Visualization of the Meridian Courses by the Mineral Pulse Light Stimuli

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Research

Keywords: acupuncture meridian, infrared thermography, meridian-like high thermal line, mineral pulse light stimuli

DOI: https://doi.org/10.21203/rs.3.rs-52501/v1

Abstract

Background; The infrared thermographic technology was used to visualize the meridian course, "energetic paths" at the human body surface from 1980s. However, the study failed as acupuncture, moxa and Laser needle stimulus.

Objectives; The purpose of this study is to visualize the meridian course by mineral pulse light stimulator, new acupoints stimulus method.

Methods; Any acupoints at arms (PC6) and legs (SP6, SP4, KI3) were stimulated by the mineral pulse light stimulator during 15 ~ 30 minutes.

Results; When any acupoints at arms and legs were stimulated by the mineral pulse light stimulator, the meridian-like high thermal lines were induced along the connective classic meridians after 3 minutes usually. The rising temperature is average 1.85 ± 0.52℃ ($P < 0.001$). Inducing rate of MLHTL is 80.3% (male 80.0%, female 3.0%) and reappearance rate 100%.

Conclusions; The meridian-like high thermal lines are induced along the meridian course at the classic meridian figure, so that the meridians course as "energetic paths", were visualized by mineral pulse light stimulator, new acupoints stimulus method first on the world. Everyone can induce MLHTL by MPL stimulator (Version 1.0), so that can see it anytime from now on.

1. Introduction

The acupuncture meridian is the channel through which Qi & Blood flow by the classic meridian theory, and acupuncture is having many thousands year history for treating various illnesses [1,2,3]. However, anyone has not saw meridians course in the classic meridians figure at human body surface until now. Attempts to visualize the course of "energetic paths" in acupuncture using physical-technical methods, are described by different authors. However, the results from investigations available up until now are controversial and generally accepted proof for meridians cannot be considered as being given [4,5,6]. Especially the infrared thermographic technology was used to visualize the acupuncture meridian from 1980s. The criteria of the visualization are to induce the meridian-like high thermal lines along the classic target meridians course, especially at arm and leg when the acupoints is stimulated by acupuncture, moxa and various stimuli [4~12]. However, the study failed by acupuncture, moxa and Laser needle stimuli [13,14] (Figure 1).

2. Material And Methods

2.1. Thermography

Two infrared camera, FLIR C2 and FUJISTU 1200A were used for measurement.

The spectral range of this camera lies between 7.5 and 13μm and the temperature range lies between -40°C and 800°C. NETD is 0.1°C.

2.2. Mineral pulse light stimulator (MPLS) (Figure 2)

Light source is LED of 360~760nm range and the mineral film as light filter is adhesive at front LED. The pulse (on/off) light frequency is same as the heart beat (average 1.25Hz) and waveform is the typical ECG wave. The element of the mineral film is the solid extract of Kumkangyakdol (Version 1.0) [15].

2.3. Stimulation method

Any acupoints at arms (PC6) and legs (SP6, SP4, KI3, etc.) were stimulated by the mineral pulse light stimulator during 15~30 minutes. Mineral pulse light stimulator is fixed at acupoints by adhesive tape (Fig. 2). Room temperature is 23~25°C and moisture is 40~60%.

2.3. Volunteers

A total of 70 patients (male 62, female 8) and 15 healthy volunteers (male 12, female 3) were examined.

3. Results And Discussions

When any acupoints at arms and legs were stimulated by the mineral pulse light stimulator, the meridian-like high thermal lines were induced along the connective classic meridians after 3 minutes usually. The rising temperature is average 1.85±0.52℃ (P<0.001). Figure 3 shows SP meridian-like high thermal line (MLHTL) inducing that is coincided completely with SP meridians course in classic meridians figure at right leg.

Figure 4 shows SP, MLHTL inducing status before and after MPL stimuli.

Figure 5 shows PC MLHTL course induced as red- high thermal line along PC meridians after 3 minutes, when PC6 acupoint were stimulated by MPL stimulator.

Figure 6 shows meridian-like high thermal lines induced at each other volunteers, when SP6 and PC6 acupoints is stimulated.

Figure 7 shows SP and KI meridian-like high thermal lines induced simultaneously, when SP6 acupoints is stimulated.

Figure 8 shows the reproducing rate of MHTL inducing.

Table 1 shows the inducing rate according to each MLHTL.

MLHTL	Inducing rate (%)
SP. MLHTL	42.3
KI. MLHTL	23.7
PC. MLHTL	21.4
HT. MLHTL	10.5
LR. MLHTL	2.1

Table 1. Inducing rate according to each MLHTL. Inducing rate of MLHTL was highest at SP. MLHTL and was most low at LR. MLHTL (in Korean). And yin MLHTLs were only induced, and yang MLHTL was not induced by MPL stimuli.

Figure 9 shows temperature difference between MLHTL and outside.

When any points of human body are stimulated by any stimuli source, that the temperature rise linear above 2.0°C, is new human body physiology phenomenon. And also, the tissue that the temperature can rise linear above 1°C physiologically in arms and legs of human body, is only veins activated after exercise, or when fevering [15] (Figure 10-b).

The tissue that the temperature can rise linear above 1°C physiologically in arms and legs of human, is only veins activated after exercise, or when fevering. However, the meridian-like high thermal line (MLHTL) induced along the classic meridians course, is different completely with vein high thermal lines. Thus meridian-like high thermal line is the new human body physiological phenomenon that the modern medicine has never known.

4. Conclusions

When any points of human body are stimulated any mineral pulse light, that the temperature rise linear above 2.0 °C is new human body physiology phenomenon. This appearance of new human physiology phenomenon is one of objective evidence that new system flowing vital energy in the human body exist. When any acupoints were stimulated by the mineral pulse light stimulator, the meridian-like high thermal lines were induced along the connective classic meridians after 3 minutes usually. The rising temperature was average 1.85 ± 0.52 °C ($P < 0.001$).

As a result, the meridian-like high thermal lines are induced along the meridian course at the classic meridian figure, so that the meridians course as "energetic paths", were visualized by mineral pulse light stimulator, new acupoints stimulus method first on the world. Everyone can induce MLHTL by MPL stimulator (Version 1.0), so that can see it anytime from now on. Future, we all must find meridian's substance, the basis of MLHTL together. So, we disclosed the parameters of MPL stimulator (Version 1).

Abbreviations

MLHTL; meridian-like high thermal line, MPL; mineral pulse light, SP; spleen, SP MLHTL; spleen meridian-like high thermal line, LI; large intestine, PC; pericardium, KI; kidney

Declarations

Ethics

The present study has been ethically reviewed and approved by the Pyongnamdo Regional Ethics Review Committee (Ethical Approval Reference Number: 2015 KP-23).

A statement on participant consent

This clinical trial was performed by participant's written consent.

Consent for publication

The article has been reviewed and approved by the Pyongnamdo Regional Medical Publication Review Committee.

Availability of data and materials

All data in this study are included in this publication.

Competing interests

The authors have no competing interests.

Funding

Not applicable

Author's contributions

All authors equally contributed to the concept for this manuscript, retrieval and interpretation of information, draft and finalization of the paper.

Acknowledgements

The author would like to thank Mr. Paek and Mr. Changmo Lim for his support in this study.

Conflict of interest

The authors confirm that there is no conflict of interest.

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Figures

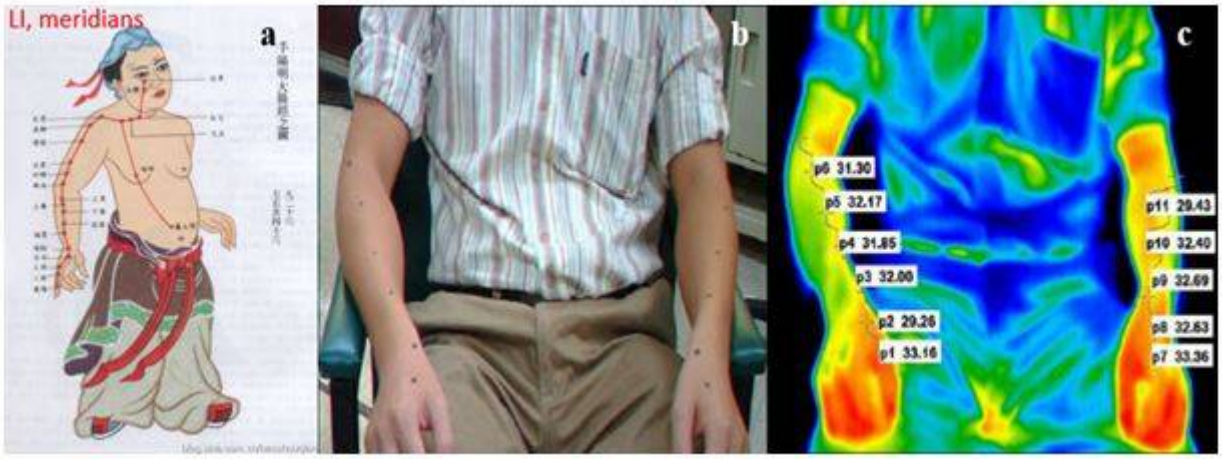

Figure 1

The stimulus method and pulse (on/off) light function of MPL stimulator. The mineral pulse light stimuli therapy is non-invasive.

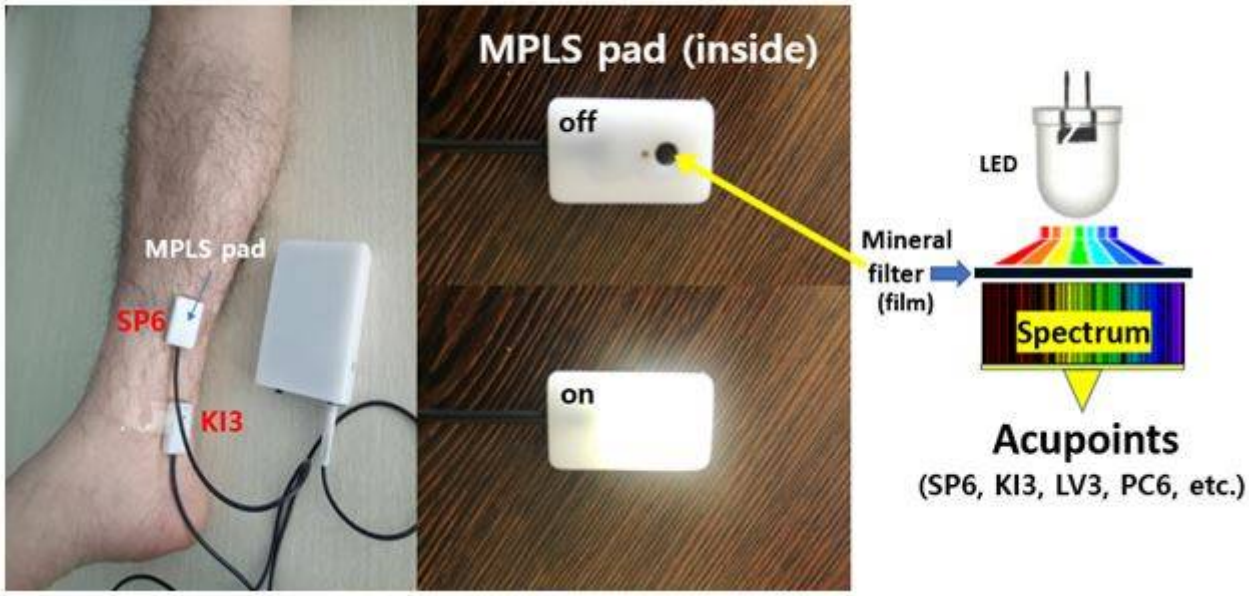

Figure 2

The stimulus method and pulse (on/off) light function of MPL stimulator. The mineral pulse light stimuli therapy is non-invasive.

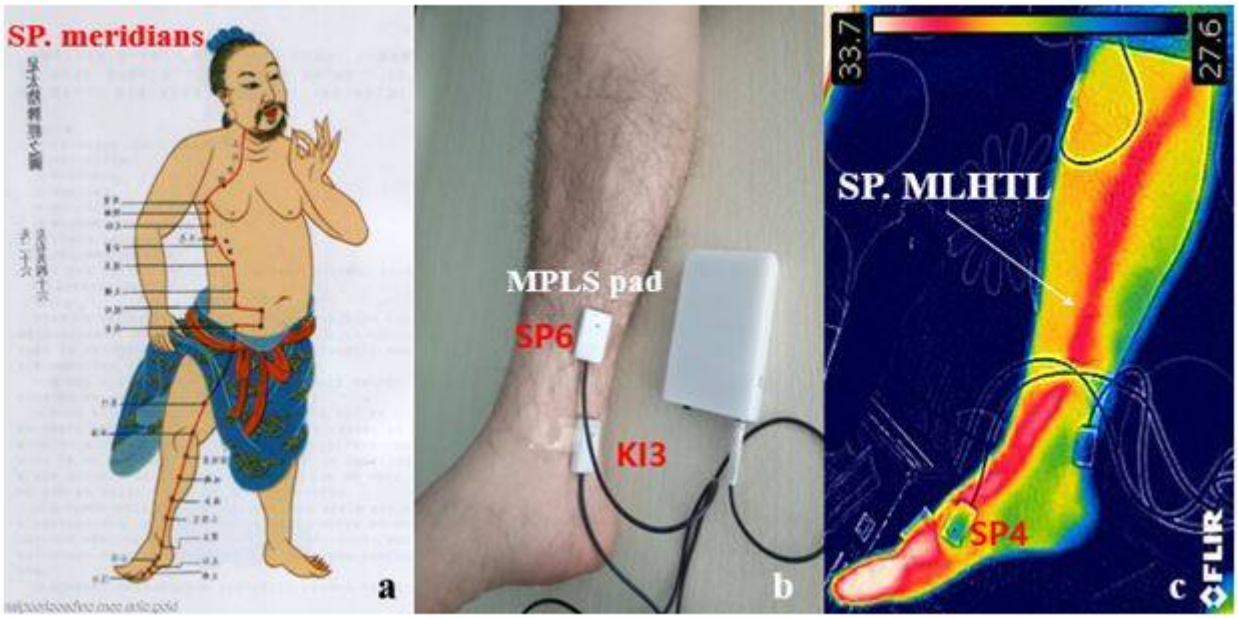

Figure 3

Visualization criteria: MLHTL must be induced as red- high thermal line (a part or all the course) at figure (c), along red- line course at the figure (a). As like seeing at figure (c), SP MLHTL was induced as red- high thermal line along SP meridians after 3 minutes(c), when SP4 acupoint were stimulated by the mineral pulse light (MPL) stimulator. The inducing course of SP MLHTL coincided completely with SP meridian course (a part) in the classic meridian figure (a). The rising temperature was 2.1°C. As a result, SP MLHTL was achieved on the meridian's visualization criteria first on the world.

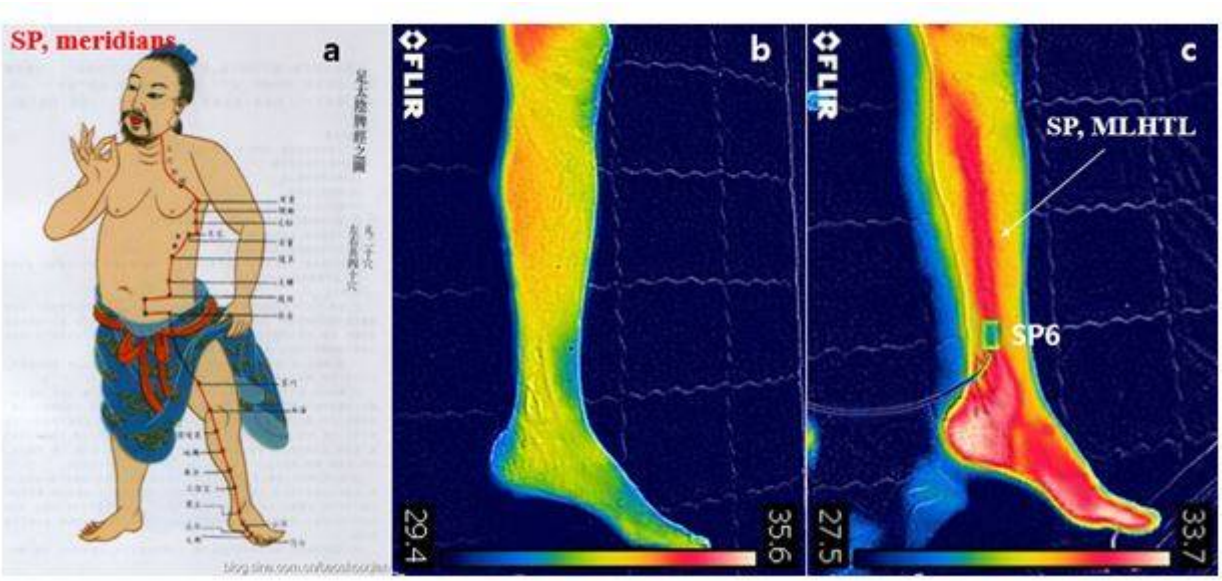

Figure 4

SP MLHTL was induced as red- high thermal line along SP meridians after 3 minutes(c), when SP6 acupoint were stimulated by the mineral pulse light (MPL) stimulator. The inducing course of SP MLHTL

coincide completely with SP meridian course (a part) in the classic meridian figure (a). The rising temperature was 1.8°C.

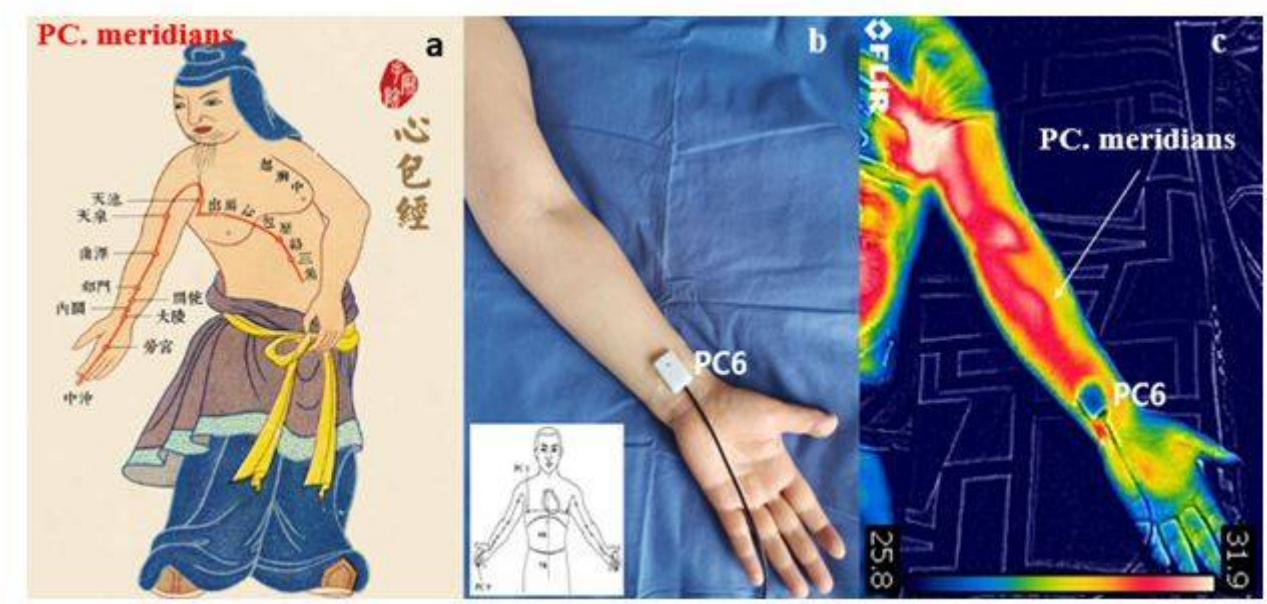

Figure 5

PC MLHTL was induced as red- high thermal line along PC meridians after 3 minutes(c), when PC6 acupoint were stimulated by the mineral pulse light (MPL) stimulator. The inducing course of PC MLHTL coincide completely with PC meridian course (a part) in the classic meridian figure (a). The rising temperature was 2.1°C.

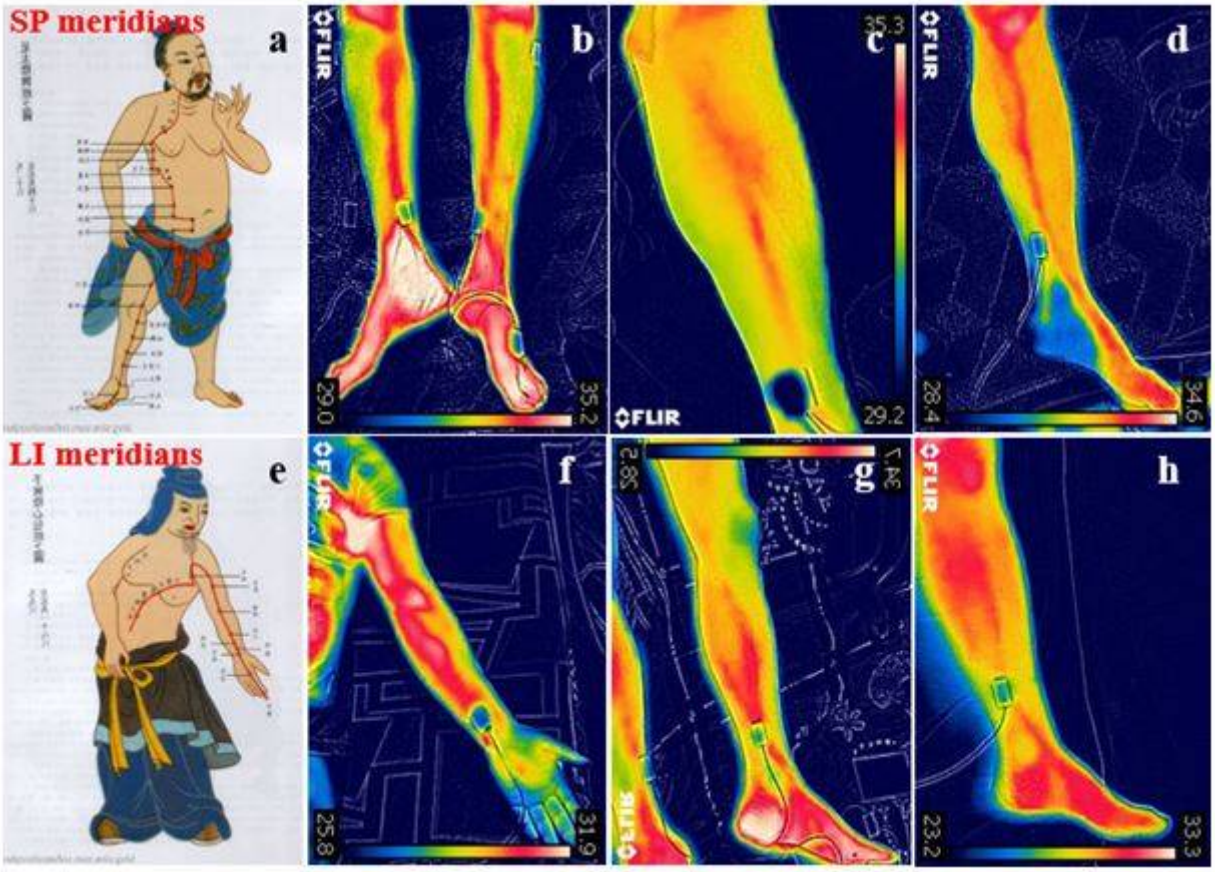

Figure 6

SP. MLHTL was induced at each other volunteers as red line along SP meridians at both legs after 3 minutes(c), when SP6 acupoint were stimulated by the mineral pulse light stimulator. The rising temperature was 1.8°C (b~ d). SP and KI. MLHTL was induced simultaneously as red line along SP and KI meridians after 3 minutes, when SP6 acupoint were stimulated by the mineral pulse light stimulator (g, h). And PC. MLHTL was induced as red line along PC meridians after 3 minutes(f), when PC6. acupoint were stimulated by the mineral pulse light stimulator. The rising temperature was 2.1°C. Figure 6e shows the classic PC meridians figure.

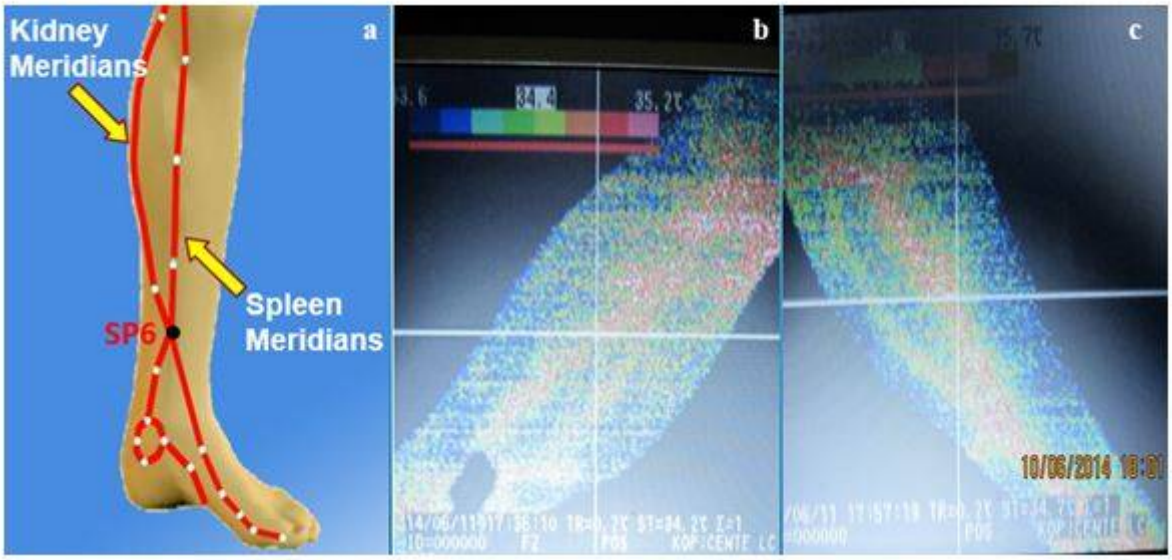

Figure 7

SP and KI. MLHTL was induced simultaneously at both legs of one man as red line along SP and KI meridians after 3 minutes (b, c), when SP6 acupoint were stimulated by the mineral pulse light stimulator. SP and KI. MLHTL course induced simultaneously at both legs of one patient, was same completely with SP and KI meridians in classic meridians figure. Rising temperature; KI MLHTL ~1.4°C, SP MLHTL ~2.1°C. Figure 7-a shows the classic SP and KI meridians figure model.

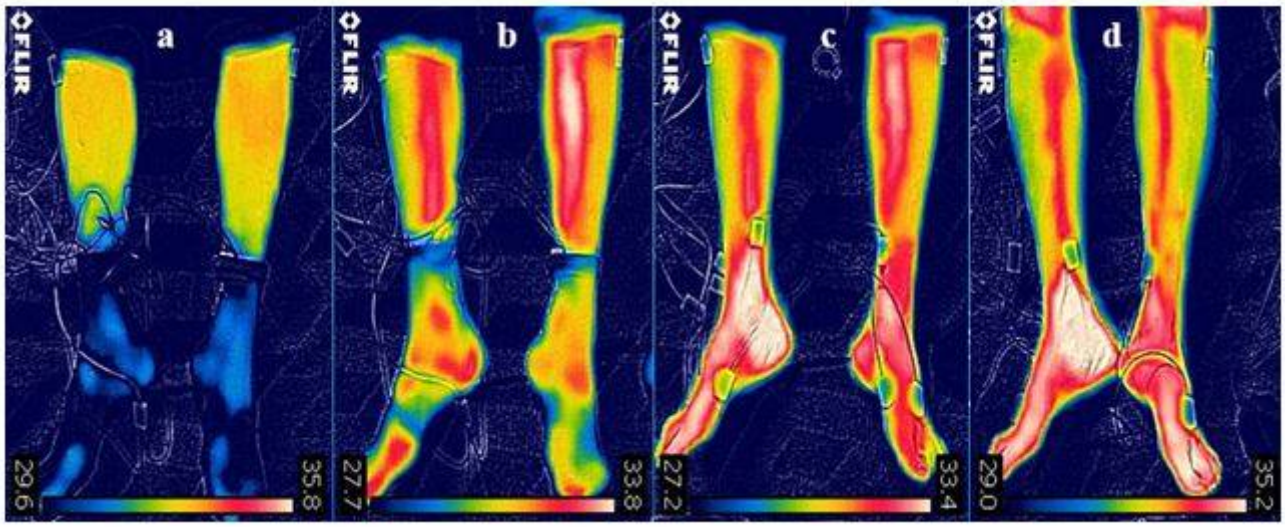

Figure 8

Reproducing rate of MHTL induced in a volunteer was 100%, and the inducing shape was same always (10~20~ times) and the inducing temperature was different only (b; 24°C, c; 21°C, d; 14 °C). This result was same in every patients and volunteers. Inducing delay time was maximum 1.5 hours. Inducing rate of MLHTL was 80.3% (male 80.0%, female 3.0%) (P <0.01) and reproducing rate was 100% (P <0.01).

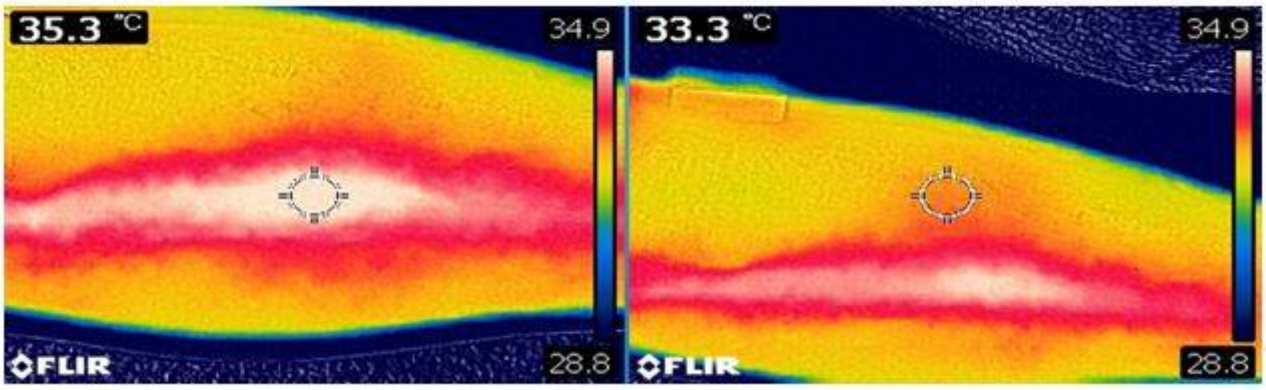

Figure 9

The temperature difference between MLHTL and outside is 2.0°C. The width of MLHTL at Figure 9 is about 3cm, but the high thermal line is started first appearing threadlike from the center of MLHTL, and next gradually the heat rising, broaden. The central line temperature of MLHTL is highest (central white part).

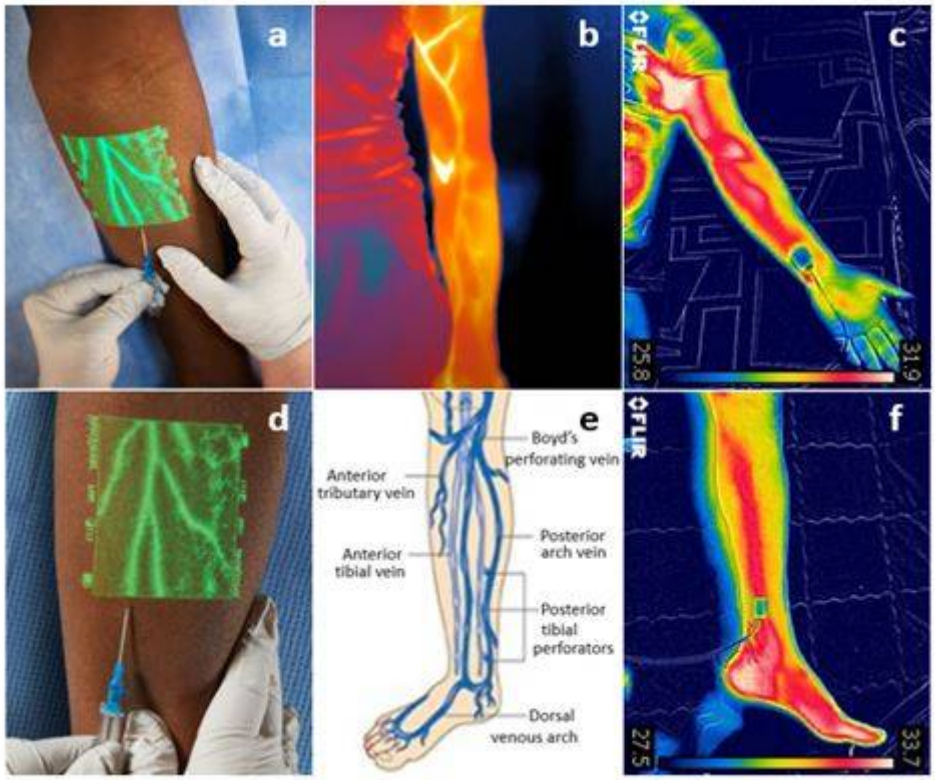

Figure 10

Difference of the vein high thermal line (b) and meridian-like high thermal line (c, f), and veins appearance by the vein viewer (a, d). Vein high thermal lines is thin (b), but MLHTL is thick (c, f), and the thickness of vein high thermal lines is equal along the circulatory course, but MLHTL is not same. And vein high thermal lines have branches along the circulatory course (b), but MLHTL have no branches (c, f). Rising

temperature of vein high thermal lines is nearly same along the circulatory course (b), but MLHTL is not same (c, f).