cun</i> deep w/ muscle twitch	0.25x40mm
GB-39 (R)	For disorders of the neck	PERP 1 <i>cun</i> deep to <i>de qi</i> response	0.25x40mm
SI 14, 15 (R)	For levator scapulae disorders	OBL inferior-lateral 0.5 <i>cun</i> deep	0.25x30mm

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