

How Do You Treat *Raynaud's Syndrome* in Your Practice?

AUGUSTE GABRIEL MAURICE RAYNAUD, MD (1834–1881 AD), a French physician, in his doctoral thesis (in 1862), described 25 cases (20 women and 5 men) of a disorder characterized by intermittent pallor and cyanosis of the extremities, which, in severe cases, could lead to gangrene.^{1–3} This disorder now bears his name (Raynaud's disease; and also called Raynaud's syndrome and Raynaud's phenomenon); is defined as vasospasms of parts of the extremities in response to cold or emotional stress; and causes reversible color changes, from white (arterial spasm), to blue (resultant cyanosis), and, finally, to red (reactive arteriolar dilation).

When the condition is idiopathic and/or familial, it is called primary Raynaud's disease (PRD). Raynaud's disease can also be associated with conditions such as systemic lupus erythematosus, scleroderma, cervical ribs causing arterial obstruction, trauma usually due to operating vibrating tools, or drugs such as β -blockers and ergotamine preparations, and then, the condition is termed secondary Raynaud's disease (SRD). In the CREST syndrome associated with scleroderma, the "R" stands for Raynaud's disease.

PRD is more of a nuisance and does not cause tissue destruction, while SRD can cause trophic changes. The Framingham study, based on 16 years of follow-up of a cohort of 4182 men and women, showed a prevalence of 9.6% in women, which was higher than in men (8.1%), and 81.4% of the cases were PRD.⁴ In most other studies, the prevalence in the general population was between 3% and 5%.⁵

In PRD, there is an increase in α -2 adrenergic sensitivity in the involved vessels, causing a vasoconstrictive response to cold temperatures and emotional stress. In SRD, the

underlying disease disrupts the endothelial function of the involved vessels, leading to vasoconstriction and ischemia.

Clinical features include numbness, coldness and intermittent color changes. While the extremities are affected more commonly, the disease can also affect the nipples, the nose, and even the knees. Precipitating causes include exposure to cold, emotional stress, and using vibrating tools. The symptoms are reversible by removing the causative factors. PRD affects mostly the middle 3 fingers, is symmetrical, and does not extend proximally to the meta-carpophalangeal joints. SRD can be asymmetrical and can produce trophic changes, including gangrene. Diagnosis is clinical. Acrocyanosis can produce a similar picture, but the changes are not reversible.

When the age of onset is <40, and there mild symmetrical attacks, with no tissue changes and no physical findings suggesting other causative disorders, this points to the primary form. When the age of onset is >30, with an asymmetrical unilateral presentation, severe pain, and trophic ischemic lesions, this often points to the secondary form. In that case, there will be a history and clinical features of the accompanying disorder. Laboratory investigations include erythrocyte sedimentation rate (ESR), anti-nuclear factor (ANF), C-reactive Protein (CRP), rheumatoid arthritis (RA factor), and extractable nuclear antibody to detect the causative disorder.

Modern biomedical treatments include:

- Calcium-channel blockers, such as nifedipine, amlodipine, felodipine, and isradipine
- Vasodilators, such as local nitroglycerin, losarten, sildenafilafil, floxetine, and prostaglandins
- Sympathectomy
- BOTOX[®] injection.

The results are not generally very satisfactory.

Raynaud's Disease in Chinese Medicine

Chinese Medicine attributes this condition to Stagnation of Qi and Blood in the channels due to invasion of Cold and Dampness. Alcohol and tobacco use can generate Internal Fire, which aggravates the Stagnation.

The points commonly recommended are: LI 11 and ST 36, the Homeostatic points; and LU 9, the Grand Point for blood vessels. These points are used in all cases. In addition, for the upper extremities, use HT 3, TB 5, PC 6, and the *Jiaji* Points from C-6 to T-3, as well as the *Baxie* Extra Points. For the lower extremities, use GB 34, SP 9, GB 39, ST 32,

Medical Acupuncture is pleased to continue this regular feature, *Clinical Pearls*, which we have found to be very useful for, and practical to, the readership, and very popular. All of us are confronted with clinical challenges, especially when dealing with therapeutic strategies. We hope this ongoing collection of *Clinical Pearls* will be easily accessible and ready to put into action for the benefit of our patients, and even ourselves. How often do we ask our colleagues: "How do you treat...?" This time, we posed the question: "How do you treat Raynaud's Syndrome in your practice?" Herein lie your contributions. We trust that our readership will continue to participate in this section by either asking the questions or supplying the "Pearls." If you have a "question" you would like to see answered, please send it to our managing editor, Yael Ben-Porat, at: yaelbenporat@me.com We encourage and welcome your input and participation. Please address your answers to "Pearls" to our managing editor, Yael Ben-Porat, at: yaelbenporat@me.com

SP 6, and the *Jiaji* Points, from LI to LI II, and the *Bafeng* Extra Points.

In addition to the above points that are usually recommended, the author has found that using the Yin Linking Vessel (Extra Meridian) boosts the effects of the treatment by promoting the circulation of Qi and Blood in the channels. This is done by using PC 6 right and SP 4 left, in that order in women (in men the sides are reversed), and KI 9 (where the channel enters the surface) bilaterally.

Treatment is given daily, and 16–20 treatments constitute a course. Subsequent monthly treatments will be needed for maintenance.

Auricular points used are the Sympathetic Autonomic Point, Endocrine Point, Adrenal Gland C, Adrenal Gland E, Heart C1, Heart C2, Heart E, Heat Point, Lesser Occipital Nerve, Liver, Spleen C, *Shenmen*, Thalamus Point, Occiput, and Sympathetic Chain. Select according to tenderness.

Chinese herbal formulas used are: *Si Ni Tang*, if the person has features of Cold syndrome with a slow pulse, a pale tongue, and a desire for hot drinks; and *Si Ni San*, if the person has signs of Stagnation such as irritability, muscular tension, and alternating calmness and agitation.

The Evidence for Acupuncture

Very few research reports are available on the efficacy of acupuncture for treating Raynaud's disease. Those that exist include:

- A controlled randomized prospective study involving 33 patients (17 treated patients and 16 controls) showed an overall reduction of attacks by 63% in the acupuncture group and 27% in the control group.⁶
- Auricular electroacupuncture (EA) reduced the frequency and severity of attacks in PRD but had no influence on skin perfusion and skin temperature.⁷
- Acupuncture and phototherapy were directly confirmed to increase the diameter and blood flow velocity in peripheral arterioles.⁸
- EA regulated the balance of endothelium-derived vasoconstrictors and vasodilators in rats.⁹

Illustrative Case

A 24-year-old female presented with a history of intermittent numbness, tingling, coldness, and color changes (pallor, blue, and red in that order), involving her index, middle, and ring fingers on both hands, for more than 4 years. Initially, her symptoms developed only in Winter months, but, later on, the symptoms occurred throughout the year, mostly on cold days. She was well otherwise. A clinical examination did not reveal any other abnormality. Laboratory investigations—including ESR, cRP, RA factor, anti-centromere antibody, and scleroderma (SCL 70) antibody tests—yielded negative results. However, her ANF was raised (> 1280).

Because of this raised ANF, 200 mg of hydroxychloroquine per day was prescribed and her Raynaud's disease was treated with acupuncture. The points used were:

- PC 6 right, SP 4 left and KI 9 bilaterally to open the Yin Linking Vessel
- LI 11, ST 36, the Homeostatic Points
- LU 9, the Grand Point for blood vessels
- HT 3, TB 5, and *Baxie* Extra Points
- LR 3 to promote the flow of Qi.

Treatment was given twice per week for 8 weeks and then once per month for 2 years. The patient's symptoms gradually reduced in severity and frequency; for complete disappearance of symptoms, it took 4 years of monthly treatments. At that point, the treatments were stopped with advice to return if there were any recurrences. That was 5 years ago; she has not been heard from since.

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IN PRACTICE, RAYNAUD'S DISEASE is frequently accompanied by such aggravating chief complaints as vertigo, headache, sinusitis, dyspepsia, or cardialgia. Treating Raynaud's disease with acupuncture and moxibustion is essential to prevent such diverse pathologies referred to in the ancient medical texts as *Jue* (afflux) or *Jue Ni* (counter-afflux): a pathologic flow of energy often originating from cold hands and feet.

The Ancient Medical Texts describe physiology and health as an equilibrium of Yin and Yang (hot and cold) maintained throughout the body, otherwise there is risk of pathology. The pathologic flow of Cold (Kidney Yin) into the hands and feet is due to a Deficiency of Kidney Yang, which can trigger an afflux of Kidney Yin (Cold) to the organs or extremities.

To treat Raynaud's disease, first tonify Kidney Yang and Yin to reestablish internal homeostasis. For Kidney Yang, needle/moxa GV 4 and CV 4. For Kidney Yin, tonify KI 3, the Source point (being careful not to cause bleeding); KI 7–KI 8, the Tonification point, touching the bone; and CV 4, the “Barrier of the Source” deeply; and apply moxa to BL 23 and BL 52, the *Shu* and outside *Shu* points. Once restored, the Kidney Yang must be distributed to warm the hands and feet. The ancient texts offer ways to distribute Kidney Yang, *Mingmen*, throughout the body, namely the *San Jiao* (TE). To help it perform this role, needle CV 17, CV 12, ST 25, CV 7, and C V5, and warm BL 22.

The technique Mobilize Ministerial Fire (MMF) directs Kidney Yang to the hands through the *San Jiao*'s intermediaries of the Heart and its messenger, the Pericardium, from CV 17 to PC 8, where the Kidney Yang polarizes to TE 1 and travels up the TE meridian internally throughout the body to induce metabolic and cellular activity. To MMF with moxa, have the patient sit upright with each hand resting on the opposite knee, head bent forward, and shoulders relaxed to open the thoracic vertebrae. With a moxa stick heat BL 13, BL 42, BL 14, BL 43, BL 15, and BL 44 to a pink color until the patient feels warmth travel down the arms all the way to the hands. The points should be given moxa until this sensation is felt. It is also helpful to heat GV 14, BL 11, GV 4, BL 23 and BL 52. This technique not only warms the hands, but also enables *Mingmen* distribution throughout the entire body to replenish energy and prevent certain afflux pathologies.

Another *Mingmen* distribution pathway is the Yin Curious meridians, which carry Fire, specifically the *Chongmai*. The *Chongmai* distributes the innate procreative Fire of Kidney Yang via its ascending branch to all the organs and bowels supporting their functions, and via its descending branch to warm the feet, facilitating polarization of the meridians and preventing many afflux pathologies. As with all Curious meridians, the *Chongmai* begins with the Kidneys. From the Kidneys it descends along the *Renmai* and *Dumai* through the uterus/prostate, then branching toward the pubic region merging with CV 4. From CV 4, the *Chongmai* travels to the point “Pubic Bone” (KI 11) superficially; from which the ascending branch rises, and the

descending branch continues through ST 30, ST 36, KI 4, and ST 42; ending at the *Jing Well* points LR 1 and KI 1.

To treat cold feet with the descending branch, needle SP 4 deeply to open the *Chongmai*; CV 4 deeply perpendicularly; KI 11 superficially perpendicularly; ST 30 from above to below superficially; ST 36, SP 6, KI4, and ST 42 over the pedal pulse proximal to the distal, “Antique LV 1” at the level of 3 hairs (and KI 1), and PC 6 to open the coupled Curious meridian.

As the hands relate to Heaven/Yang and the feet relate to Earth/Yin, a symptomatic treatment for cold hands and feet uses the *Jing River Shu* Antique points corresponding to Fire on the Yang meridians of the hands (SI 5, TE 6, and LI 5) with the *Source* points to augment SI 4, TE 4, and LI 4; and the *Ying Spring Shu* Antique points corresponding to Fire on the Yin meridians of the feet (LR2, SP2, KD2) with the *Source* points to augment LR 3, SP 3, and KI 3.

For all Blood-circulation conditions, open the 4 Barriers with LI 4 and LR 3. Circulate the energy that leads the Blood (*Ying Qi*) in the principal channels with LU 7 (in the direction of LI 4), LI 4 (perpendicularly), TE 5, SI 3, HT 7, and PC 6 for the hands; ST 36, SP 2, LR 2, KI 2 (the three leg Yin points can be replaced with SP 6), GB 41, and BL 60 for the feet.

The texts suggest cold hands may be due to Deficient *Wei Qi* circulating in the upper region and cold feet to Deficient *Wei Qi* in the lower region. There are many methods offered to build, strengthen, and circulate *Wei Qi*. Minimally, one can tonify the formation of *Wei* with CV 5 and CV 7, the *Lower Jiao* Mu points, acting on the Kidneys and Liver, the final stage in the formation of *Wei Qi*. When treating any arteriole problem—as the Blood relates to the Heart, and the Heart relates to the Mental—Calming the Mind and reducing stress is essential. Basic points include GV 20, HT 7, CV 17 and *YinTang*, and one can add *Shenmen* and Kidney Yin in the ear. Consider SP 10 and BL 17 when treating the Blood, and tonify the SP/ST system, as the *Ying* and Blood correspond to acquired energy.

Choosing appropriate points from the above tools, according to the energetic state of the patient, a needle duration of 20–30 minutes, with lifestyle recommendations to keep the extremities warm, will produce gradual results.

As Raynaud's disease is most often a chronic Empty–Cold condition, an initial frequency of treatments 2–3 times per week for at least 12–15 sessions until lasting results are produced, then reducing to weekly treatments for a total of 15–20 sessions is ideal, basing each treatment on how the patient presents at the time. For example, if symptoms are not present, tonifying Kidney Yin and Yang, Calming the Mind, and circulating the *Ying* may be the focus for prevention; whereas, when symptoms are present, the Fire, Source, and circulation points—and distribution of *Mingmen* to the extremities with MMF and *Chongmai* descending branch—can produce immediate relief. Observation (tongue, complexion, morphotype, and extremities) and Palpation (radial pulses, extremities, and pedal pulse) contribute to deciding

the focus of each treatment. For example, when the pedal pulse is absent or deficient, utilizing the *Chongmai* descending branch is essential; when a pale tongue and complexion are observed, building the energy/Blood and helping it circulate are key; and with a rapid pulse and a red crevassed tongue, Calming the Mind, circulating the Ying, and treating the Blood will be the priority.

Less-chronic cases of cold limbs can resolve with 1–6 treatments, using the Fire and Source points, circulating *Ying*, distributing *Mingmen*, and Calming the Mind. In my experience, most people present with more-aggravating afflux pathologies, so treatments alternate between resolving afflux when present and treating the cause (cold hands and feet) for prevention. Despite the limited number of patients presenting specifically for Raynaud's disease, the texts teach that the conscientious energetic doctor treats cold hands and feet daily in practice to prevent all sorts of pathologies.

Note that the above article is derived from 19 years of following Tran Viet Dzung, MD's teachings synthesized from the ancient medical texts. Although intended to be thorough, it is not a complete representation of this topic due to the scope of this contribution.

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RAYNAUD'S PHENOMENON refers to the reversible spasm of peripheral arteries in response to cold or stress.¹ The condition causes pallor, and later redness or cyanosis, and is accompanied by pain, paresthesia, and, rarely, ulceration of the digits.² Raynaud's phenomenon has two clinical varieties: the primary form has no underlying disease; while the secondary form exists with an underlying autoimmune disorder. The prevalence of Raynaud's phenomenon varies greatly with genders, countries, and occupations.³

Acupuncture is a traditional system of medicine in which fine needles are inserted at specific points along the meridians (energy channels) to treat many disorders.⁴ It works on the principle of balancing the complementary extremes—Yin (the passive, feminine, and sustaining principle of the Universe) and Yang (the active, masculine, and creative principle of Universe)—and regulating the flow of Qi (vital energy).

CASE

A 48-year-old female, residing in a northern state of India, presented with a complaint of pain and stiffness in both

TABLE 1. SELECTED POINTS NEEDED FOR MANAGING RAYNAUD'S PHENOMENA WITH ACUPUNCTURE

Serial #	Acupuncture point given	Needling
1	GV 20	0.2 <i>cun</i> Oblique
2	LR 3	1 <i>tsun</i> Perpendicular
3	LI 4	0.5 <i>tsun</i> Slightly oblique
4	SI 3	0.3 <i>tsun</i> Perpendicular
5	LU 9	0.3 <i>tsun</i> Oblique
6	ST 36	0.5 <i>tsun</i> Perpendicular
7	UB 15	0.5 <i>tsun</i> Perpendicular
8	PC 8	0.3 <i>tsun</i> Oblique

of her hands from the past six months, and symptoms were more lateralized to her right hand. Her pain worsened in the early mornings and when she would put food in and out of her refrigerator. Pallor at the finger tips was noticed whenever she was exposed to the cold climate.

Complete blood count, erythrocyte sedimentation rate, and antinuclear antibody laboratory tests were performed to rule out any other underlying disorders. Infrared thermal imaging showed colder areas distally in both hands. In the context of Traditional Chinese Medicine, this condition is referred as Cold syndrome arising from dysfunction of the Liver, with Stasis of Qi and Blood. This condition also indicates that there is a Yang Deficiency.

Thus, this patient's therapy was aimed at regulating her flow of Qi, and improving the energy in her Liver meridian to balance the Yin and Yang. The points chosen to treat this case were GV 20, LR 3, LI 4, SI 3, LU 9, ST 36, UB 15, and PC 8. The needling details are shown in Table 1.⁵ A De Qi sensation was achieved following needling. Each acupuncture session was for 30 minutes, 6 times per week, for 3 weeks.

Thermal images were taken before and after the 3 weeks of acupuncture treatment, and average temperatures at her

TABLE 2. SUBJECTIVE REDUCTIONS IN SYMPTOMS GRADED ON A 10-POINT VAS

Symptom	VAS score (before therapy)	VAS score (after therapy)
Pain in the right hand	9	4
Pain in the left hand	7	2
Stiffness in right hand	6	2
Stiffness in left hand	5	2
Vasospasm on exposure to cold (right hand)	9	3
Vasospasm on exposure to cold (left hand)	9	3
Temperature at tips of right hand	26.4°C	30.2°C
Temperature at tips of left hand	27.2°C	31.7°C

VAS, visual analogue scale.

fingertips were noted. Her basal temperatures increased after the therapy, as shown in Table 2. Her symptoms were also assessed on a visual analogue scale before the treatment was started and after the last acupuncture session. Her symptom score had reduced substantially after 3 weeks of intervention, as shown in Table 2.

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PRI-MARY RAYNAUD'S DISEASE (PRD) is an idiopathic disorder triggered by severe cold or emotional disturbance. PRD is characterized by severe, intermittent, reversible vasospastic episodes affecting the arteries involved with the distal digits and toes; it rarely occurs in the nose, ears and penis. PRD can cause extremity paresthesia due to sensory-nerve ischemia.^{1,2} Vasospastic attacks first lead to ischemic blanching (whitening) of all of the fingers, followed by cyanosis (blue coloration) due to desaturation of residual blood and reperfusion hyperemia (red coloration).^{3–5} This trio of white, blue, and red coloration is known as the *tricolor phenomenon of Raynaud's disease*.

PRD is typically seen women ages 20–30, affects females twice as much as males, and has an annual incidence of

0.25%, with a prevalence up to 4.85% in the general population, which varies geographically around the world.^{5,6} Important epidemiologic trend and risk factors for PRD include a positive family history, migraine attacks, female gender, young age, smoking, and working with vibrating machines.^{6,7}

The diagnostic criteria for PRD include typical symmetrical reversible symptoms of digital vasospasm, an absence of peripheral vascular disease, and tissue necrosis or digital ulceration or gangrene. The patient has normal nail-fold capillaries, normal capillaroscopy results, negative antinuclear antibody test results, and a normal sedimentation rate that rules out most systemic autoimmune and connective tissue conditions often comorbid with secondary Raynaud's disease (SRD).⁸

Conversely, SRD is caused primarily by several underlying genetic and autoimmune connective-tissue disorders and anticancer drugs.^{1,9} SRD often occurs after age 30 and can be comorbid with multiple systemic diseases, with additional asymmetrical, severe manifestations of pain, specific autoantibodies, ulcerations of distal digits and toes due to ischemia, microvascular disease of nail capillaries, and various complications including disability and amputations.¹

However, both primary and secondary Raynaud's disease do share some clinico-diagnostic features, and the prevalence of SRD is much higher (up to 90%) among patients with the aforementioned comorbid systemic conditions.

The pathophysiology of Raynaud's disease is not well-understood despite extensive research.^{1,3,4,9,10} From the perspective of traditional Chinese philosophy, Qi energy and Blood Stagnation are important dynamic factors underlying Raynaud's disease. The modern biomedical key factors influencing the disease's pathophysiologic mechanisms are endothelin-1 and endothelial dysfunction linked with decreased nitric-oxide synthesis, resulting in an imbalance of vasoconstriction and vasodilation.^{1,3,9,10} In addition, platelet activation, fibrinolysis, and oxidative stress also contribute to the pathophysiology of Raynaud's disease.¹¹

Diagnosis of Raynaud's disease is classically based on a comprehensive history given by a patient that includes a series of tricolor phases and pain in the distal digits and toes triggered by emotional stress or severe cold.⁴ Further support and differentiation may come both from photographs taken by the patient, given that vasospastic episodes are rarely observed in the clinical setting.¹⁰ Advanced diagnostic methods include magnetic resonance imaging, nail-fold capillaroscopy, and laboratory tests.^{4,9,10} The overall prognosis of patients with PRD is relatively better than for patients with SRD because of the multiple complications connected with the latter condition, including serious cardiothoracic diseases.¹⁰ Of note, a patient-centered approach that uses lifestyle modifications and complementary and integrative therapies—including conventional interventions—is quite effective for patients with either PRD or SRD.^{1,3–5,9,10–12}

Medical Acupuncture

Medical acupuncture is a Chinese holistic therapy that uses numerous standard acupuncture points in to address Raynaud's disease¹³; the LI 4 and SI 3 acupoints are used preferentially for patients with idiopathic Raynaud's disease. Acupuncture's mechanism of action and effects include reduction of sympathetic tone and release of vasoactive mediators, especially calcitonin-gene-related peptide and substance P, as these have strong vasodilation properties.^{1,3-5,9,10,12,13} Overall, traditional Chinese acupuncture tends to reduce the frequency of vasospastic attacks, including their severity and paresthesia effects, in patients with PRD through Qi energy mobilizing the blood in the body organs. Acupuncture needs to be performed for a minimum of 2 months to produce a long-term therapeutic effect. Evidently, the effectiveness of medical acupuncture is comparable to that described for calcium-channel blockers, especially nifedipine. In addition, acupuncture is not linked with any side-effects.⁵ I illustrate the efficacy of medical acupuncture in Raynaud's phenomenon further with 2 clinical cases managed in different settings.

Case 1

A 32-year-old woman was diagnosed with PRD of short duration based on a comprehensive history of the bilateral tricolor phenomenon triggered by psychologic stress that was caused by violent arguments with her husband. A physical systemic evaluation revealed that she had no other diseases, and pertinent laboratory tests yielded normal results. This patient reported using no treatment because the intensity of her pain was bearable. After reading literature on Google.com about Raynaud's disease, she found literature on medical acupuncture that stated it was a safe and effective

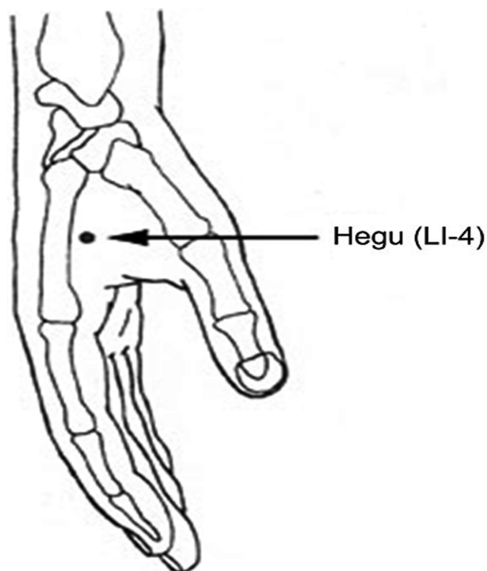


FIG. 1. The LI 4 (*Hegu*) point. Between metacarpals I and II.

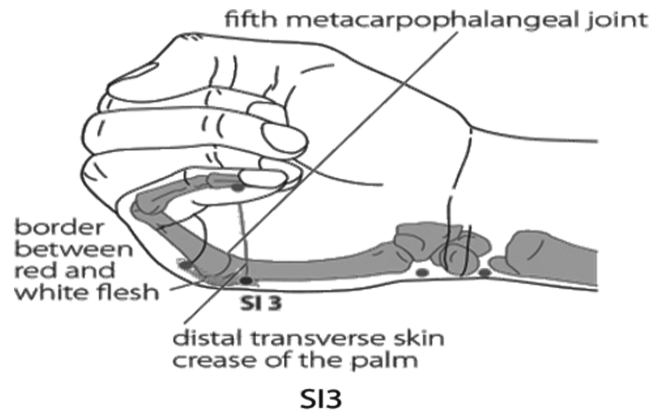


FIG. 2. The SI 3 (*Houxi*) point.

therapy, and, therefore, she opted for it. The procedure for acupuncture was explained to her, including details of using standard stainless-steel needles and relevant safety issues. She voluntarily gave oral consent for this treatment.

The literature suggests that *Hegu* (LI 4) and *Houxi* (SI 3) are the two most frequently used acupuncture points for treating functional Raynaud's phenomenon (Fig. 1 and Fig. 2); thus, these points were chosen for treatment.^{3,14} The acupoint sites were sterilized with ethanol, and aseptic stainless needles (0.25 × 40 mm) were inserted 1.5–2.0 cm into these points and manipulated for 10 seconds until a De Qi sensation (numbness) was achieved. The needles then remained untouched until, after 10 minutes, when the needles were removed without manipulation. This technique was repeated twice weekly for 6 weeks in 12 sessions, with each one for 10–15 minutes based on the patient's clinical improvements. These included relief of her pain severity, frequency of attacks, joint stiffness, and tricolor episodes in her fingers and toes. On a visual analogue scale of 0–10 points, she reported reduction of all of her symptoms by indicating point 0-1, which means *nearly complete recovery*. This case substantiated the results of acupuncture therapy that was used effectively in another patient with Raynaud's phenomenon.¹⁵

Conclusions

Medical acupuncture is effective for addressing PRD of short duration and of mild-to-moderate severity. Evidently, acupuncture is relatively safe and tolerable, and should be considered as an alternative treatment to manage PRD. In addition to acupuncture therapy, patients with chronic refractory Raynaud's disease or SRD may require integrative therapies, including lifestyle modifications, conventional medications, and surgical interventions.

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