

Clinical Experience of Dr. Shen Yongqin in Treating Plantar Fasciitis with the Micro-Needle Knife Technique

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Abstract: This case report presents the clinical approach employed by Chief Physician Dr. Shen Yongqin in treating a patient with plantar fasciitis. In traditional Chinese medicine (TCM), plantar fasciitis is classified under the category of *jingjin disorders* (sinew-related syndromes). Its pathogenesis is closely related to dysfunction of the sinews and bones of the lower limbs and insufficient nourishment of the foot meridians. According to TCM theory, the Kidney governs the bones and generates marrow, while the Liver governs the sinews and stores blood. When the body is in a state of deficiency particularly involving the Liver and Kidney the sinews and meridians may become malnourished and blocked, leading to the development of this condition. Guided by both modern myofascial theory and traditional meridian theory, Dr. Shen applied the micro-needle knife technique to offer a minimally invasive, safe, and effective TCM-based treatment for plantar fasciitis. This paper documents the case with the aim of sharing clinical insights with fellow practitioners.

1. Introduction

Patient: Liu, female, 53 years old, presented on November 6, 2024.

Chief complaint: Bilateral plantar pain for six months, worsened over the past month.

History of present illness: Six months ago, the patient developed swelling and pain in both soles without obvious cause, accompanied by restricted mobility and aggravation after physical exertion. To clarify the diagnosis, she visited a local hospital, where foot X-rays revealed small heel spurs. She received treatment including shockwave therapy, topical herbal plasters, infrared irradiation, and oral anti-inflammatory analgesics. Symptoms were partially relieved but recurred intermittently with fatigue. One month ago, after traveling, her symptoms worsened, with pain radiating to both calves and the lower back. Severe heel pain occurred upon first weight-bearing in the morning.

Physical examination: No obvious deformity in either foot. Marked tenderness on the plantar surface; a cord-like nodule could be palpated. Pain intensified with dorsiflexion of the toes, indicating tension in the plantar fascia. Ultrasound examination showed bilateral thickening and edema of the plantar aponeurosis.

TCM tongue and pulse: Tongue was pale with scant fluids and a thin white coating; pulse was

deep, thin, and choppy.

TCM diagnosis: Bi Syndrome (Liver and Kidney deficiency pattern)

Western medicine diagnosis: Plantar fasciitis

Treatment: Micro-needle knife therapy (specification: 0.4 mm × 25 mm) was applied. First, a straight insertion was performed at Shenshu (located below the spinous process of the second lumbar vertebra); then, both Chengshan points (located in the lower belly of the gastrocnemius muscle) were treated with direct insertion. Finally, the nodular adhesion in the plantar fascia was released.

After the first treatment, the patient's foot pain was significantly relieved. At the one-week follow-up, the same procedure was repeated. The plantar nodules were no longer tender, and walking was normal.

2. Commentary

Plantar fasciitis, also known as runner's heel, chronic heel pain, or heel pain syndrome [1], is a chronic, non-infectious inflammatory condition caused by injury to the plantar fascia [2]. Clinically, it presents as a pulsating, stabbing pain at the heel or the medial side of the sole, most severe during the first step in the morning or after prolonged rest [3]. Although the exact etiology remains unclear, several well-recognized risk factors include improper footwear, poor gait mechanics (e.g., excessive pronation), rapid weight gain in late stages, sudden increase in walking or running, flatfoot, weak intrinsic foot muscles, and poor lower limb flexibility [4]. Modern pathological studies have shown that degeneration of collagen fibers in the plantar fascia, disordered fiber alignment, and excessive proliferation of mucous matrix and fibrovascular cells are common features, while inflammatory cells such as leukocytes, lymphocytes, or giant cells are rarely observed. Therefore, degeneration at the calcaneal insertion of the plantar fascia, repeated microtrauma, and sterile inflammation are considered the main pathological mechanisms [5].

From the perspective of TCM, the condition known as "heel pain" (*zhǒng tòng*) was already recorded in the *Huangdi Neijing* (Yellow Emperor's Inner Canon). For instance, *Lingshu: The Twenty-Five Types of People* states: "When blood and qi are abundant, the heel is full and firm; when qi is deficient and blood is excessive, the heel feels hollow; when both blood and qi are deficient, heel pain and muscle cramping result." Based on the etiology and clinical manifestations of this disease, it can be classified within the category of *jingjin disorders* (sinew-related conditions) in TCM [6]. The *Suwen: On Atrophy* states: "The Liver governs the body's fascia." Likewise, the *Suwen: Regulating the Channels* notes: "The Liver stores blood, and blood nourishes the sinews." Thus, when Liver blood is abundant, the fascia is well nourished, maintaining its elasticity and tensile strength. Conversely, Liver blood deficiency results in poor nourishment of the fascia, leading to stiffness, contracture, and pain. The *Suwen: Clarifying the Five Qi* further states: "The Kidney governs the bones." Kidney essence generates marrow, which nourishes the bones, and since "the sinews and bones are interconnected," Kidney essence also indirectly nourishes the fascia [7]. Moreover, the Kidney is described as "the organ of strength." When Kidney qi is sufficient, the sinews and bones are robust and resilient against overuse injuries. In summary, for this particular case, the root lies in a deficiency of the Liver and Kidney, compounded by excessive physical strain deficiency at the root with excess at the manifestation. The *Suwen: Discourse on the Ancient True Man* states: "By the seventh seven-year cycle, the Ren Mai is depleted, the Chong Mai wanes, and Tian Gui is exhausted..." This patient is a middle-aged woman, constitutionally weak, now over fifty, with insufficient Liver blood and declining Kidney essence, leaving her unable to nourish the meridians and support the bones. Coupled with chronic overuse, repeated traction of the plantar fascia results in the formation of pathological trigger points "pain as the acupoint" which obstruct local qi and blood flow, thus leading to the onset of the condition.

In this case, Dr. Shen integrated modern “myofascial theory” with the traditional theory of meridians and collaterals. Guided by this combined framework, and using the micro-needle knife as a tool, he achieved excellent clinical results. The concept of the muscular chain was first introduced by the renowned Belgian manual therapist Godalieve Struyf-Denys [8]. Building on her work, Thomas Myers further validated and refined this theoretical system through anatomical studies [9]. According to this theory, the fascia of the human body forms a “web-like structure” that distributes tension internally based on local biomechanical demands, thereby ensuring balanced force transmission across tissues. Balance brings stability; imbalance leads to pain. In long-term clinical practice, it has been observed that the site of pain is not always the site of mechanical stress. Therefore, effective treatment involves not only addressing the local pain site but also releasing chronic tension along distant points of the fascial chain that may be contributing to the dysfunction. As a result, both local and segmentally related fascial areas should be addressed during treatment [10–12]. In this particular case, the recurrence of symptoms extended to the patient’s lower back and calves. Hence, Dr. Shen deliberately selected the acupoint “Chengshan” (BL57) for treatment. The *Great Compendium of Acupuncture and Moxibustion*, “Ode to the Channels and Points of the Whole Body” states: “Foot Bladder belongs to Taiyang, running in two lines along the back. It exhausts the extreme Yin at the entrance of Tonggu, traces the Bundle Bone in the region of Jinggu. Shenmai and Pihu act as guides, Kunlun opens the Golden Gate beside the ankle. It aspires to the vigor of Fuyang and Feiyang, and turns through the routes of Chengshan and Chengjin.” In combination with the course of the Foot Taiyang Bladder Meridian and the special location of Chengshan point, Chengshan was often used by ancient physicians to treat disorders of the limbs and channels, such as muscle cramps, lumbar and leg pain, and flaccidity or numbness of the lower limbs. *The Ode of Xi Hong* states: “For cramps and dizziness, needle the fish belly—Chengshan and Kunlun take immediate effect.” *The Essential Meaning of Tongxuan* says: “When sinews spasm with pain, drain Chengshan early.” *The Song of Acupoint Methods for Miscellaneous Diseases* records: “If the foot cramps and eyes go dim, the ancient method lies in Yanggu and Chengshan.” As Chengshan point is located in the depression between the flesh below the intestines, it helps maintain coordinated movement between the two muscles, thus producing significant therapeutic effects in treating disorders of the sinews and channels. “Chengshan” is located at the midpoint of the posterior lower leg, in the depression that appears below the gastrocnemius muscle belly when the leg is fully extended or the heel is lifted. Clinical experience has shown that the gastrocnemius muscle plays a key role in treating plantar fasciitis, especially chronic cases. From an anatomical perspective, the calcaneus is situated between the plantar aponeurosis and the Achilles tendon of the gastrocnemius, functioning similarly to a sesamoid bone. When the gastrocnemius becomes tight or contracted, it increases tension in the Achilles tendon, which in turn overstretches the plantar fascia. This leads to chronic injury at the fascia’s calcaneal insertion. Current research suggests that gastrocnemius tightness is implicated in various foot disorders, including flatfoot, metatarsalgia, heel pain, and hallux valgus [13–14]. From a traditional Chinese medicine perspective, acupuncture treatment follows the principle that “where the meridians pass, the treatment reaches.” The two main meridians traversing the plantar region are the Kidney Meridian of Foot-Shaoyin and the Bladder Meridian of Foot-Taiyang; hence, Shenshu (BL23) was selected as a key point. Shenshu, also known as *Gaogai*, *Shaoyinshu*, and *Shennian* [15]. Regarding the specific location of Shenshu, there are multiple entries in the *Great Compendium of Acupuncture and Moxibustion*, with generally consistent descriptions. In *Volume 6: Verified Acupoint Methods* of the *Great Compendium of Acupuncture and Moxibustion*, Shenshu is located as: “Below the 14th vertebra, 1.5 cun lateral to each side of the spine, level with the navel, located while sitting upright.” In *Volume 7: Collection of the Five Zang Mu Points*, Shenshu is described as: “1.5 cun lateral on each side below the 14th vertebra.” In *Volume 8: Acupoint Methods*, it is described as: “Located below the 14th vertebra, 1.5 cun to each side, level with the navel.” From the above texts,

it can be concluded that Shenshu is located 1.5 cun lateral to the lower border of the 14th vertebra. Regarding the method of locating Shenshu, *Volume 9: Method for Locating Shenshu* of the *Great Compendium of Acupuncture and Moxibustion* states: “Stand upright on level ground, use a rod to measure the level to the navel, then use this rod to measure along the spinal bone to determine the level aligned with the navel. Then measure 1.5 cun to the left and right to locate the point — that is Shenshu.” This is also an ancient simplified method for locating Shenshu. Shenshu, belonging to the Foot Taiyang Bladder Meridian, is the site where Kidney Qi is infused and transmitted from the back. It is the Back-Shu point of the Kidney, with the functions of tonifying the kidney and grasping Qi, strengthening the tendons and bones, nourishing the marrow and benefiting the ears, securing essence and stopping leakage, regulating menstruation and stopping abnormal vaginal discharge [16]. It is mainly used to treat urinary system disorders, lumbar diseases, male disorders, gynecological disorders, deafness and tinnitus, and lower limb conditions. Modern *Meridian and Acupoint Studies* records that Shenshu is mainly indicated for male disorders, gynecological diseases, urinary system diseases, tinnitus and deafness, low back pain, and lower limb disorders, which are largely consistent with the indications recorded in the *Great Compendium of Acupuncture and Moxibustion*. For example, *Volume 6: Verified Acupoint Methods* records: “Shenshu is indicated for deficiency fatigue and emaciation, deafness due to kidney deficiency, chronic coldness of the water organs, fullness and distension of the membranes of the heart and abdomen, and distending sharp pain from hypochondriac fullness pulling toward the lower abdomen.”

Regarding the nodular lesion on the plantar fascia, Dr. Shen emphasized the importance of precise and meticulous palpation before performing micro-needle knife therapy. As early as the Stone Age, humans were already using tools such as stones and wooden sticks to press and rub painful areas of the body in order to relieve discomfort [17]. With the accumulation of therapeutic experience, ancient Chinese physicians summarized common pain sites and patterns of occurrence in human muscles, and thereby developed the theory of *jingjin* (sinew meridians). The *Lingshu* divides the *jingjin* into twelve pathways. These twelve *jingjin* are based on the regular meridians, each with its own specific distribution pattern and function. It also proposed the treatment principle of “taking pain as the acupoint” (*yi tong wei shu*). This approach taking the theory of *jingjin* as its foundation and “treating based on pain” as its guiding principle gradually became a primary method in traditional Chinese medicine for treating soft tissue injuries. Through long-term clinical practice, this theory has been proven effective in relieving pain in the muscles and their associated soft tissues. In chronic plantar fasciitis cases, fascial lesions such as “knots” or “cord-like bands” are often present. These “fascial nodules” must be identified through sliding, kneading, and strumming palpation using the physician’s fingertip pads. When a hard nodule or band is palpated, accompanied by a snapping sensation and significant soreness reported by the patient, this indicates the location of the fascial lesion. The supervisor has been practicing medicine for 39 years. In the early stages of his career, he pursued advanced studies at the Shanxi Institute of Acupuncture and Moxibustion, where he studied the New Nine-Needle Therapy under Professors Huai Tang and Qi Yue. He later became a recognized inheritor of the “Nine-Needle Therapy,” an intangible cultural heritage of Shanxi Province, and subsequently applied the New Nine-Needle techniques widely in clinical practice. With the advancement of techniques and improvement of needle instruments, and in order to reduce patient discomfort and minimize operational risks, our team, under the guidance of the supervisor, began research into the minimally invasive needle knife pain-relief technique in 2016. We have developed specific insights into the selection of needle instruments. Traditional needle knives have relatively thick shafts, large incision areas, and strong stimulation intensity, producing a pronounced needling sensation. This often deters patients with pain sensitivity, and generally requires local anesthesia during the procedure. Moreover, needle knife therapy demands a highly sterile environment during operation; improper handling may increase clinical risks of anesthesia and infection. In response to patient needs and

advancements in needle instrument design, a modified, miniature needle knife thinner than the traditional version with a smaller blade—emerged. Some refer to it as the "ultramicroneedle knife," while others call it the "micro needle knife"; such naming differences are largely based on personal convention. Regardless of the terminology, it refers to a specific type within the broader category of needle knives. In this study, we selected the Lejiu-brand micro needle knife, with a specification of 0.4 mm × 40 mm. Its needle shaft is slightly larger than that of a conventional acupuncture needle, and the blade is very small. The insertion method is similar to standard acupuncture. The needle is fine, the incision is minimal, the level of stimulation is low, and no anesthesia is required making it safer and more patient-friendly.

3. Conclusions

In summary, the treatment of plantar fasciitis using the micro-needle knife aims to release and dissect both the local pathological tissue and the fascial chains connected along the myofascial network. This reduces pathological tension and helps restore the normal stress-bearing function of the fascia and muscle system.

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