



THE CORRELATION BETWEEN MERIDIANS AND FACE DIAGNOSIS- TWO CASE REPORTS

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Submitted on- 30-06-24

Accepted on-23-07-24

ABSTRACT:

This study aimed to investigate the correlation between facial diagnosis and the twelve meridians in traditional Chinese medicine (TCM) for potential clinical diagnostic applications. Using a stationary camera, facial images were captured and compiled into a comprehensive database, along with participants' medical histories obtained through questionnaires. The results indicated that irregular patterns on participants' faces corresponded to specific meridians, revealing potential organ-related conditions. These findings suggest a correlation between facial reflex zones and the twelve meridians, highlighting the diagnostic potential of this method for identifying early signs of clinical conditions.

1. INTRODUCTION

Western medicine is commonly regarded as the mainstream approach in clinical diagnosis and therapeutic treatment, primarily focusing on symptomatic treatment while often disregarding holistic approaches. In contrast, Traditional Chinese Medicine (TCM) offers a comprehensive assessment of patients' health through four primary methods: inspection, auscultation and olfaction, inquiry, and palpation [1]. These methods require more evidence-based studies to verify their accuracy and reproducibility. Among these, inspection, also known as facial diagnosis, can be easily developed and enhanced using artificial intelligence (AI).

Recently, technologies applied to the medical field have advanced rapidly, particularly in medical imaging, such as computed tomography (CT) and magnetic resonance imaging, with these images being processed by AI [2-3]. The diagnostic accuracy of AI-assisted CT imaging in COVID-19 has been systematically reviewed and meta-analyzed [2]. Additionally, the application of facial recognition technology in disease diagnosis has been reviewed [4]. Numerous algorithms have been developed to analyze conditions such as Down syndrome [5] and Cushing's syndrome [6].

TCM posits the existence of specific reflex zones on the face corresponding to the body's internal organs. Therefore, by examining facial features such as color variations, wrinkle patterns, and spot sizes, the health conditions

of various internal organs can be assessed. The term "Physiognomy" has been documented in Chinese medical literature, specifically in the *Huangdineijing* [7]. Recently, a complex-viscera diagram in TCM using fuzzy c-means algorithm clustering from skin color was proposed [8]. Additionally, deep learning-based facial image analysis technologies applied in disease detection and prognosis have been systematically reviewed [9]. Deep transfer learning methods from face recognition have also been proposed and applied in the diagnosis of diseases such as beta-thalassemia, hyperthyroidism, Down syndrome, and leprosy [10].

Currently, there is limited research on using meridians to compare and evaluate reflex zones of organs on the face. TCM offers a unique perspective by recognizing the interconnectedness of meridians and the body, a concept that has been gradually gaining attention [11]. The relationship between the values of the twelve meridians and facial diagnosis has not yet been proposed. To further investigate the importance of integrating Physiognomy and TCM meridians, this study utilizes the analysis of reflex zones on the face corresponding to the twelve meridians in the human body. The proposed method could be a step towards next-generation 'deep' medicine, providing the right treatment to the right patient at the right time [12].

2. MATERIAL AND METHODS

First, a stationary camera was set up to capture appropriate facial images, including both frontal and lateral views. A comprehensive database of these facial images was then created, along with the collection of participants' medical histories through questionnaires. Second, the subjects were measured using the Meridian Energy Analysis Device (ME-100, manufactured by Medpex Inc., Taiwan). The twelve meridians analyzed include those of the lung, pericardium, heart, small intestine, triple energizer, large intestine, spleen, liver, kidney, bladder, gallbladder, and stomach. According to the device's instructions, a current of less than 50 μA indicated a “deficiency” syndrome for the corresponding

meridian, while a current greater than 90 μA indicated an “excess” syndrome. Third, irregular color patches, patterns, and deficiencies on the participants' faces were marked. Based on the Yellow Emperor's Inner Classic (Huangdineijing), Lingshu 49, five colors on the face can reveal the condition of specific organs. The five colors—green, red, yellow, white, and black—correspond to the liver, heart, spleen, lung, and kidney, respectively. Fourth, specific areas of the face were compared with the expressions of the twelve meridians for further analysis. This approach aimed to correlate facial features with meridian imbalances, providing insights into potential organ-related conditions.

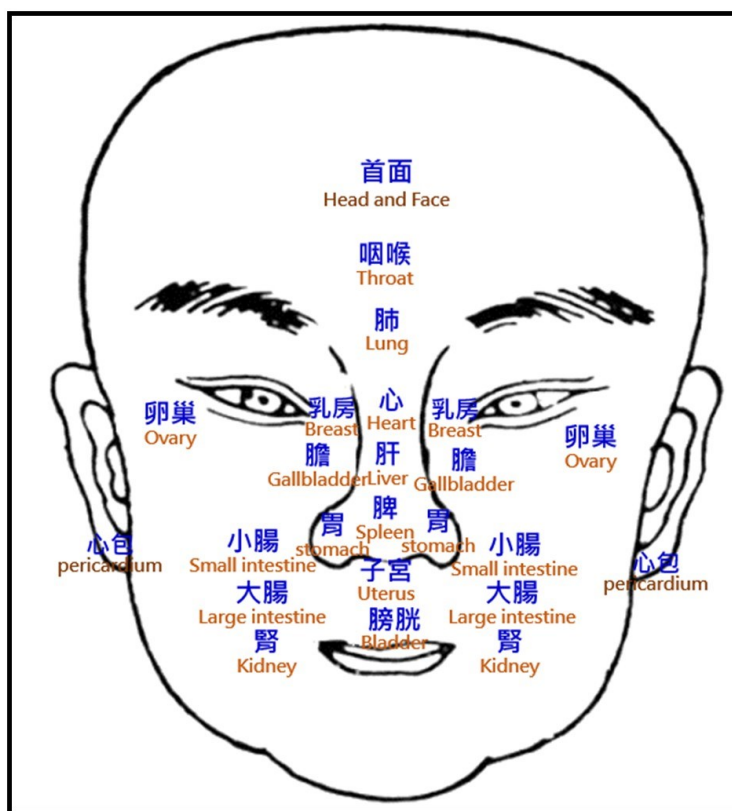


Figure 1. The reflex zones of the face corresponding to the organ based on Huangdineijing.

In this study, two male participants were included. Case 1 is a 56-year-old male with a

history of chronic conditions, including autoimmune disease, cardiovascular disease,

diabetes, heart valve regurgitation, and prior gallbladder removal surgery. Case 2 is a 57-year-old male who frequently stays up late and has experienced tinnitus for over 30 years. He also has a history of Coronavirus disease infection in 2019, gallstone removal surgery (less than 1 centimeter), and prior hemorrhoid surgery. The study evaluated the relationship between the reflex zones of the organs on the face and the meridians in these two cases.

3. RESULTS AND DISCUSSION

According to TCM, the current health status of human organs can be assessed by examining the relationship between the facial skin surface and the reflex zones of the organs on the face. In Figure 2(a), irregular surfaces at the tip of the nose and a protrusion on the right side of the nasal bridge are observed in Case 1, marked by yellow squares. Referring to the reflex zones of

the face in Figure 1, the tip of the nose corresponds to the spleen, while the lateral side of the nasal bridge corresponds to the gallbladder. Moreover, the health questionnaire for Case 1 reveals a history of gallbladder removal surgery. A lower energy level in both the spleen and gallbladder meridians was measured, marked by blue circles in Figure 2(b). Additionally, a history of chronic conditions, including autoimmune disease, was recorded in the questionnaire, indicating a potential correlation with the triple energizer meridian in TCM. Notably, a higher energy level in the triple energizer meridian is shown in Figure 2(b). Conversely, a slight increase in energy levels was observed in the heart and pericardium meridians, consistent with Case 1's history of cardiovascular disease and heart valve regurgitation.

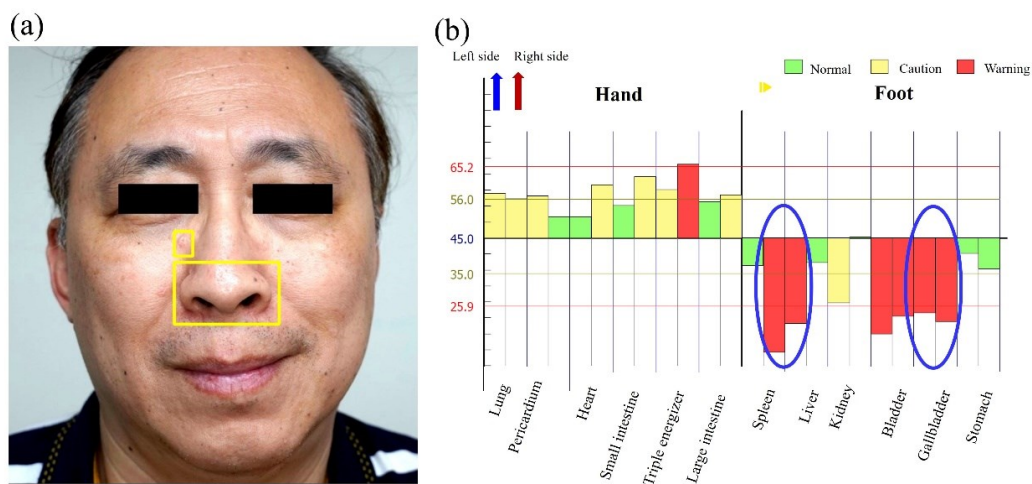


Figure 2. (a) Photographs of the face for case 1 and (b) the twelve meridians measurement (The green color of meridian value represented normal state; the yellow color of meridian value represented requiring attention state; the red color of meridian value represented warning state).

In Figure 3(a), pronounced swelling of the eye bags is observed in Case 2, marked by yellow squares. Case 2's health questionnaire reveals a

history of experiencing tinnitus for over 30 years. According to TCM, some black spots have been observed on the lower cheek, marked by blue

ellipses, which are associated with kidney health. Additionally, a darker facial skin color is observed, a characteristic noted in Huangdineijing, Lingshu 49, as indicative of kidney-related conditions. Furthermore, a lower energy level in the kidney meridian is observed, marked by a blue ellipse in Figure 3(b).

Additionally, Case 2 has undergone surgery to remove gallstones (less than 1 centimeter). We also observed a lower energy level in the gallbladder meridian and numerous spots spreading along the lateral side of the nasal bridge, which corresponds to the gallbladder.

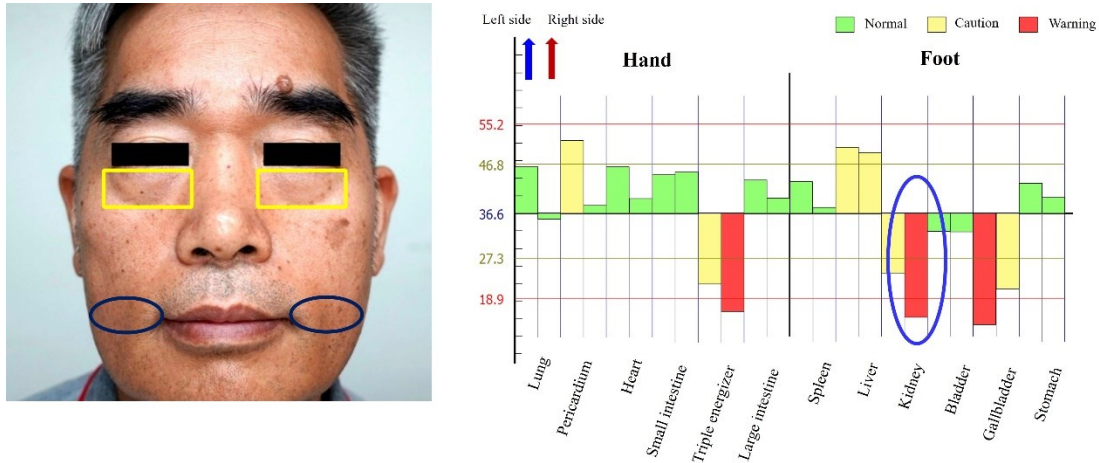


Figure 3. (a) Photographs of the face for case 2 and (b) the twelve meridians measurement.

These two cases reveal a correlation between facial reflex zones and the twelve meridians, suggesting the potential utility of this method as a future clinical adjunct diagnostic tool. This approach could provide early detection of potential clinical conditions, enabling proactive preventive measures.

4. CONCLUSION

The findings of this study demonstrate a promising correlation between facial reflex zones and the twelve meridians in TCM, indicating the potential clinical utility of this method as a diagnostic tool. By analyzing facial features and meridian energy levels, early indications of organ-related health issues can be observed, facilitating proactive preventive measures. Recent advancements in facial-

recognition technology applied to disease diagnosis underscore the potential with AI to enhance diagnostic accuracy and efficiency. The proposed method could be used for early disease detection and personalized healthcare through AI applications in the future.

Funding: This research received no external funding.

Data Availability Statement: The data used to support the findings of this study are included within the article.

Declaration of patient consent: The authors confirm that they have acquired a patient consent form, in which the patient or caregiver has granted permission for the publication of the case, including accompanying images and other clinical details, in the journal. The patient

Jih-Huah Wu, Yi-Chia Shan, Chuan-Tsung Su, Hui-Chung Wu, Chia-Yen Yang, Yung-Ching Weng. The correlation between meridians and face diagnosis —two case reports. *Jour. of Ayurveda & Holistic Medicine*, Vol.-XII, Issue-VII (July 2024).

or caregiver acknowledges that their name and initials will not be disclosed, and sincere attempts will be undertaken to safeguard their identity. However, complete anonymity cannot be assured.

Conflicts of Interest: The authors declare that they have no conflicts of interest.

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CITE THIS ARTICLE AS

Jih-Huah Wu, Yi-Chia Shan, Chuan-Tsung Su, Hui-Chung Wu, Chia-Yen Yang, Yung-Ching Weng. The correlation between meridians and face diagnosis- two case reports. *J of Ayurveda and Hol Med (JAHM)*.

2024;12(7):33-38

Conflict of interest: None

Source of support: None