Bi-Digital O-Ring Testによる経脈と経穴の位置に関する臨床的研究
－手少陰心経－（その1）

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【要 旨】
心疾患のない健常者10例を対象に、心臓に関連した各種の組織標本（プリラート）を駆使して、Bi-Digital O-Ring Testを行った。その結果、(1)15上肢（男女、左右）において、「心筋プリラート」のみで反応した部位は両側第5指（短側甲部、少衝穴）から上肢前面（尺側）および腋窩（極泉穴）までの皮膚上に9つの正円形とその円を結ぶ1本の線が描画できた。これらは中国医学の古典的経絡図の「手少陰心経」にほとんど相似していた。2また、手少陰心経に似ている皮膚上の線は心臓のいくつかの組織標本によって、あたかも鎖のように連続して描画された。つまり、右側第5指から順に右心室－プルキンエ線維－右冠状動脈－プルキンエ線維－右心房－三尖弁－肺動脈弁－プルキンエ線維が腋窩まで8つの部分に構成されていた。(3)被検者（4例）の「少海穴」相当部位の位置について、18日間の経日的変化を観察した。平均ヨコ8.9mm、タテ17.6mmの枠内で「少海穴」相当部位の位置が日によって移動した。これは臨床経験とも一致することである。(4)経穴の数について、古典経絡図の記載と同様く9つの円形が例外なく描画できた。ただしこの研究結果における円形状は、たとえば眼鏡のフレームのように輪郭の形状であった。つまり、円の中心（芯）の部分は抜けている。これは注目すべきことである。以上のBi-Digital O-Ring Test・イメージング法の結果から、手少陰心経は心臓と関係が著明に強い経脈であることが示唆される。

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Clinical Study of the Location of Meridians and Acupuncture Points Using the Bi-Digital O-Ring Test: A Study of H3 Ryodoraku-the Heart Meridian- (Part 1)

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ABSTRACT

Meridians and acupuncture points (acupoints) are essential concepts related to acupuncture and moxibustion, which have a three-thousand-year history in China. However, even now no meridians or acupoints are visible. Omura, Y. of New York City devised the Bi-Digital O-Ring Test (BDORT) and found by using this test that meridians and acupoints manifest their reactions on the body's surface. We have conducted BDORT using various tissue specimens collected from a large number of cases. Specimens of cardiac tissue from 10 individuals without heart disease (5 males and 5 females) were subjected to this test. The following results were obtained.

1) In 15 right and left arms of subjects of both sexes, resonance with the hand-held specimens of myocardial tissue resulted in depiction of 9 circles and a line connecting these circles, arranged from the little finger to the anterior, ulnar side of the arm and the axilla, on both right and left arms. These circles and line were approximately identical to the arrangement of H3 Ryodoraku, the Heart Meridian shown in classical meridian charts.

2) When the right arm was tested, the areas responding positively could be divided into 8 regions from the little finger to the axilla. These eight regions responded positively when the subject held the following tissue specimens in this order, respectively: right ventricle -- Purkinje fibers -- right coronary artery -- Purkinje fibers -- right ventricle -- tricuspid valve -- pulmonary valve -- Purkinje fibers. Thus, the line of H3 Ryodoraku, the heart meridian was found to be composed of chains of points which respond positively to various cardiac tissues.

3) In 4 subjects, the location of H5-7, Shaohai (HT3, 少海) was observed for 18 days. This
acupoint moved within a region of 8.9 mm vertical × 17.6 mm horizontal, on average.

The result obtained was approximately the same as the route of the Heart Meridian shown in classical monographs. The number of circles depicted (representing acupoints) was 9, identical to the number reported by Omura. The circles depicted in the present study resembled the frames of glasses. The center (core) of each circle was void. These results indicate that the heart meridian is closely related to the heart. We should pay more attention to the utilization of H3 Ryodoraku, the heart meridian when preventing and treating heart diseases.

Key words: H3 Ryodoraku, Heart Meridian, Bi-Digital O-Ring Test (BDORT), Acupuncture and Moxibustion, Meridian Phenomenon, Phenomenon of Propagated Sensation along the Meridians, Myocardium, Heart, Shaohai, Shenmen, Jiquan

INTRODUCTION

It is said that meridians serve as routes for the circulation of vital energy and nourishing energy. It is also considered that acupoints are doors through which vital energy moves. In modern medicine, however, nothing equivalent to vital or nourishing energy is known. It has however been widely accepted that phenomena involving meridians occur in the living body.

Although meridians and acupoints remain obscure, acupuncture and moxibustion have been effectively used to treat diseases or to effect anesthesia, based on the assumption that meridians and acupoints actually do exist. The experiences and results accumulated in China over three thousand years support the medical use of acupuncture and moxibustion in the present age. Experiences have also been accumulated in Japan and other countries. But all the same, no meridians or acupoints are directly visible.

Yoshiaki Omura, B.Sc., M.D., Sc.D., developed the Bi-Digital O-Ring Test (BDORT). This test is intended to detect information concerning the living body, in the form of changes in finger muscle strength. Omura devised this test with a hint from applied kinesiology, and endorsed its validity using scientific methods. Omura has shown that the meridians, described in classical monographs, can be depicted on the skin, using this test. This test and the results of its use are noteworthy because they provide the only way of making meridians visible.

Using this test in combination with heart-related tissue specimens, we recently attempted to depict meridians on the skin. The findings thus obtained were compared with the heart meridian on the anterior ulnar side of the arm (HTM), which is one of the meridians described in classical monographs.
METHODS

1. The subjects were 10 healthy volunteers who were free of cardiac disease.
   There were 5 males (age: 21, 23, 27, 43 and 52) and 5 females (age: 22 in four females and 23 in one).

2. BDORT was carried out as follows.
   The subject held a normal myocardial specimen in the palm of one hand. The examiner slightly touched that arm's skin, using an insulated bar. At the same time, the examiner pulled open the test fingers (a ring formed by the subject's first and fourth fingers of the other hand) by forming the examiner's own fingers into two rings linked with the subject's. The site of the skin where compression resulted opening the subject's finger link was deemed to be associated with the myocardium. Sites of the skin whose compression did not open the subject's finger link were judged to be unrelated to the myocardium. The border between these regions was marked with a pen. In addition to normal myocardial specimens, specimens of normal tissue of other heart sites (the ventricle, atrium, tricuspid valve, pulmonary valve, coronary artery, etc.) were also used. Direct BDORT was used in this study.

3. Analysis of chronological changes
   During an 18-day period, BDORT was conducted six times on HT3, Shaohai (HT3,少海), an acupoint along H3 Ryodoraku, the heart meridian, to examine whether or not the location and diameter of this acupoint would change. This analysis was conducted on 4 subjects, i.e., 2 males (age: 21 and 23) and 2 females (age: 22).

RESULTS

1. Sites related to myocardial specimens (depicted as lines and circles)
   Imaging using the BDORT depicted true circles associated with myocardial specimens and lines connecting these circles on the anterior ulnar side of the subject's arms. When this test was conducted on the right arms of 9 subjects (4 males and 5 females) and the left arms of 6 subjects (3 males and 3 females), nine circles connected by lines, resembling a rosary, were visible in all 15 subjects. The distribution of these circles and lines resembled the arrangement of the heart meridian in hands described in classical Chinese meridian charts (Fig. 1).

   In Fig. 1, a classical meridian chart is shown on the right part, and the results of BDORT in 2 subjects (a 21-year-old male and a 22-year-old female) are shown on the left.

2. Relationship between the skin on the ulnar side of the right arm and specimens of heart tissue (a 43-year-old male)
   After it was found that a meridian can be depicted just using a single specimen of myocardium, the author examined the relationship between arm skin and specimens of various heart tissues. This revealed that sites tested, beginning with the right little finger to the axilla, responded positively, in this order, to the right ventricle, Purkinje fibers, right coronary artery, Purkinje fibers, right atrium, tricuspid valve, pulmonary valve and Purkinje fibers, respectively (Fig. 2). The right arm showed no response to specimens of left ventricle, left atrium and left coronary artery.
Fig. 1  Lines and circles depicted by Bi-Digital O-Ring Test in 2 subjects
Right : The Heart Meridian and acupoints along it shown in a classical meridian chart.
Left : Lines and circles depicted in a 21-year-old male (up) and a 22-year-old female (under).

Fig. 2  Relationship between heart tissue specimens and depiction
on the skin of the right arm (anterior, ulnar side)
The diameter of each acupoint and the type and length distance along arm which induced positive responses are shown. The subject is a 43-yea-old male.
3. Changes in the location of right HT3(Shaohai) in 4 subjects

When the time course of H3-7,HT3 (an acupoint along the heart meridian in hands, located on the ulnar side of the antecubital space at the medial epicondyle of the humerus,少海), some subjects showed only small changes in the diameter of this acupoint over time during the survey period, while others showed great changes in this parameter. The location of the same acupoint moved little over time in some subjects, while it moved greatly in other subjects. During the survey period, the H3-7,HT3 moved within a region, with dimensions of 8.9 mm vertical × 17.6 mm horizontal, on average. The average diameter of the acupoint for 4 subjects was 9 mm.

DISCUSSION

It is possible to depict the outline of internal organs by using BDORT imaging. Omura Y. advanced this technique and found in 1986 that lines or linear networks were arranged on the surface of the skin, leading from the skin immediately above organs to the skin in the other parts of the body. These lines were very akin to the arrangement of meridians. Omura Y. named these lines a meridian-like network. He identified the internal organs corresponding to 10 meridians.

In 1987, Omura Y. studied tissues resonating with the pericardium meridian and the triple energizer meridian. In that study, he found that the adrenal gland resonated with the pericardium meridian. The triple energizer meridian corresponded to the ovaries in females and the testis or adrenal gland in males. In 1988, Omura et al., found that this method allowed depiction of the stomach meridian and acupoint-Zusanli (ST36; an acupoint along the stomach meridian) even in cadavers.

Also in Japan, a number of studies have been conducted concerning meridians and acupoints using BDORT. Studies of 12 meridians and extra meridians using this method have been reported. In addition, studies using BDORT have been reported at conferences such as the Congress of Japan Society of Acupuncture and the International Symposium of the Bi-Digital O-Ring Test, including studies on accumulation points(mu xue,募穴) and back points(yu xue,俞穴), relationship between accumulation and back points, and VM-7,CV8(Shenque,神門).

Shigematsu, S. et al. have made public six papers on their study on imaging of meridians and acupoints by the use of Bi-Digital O-Ring Test. Other published studies using BDORT include a study on differences in efficacy of H6-4,Heku (LI4,合谷) acupuncture depending on the direction of needle insertion, a study on the meridian conduction speeds, and a study on the morphology and location of F6-9,Zusanli (ST36,足三里) and stomach meridian.

These are major published studies in which BDORT was used to analyze meridians and acupoints. In the present study, healthy individuals, who were confirmed by interviews to be free
of clinical symptoms, were selected as subjects. All these subjects were free of abnormalities when their heart representation area (a term coined by Omura, Y.) was tested by BDORT. The method of BDORT used in the present study was the same as that employed by Omura, Y. and other investigators. Specimens of normal heart tissues, which had been prepared in advance, were used for BDORT. BDORT was repeated many times. The response to the BDORT test did not vary among different individuals, when an appropriate specimen was used.

The term 'Heart Meridian' (HTM) suggest that this meridian is related to the heart. Prior to the present study, however, it had not been established that this meridian is related to the heart. We selected myocardial specimens to examine this meridian, on the basis of the results of our repeated analyses of various specimens.

In classical meridian charts, HTM is arranged on the ulnar side of the anterior plane of the arm. We examined areas near this region using BDORT. We also examined whether or not other areas would respond positively to BDORT using myocardial specimens. We thus found that only the arm responded positively to the BDORT using myocardial specimens. The test using myocardial specimens resulted in the depiction of a line (1 mm in width on average) and 9 circles (6 mm in diameter on average). According to the classical meridian chart, HTM begins in the heart and belongs to the heart system. On the skin, it runs from the axilla, leading to the posteromedial margin of the arm ⇒ forearm ⇒ palmar hypothenar eminence ⇒ radial end of the little finger. Its branches rise through the heart system, sandwich the pharynx and then lead to the eyes. This meridian communicates with the small intestine.

The arrangement of the line and circles observed on the skin in the present study was almost equal to the arrangement of the HTM described in classical meridian charts. In a classical monograph, HTM belongs to the heart, and its branches lead to the eyes. The segment of this meridian shown as a dotted line in the classical meridian chart (Fig.1, right) was not depicted in our study using a myocardial specimen. The area shown as a solid line in the classical meridian chart was depicted in the present study using BDORT.

In the study conducted by Omura, the dotted segment of HTM, described in the classical meridian chart, was also depicted by BDORT. Omura reported as follows: "A 45 yr. old, white female volunteer. From the center of the chest where the meridian line reached the area between the 3rd and 4th intercostal spaces, the Heart meridian line went straight up exactly on the mid-line of the chest, throat, and chin, and then divided into 2 bilateral lines at the base of the lower lip of the mouth, which then went up across the cheeks to the approximate center of the lower eyelid on both the right and left sides of the face. The Heart meridian's connection up to the center of the lower eyelids was almost identical to the meridians found in classical acupuncture charts. Our study revealed that the Heart meridian not only did not end at the lower eyelid, but it continued around the outer edge of the eyelid, and to the approximate center of the upper eyelid, where it went up each side of the forehead."

In all of our subjects, BDORT resulted in depiction of a line, resembling that shown in classical meridian charts, irrespective of the site of the body at which the test was begun. A circle was depicted an the angle of the nail root on the radial side of the little finger. A circle was also depicted in the axillary region. Omura reported the depiction of Jiguan (HT1, 極泉) above the
axilla. In classical meridian charts, the route of the meridian between Shaofu (HT8, 少府) and Shaochong (HT9, 少衝) through the little finger was not clear. In the present study using BDORT, a 1 mm wide line was depicted on the radial side of the little finger as shown in the upper part of Fig. 1 (a 21-year-old male). Omura, Y. also reported that HT9 was located on the radial side of the 5th finger.9

Thus, BDORT results traced on the subjects' arms yielded 8 circles linked like beads on a rosary. This result is exactly the same as the HTM shown in classical meridian charts. Omura also found using BDORT that the HTM usually has 9 acupuncture points. Someone may say that this great similarity is unlikely, and that our study using BDORT was inappropriately influenced by preconceived ideas shaped by classical meridian charts, and thus yielded biased results. This criticism can be met by selecting a third party to be the BDORT examiner. However, it was difficult in actual practice to find cooperative third parties who did not have a personal interest in this kind of study. Therefore, to avoid the criticism, we made efforts to increase the number of subjects and to check carefully for any lines, resembling tree branches, on non-targeted areas of the subject's body during the BDORT. As a result, a line connecting circles, identical to the arrangement of HTM on classical meridian charts, was obtained on all 15 arms studied. The arrangement of the HTM, revealed by the BDORT, did not differ markedly depending on sex or side tested (right or left).

In addition to specimens of myocardium, specimens of some other major tissues were also subjected to BDORT. The following results were obtained. Eight lines with different lengths were depicted in the area between the tip of the fifth finger and the axilla, reflecting resonance with the specimens of right atrium, right ventricle and two heart valves (tricuspid and pulmonary valves). In addition, positive responses to specimens of right coronary artery and Purkinje fibers were visible at 3 sites (Fig. 2). The arrangement of these responses was not identical to either the route of blood circulation or the route of stimulus conduction. Positive responses (resonance) were not seen when specimens of tissue collected from the left side of the body (e.g., left atrium and ventricle) were used. No circle corresponding to Qingling (HT2, 青靈) was depicted, and the reason for this result is unknown. Circles corresponding to the other 8 acupoints were depicted in response to these specimens.

When stimulated with needles, some individuals show a sensation resembling electrical stimulation of the area near and distant from the stimulated point. Yoshio Nagahama (1915 - 1961, Japan) named it "meridian phenomenon". He encountered a 51-year-old male in whom this phenomenon was very marked. He checked for this sensation along he skin of this patient, while keeping a needle inserted in the Shenmen (HT7, 神門, a source point of the HTM), he found that sensation went up the arm along the ulnar side and reached CV7 and the face. Distally, a belt-shaped (not linear) sensation zone, ending with the little finger, was noted. The arrangement of the area showing this phenomenon was identical to the arrangement of areas showing positive response to the BDORT in the present study.

Jointly with Hideaki Jinno, we carried out a clinical study of a 59-year-old woman with traumatic cervical syndrome who showed the meridian phenomenon markedly. When her Qingling
(HT2, 靑靈), an acupoint along the HTM, was compressed with a press needle, the phenomenon appeared along a line leading to the little finger and in a belt-shaped region of the axilla. As acupuncturists usually experience during their practice, acupoints change their locations slightly from day to day. We therefore investigated changes in the size and location of HT3 (an acupoint easy to detect). Subjects, who had led relatively regular daily lives, showed no marked changes in the diameter or location of the acupoint. However, in the case of a 21-year-old male who had led irregular lives, both the diameter and location of the acupoint changed markedly from day to day. On average of the 4 subjects, the acupoint did not move markedly from the center of the surveyed zone. Omura supports this result, noting that within the meridian certain acupuncture points can shift in time, depending on the condition of the individual.

CONCLUSIONS

We attempted to depict the heart meridian, a concept of Traditional Chinese Medicine, on human skin, using the Bi-Digital O-Ring Test (an imaging method making use of resonance). The following results were obtained.

1. When subjects held specimens of myocardium, 9 circles and a line connecting these circles, arranged from the bilateral small finger to the anterior ulnar side of the arm and the axilla, were depicted. These circles and line were approximately identical to the arrangement of the heart meridian shown in classical meridian charts.

2. The areas responding positively could be divided into 8 regions from the right small finger to the axilla. These eight regions responded positively when the subject held either of six tissue specimens.

3. Chronological changes in the location of acupoint Shaohai (HT3, 少海) were examined. This acupoint moved within a region, but its size did not change.

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赍せ

会員各位 殿

代々木良導経学院の件に就いて

この件に関しては会員の皆様には大変ご迷惑とご心配をおかけ致しましたが、日本良導経自従神経学会東日本支部役員と学院責任者が話し合い謝罪文を医道の日本へ持参いたしました処、謝罪文のみでは掲載できないと断られました。

再度、両者話し合いの結果以下の如く決定致しましたので報告致します。

1. 学院では、良導経の理論・基礎及び応用を指導する。
2. 学院卒業者は日本良導経自従神経学会会員に入会する。
3. 学院の講師は、日本良導経自従神経学会の会員とする。

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