Pain Management and Scientific Acupuncture

—Especially about Ryodoraku Therapy—

Kumio YAMASHITA M.D.
Tokai University Oiso Hospital
Professor of Oriental Medicine

I  A Brief History of Acupuncture in Japan

It is generally believed that acupuncture was brought to Japan from China by Chi So (智聡). However, some Japanese historians believe this was done by Jo Fuku (徐福) in 265 A.D.

In 608 two Japanese monks, Enichi (恵日) and Fukuin (福因), studied Acupuncture in China. In 984, the noted physician, Tanba Yasuyori (丹波康頼), published “Ishinpo”, the oldest medical textbook in Japan, in which the practice of acupuncture is described. The Edo period (1603-1867) was the zenith for acupuncture in Japan; and most of the present acupuncture technique was developed during this period.

After the Meiji Restoration in 1868 the Japanese government established medical law for Western medicine and Ancient Traditional Chinese Medicine, which is called Kampo in Japanese including acupuncture, was omitted from formal medical school education. Acupuncture, moxibustion, oriental massage and other techniques continued to be practiced with the support of many patients, and were officially recognized under Japanese law in 1947.

It is interesting, however, that some of the medical doctors educated in Western medicine maintained a deep interest in Kampo. Among them was Yoshio Nakatani who studied acupuncture electrophysiologically and discovered that most of the meridian points of the traditional acupuncture theory corresponded to points which have lower electrical resistance than the normal body surface. These meridian points are called “tsubo” in Japanese. Nakatani named these points “Ryodoten”, which means electroconductive points, and the systematic functional group of Ryodoten which form the shape of band, he called “Ryodoraku”.

It is the consensus of many medical researchers today that the Ryodoraku corresponds to the meridian pathway of Traditional acupuncture theory. By using this Ryodoraku therapy for pain management, we have successfully treated many cases.

Turning to the Japanese history of acupuncture medicine, I will point out some interesting facts. According to the Taiho statute in 701 A.D., the training course for acupuncture was described as 7 years. This is very interesting as this nearly compares with the
length of present medical course which are 6 years.

Isai Misono devised an acupuncture method using a rather thick and dull needle and tapped it in with the inertial strength of hitting with a wooden hammer. Once he treated a weakened and nearly withered peony in the emperor's garden and revived it with acupuncture. The emperor was so pleased that he awarded him the honorable family name of Misono, which means the palace garden.

Waichi Sugiyama, one of the well-known acupuncturists in the Edo period, (ruled by the Tokugawa) who because of blindness wasn't able to learn acupuncture technique very well, one day visited the Enoshima Cave Shrine to pray for help to enable him to do his work better. He promised the god to continue his prayer for 100 days. On the last day of his promise, there was no sign of help from the god and he fell down and wept. At that time, a sharp needle wrapped in a wide leaf pricked his bottom and he discovered the method of using a tube through which a needle could be passed easily for acupuncture. So in spite of his handicap of blindness he became an excellent acupuncturist by using tubes. The developments of the needle tube by a blind person become the basis for later developments such as the Showa needle tube, which is more commonly known as the Ryodoraku Autonomic Nervous System Regulating Needle. This story is very interesting to know the fact why the acupuncture is tried by many blind people and why the needle of Ryodoraku is used in the special type in Ryodoraku therapy.

Since 1971, when acupuncture analgesia was broadcasted to many countries from the People's Republic of China by reporters of the United States who accompanied President Nixon, acupuncture and Chinese herbal medicine were praised by journalism throughout the world.

However, 4 years prior to the 1st Chinese acupuncture analgesia report in China, Kobei Akabane (a renowned acupuncturist) and Hideo Nishiyama (gynaecologist) used acupuncture analgesia for child delivery.

In 1969, Michio Tani and Yoshio Manaka used it for 3 cases of appendectomy.

In 1950, Dr. Nakatani discovered Ryodo points. While measuring the electro-conductivity of a patient with very severe nephritic oedema. Dr. Nakatani noticed many electro-permeable points on the patient's skin and revealed that these points were not much different from those of other patients who were suffered from the same nephritic oedema. He also noticed that these electro-permeable points or Ryodo points as he called them were very similar with the classic meridian points indicated by traditional acupuncture theory.

"Ryodo" means high electrical conductivity and "Raku" means a connected line of points, thus Ryodoraku signifies a line of high electrical conductivity.
The meridian points and meridian lines were revealed clearly in the famous bronze figure which is said to have been made in 1443 A.D. during the Ming Dynasty. The phenomenon of the 12 meridians was discovered nearly 1500 years ago. Since this date no major changes or corrections have taken place.

These meridian lines are now studied as P.S.C. or P.S.M. (Propagated Sensation along Channels or Meridians) not only in China but also worldwide including Japan. Whereas the use of acupuncture analgesia has declined, the number of hospitals where acupuncture treatment is being used has increased gradually since 1975. Even though acupuncture analgesia for surgery is gradually becoming less widely used in Japan, acupuncture treatment derived from acupuncture analgesia is becoming more popular in the big hospitals. Now nearly 80% of the big hospitals are using acupuncture medicine, especially in their pain clinics; about 2% of national Japanese medical care consists of acupuncture treatment.

a) General treatment

As you know, acupuncture treatment consists of three methods, 1) general treatment 2) local treatment and 3) specific treatment.

As for general treatment, usually 4 traditional methods of examination are used; they are looking, listening, asking and touching (palpation). These classic methods rely mainly on subjective evaluation, which makes it difficult to correlate and evaluate patient data. In Ryodoraku therapy an objective measuring method has been devised by using electro-permeable points. The points are detected with an instrument named the Neurometer, which is equipped with a grip electrode for the indifferent electrode, electric battery, variable resistor, micro-meter, voltage-selector, and measuring electrode. The patient grips the positive electrode in one hand, while the examiner runs a negative moist electrode with a physiological saline-soaked cotton ball fitted into the ebonite cap along the patient skin. The use of a wet electrode is unrelation to the function of sweat glands and hair follicles.

Before performing Ryodoraku measurement, the moist electrode and the grip electrodes are connected and the current is adjusted to 200 micro amperes at 12 volts. In order to determine the extent of abnormalities of the Ryodoraku, a specially designed Ryodoraku chart is used. The value of electric current is measured at representative measuring points on each Ryodoraku, and the value of these points is plotted on the chart with a short horizontal line.

Ryodoraku representative measuring points on the hand are arranged along the wrist and nearly coincide with the Source Points of the respective meridians. Differences between Representative Measuring Points and Meridian Points are seen on the Small
Intestine and Large Intestine meridians.
(Small Intestine Rep. mes. point is H₄5 (SI 5) and the Source Point is H₄4 (SI 4))
(Large Intestine Rep. mes. point is H₅5 (LI 5) and the Source Point is H₅4 (LI 4))
Ryodoraku measuring points on the foot also nearly coincide with the Source Points, except for the Kidney and Urinary Bladder meridians.
(Kidney meridian Rep. mes. point is F₃6 (KI 4) and Source Point F₃3 (KI 6))
(Bladder meridian Rep. mes. point is F₄3 (BL 65) and Source Point F₄4 (BL 64))
In the Ryodoraku chart, when the measured values are approximately on a single line across the chart, the patient may be considered to be in good health.
However, when a discrepancy appears showing high and low values of a divergence of more than 1.4 cm, this would indicate abnormalities. If this 1.4 cm band across the chart is taken as the patient’s normal physiological range, when one of the Ryodoraku shows values higher (excitation) or lower (inhibition) than the physiological range, in each case the Ryodoraku characteristic symptoms will be present.
As for Ryodoraku treatment, higher Ryodoraku readings may be suppressed by using sedation points and lower Ryodoraku readings may be stimulated by using tonification points.
I have devised a new Ryodoraku chart which has two more tonification and sedation points added to the original Ryodoraku chart. By using this new chart, doctors will find it easier to choose treatment points in their daily clinical work.

b) Local treatment
As for local treatment, Ryodoraku has a very useful method called “REPP” (Reactive Electro Permeable Point) Therapy.
The meridian points are specific reactive points and are the treatment points on the meridian line.
When a moist electrode using 12 volts is applied to patients, comparatively clear electropermeable points are revealed. They are called reactive electroporpermeable points or Reactive Ryodo points.
The reactive electropermeable points, depending on the disease, are the loci where excitation of the sympathetic nerves on the body surface is heightened by reflexes. When appropriate stimuli are administered to such REPP, in almost all cases, the electric permeability is lowered and the complaints of the patients decrease or disappear completely.
This is understood as follows: Localized excitation of the sympathetic nerves occurs at the body surface due to organ disorder or between nearly normal or abnormal tissue. Thus the REPP are considered effective points of treatment for acupuncture, and hence this is referred to as REPP therapy, or localized sympathetic nervous regulatory therapy.
c) Specific treatment

Specific treatment means to use one or several acupoints which are useful for a particular disease or its symptoms. There are many such points written in the classics, as well as in recent acupuncture books.

In Ryodoraku Therapy one doesn’t hesitate to use these specific points if necessary. I would like to mention several specific points which are very useful in Ryodoraku therapy.

1) Nakatani’s A and B Eye Points.

Eye point A is located on the line from the outer edge of the eyelid to the upper root of the ear lobe in front of the hair line. Eye point B is located in front of point A. Needles may be inserted down behind the zygomatic bone from these two points. A and B are very effective points for eye diseases including color blindness and pseudo myopia.

Eye Diseases

1. F$_5$36 (GB 16) Moku-so
2. Eye point A

Located on the line from the outer edge of the eyelid to the upper root of the ear lobe in front of the hair line.

Eye point B

Located 0.5 cm in front of point A. Points A and B for eye treatment. Needles may be inserted behind the zygomatic bone through these two points. As the patients who receive treatment for color blindness; false myopia, etc. are mostly children, the needles are left in these points without pecking. The effectiveness will be 2 times greater if pecking of over 15 times is done following needle insertion. However, doctors must be careful not to give too much stimulation as this has caused faintness among patients at the rate of 1:15.

3. F$_5$52 (GB 12) Kan-kotsu
4. H$_4$20 (TH 17) Ei-fu
2) H₃₃₀ (TH 21) for tinnitus
Insert the needle right into the artery: micro-bleeding from this point may be very successful for tinnitus and dizziness.

Eye Diseases

1. H₃₂₃ (TH 20) Kaku-son
2. H₃₃₀ (TH 21) Ji-mon
   Put the needle right into the artery and micro-bleeding from this point may bring good results for tinnitus and dizziness.
3. H₄₂₂ (SI 19) Cho-kyu
4. F₅₅₃ (GB 2) Cho-e
5. H₅₂₁ (TH 18) Kei-myaku
6. H₅₂₀ (TH 17) Ei-fu
3) New point Bi-sen (also called Jo-gei-ko) for rhinitis
Bi-sen is located beside the nasal bone and 1 cm below F475 (BL 1).
For nasal stimulation, the needle may be inserted downward along the line of the nose
from the point just below the socket while rubbing the bone. 5 times of light sparrow
pecking technique is sufficient.
This treatment is indicated for allergic rhinitis and rhinitis hypertrophica. In addition,
stimulation on REPP is necessary for Empyema Highmori.

Nose Diseases

The nose is closely related to LU (H1) and any nose diseases show
abnormalities of LI and ST which
surround the nose.
1. VM 27 (GV 23) Jo-sei
   Specific point for Empyema Highmori.
   For empyema and congested nasal
   passages.
3. F651 (ST 5) Shi-haku.
   Infraorbital nerve.
4. New point:
   Bi-sen (also called Jo-gei-ko) is located beside the nasal bone and 1 cm
   below F475 (BL 1) Sei-mei. For
   nasal stimulation the needle may be
   inserted downward along the line of
   the nose from the point just below
   the socket while rubbing the bone.
   5 times of light pecking is sufficient.
   The treatment is indicated for aller-
   gic rhinitis and rhinitis hypertro-
   phica. In addition stimulation on
   REPP is necessary for Empyema
   Highmori.
5. H627 (LI 20) Gei-ko
   For disturbed sense of small. Gei-
   ko, LI 20 is a very useful meridian
   point for rhinorrhea and the loss of
   the sense of smell.
4) Gonitis REPP therapy
Surrounding the patella, two upper and two lower REPP are found. Sometimes one more REPP is found. From the base of the patella, the needle should be inserted behind the cavity of the patella. For cases of severe pain, two acupuncture insertions may be added contralaterally along the patella.
After the needle is inserted, it is pushed through the skin and pecked, or sometimes electrically stimulated, except in cases of rheumatism.

Gonitis (Right)

6. Usually four REPP surrounding the patella are used.
7. F₄₉ (ST 36) Ashi-san-ri
8. F₁₅ (SP 5) Sho-kyu
   In gonitis patients, excitation of F₁ (SP) is often seen, so F₁₅ (SP 5), the inhibition point of SP, is used.
So we can say that in Ryodoraku points to be used except in general treatment could be the following:
1) REPP for local therapy 2) Painful pressure sensitive points or tender points 3) Reactive motor points found in stiff muscles 4) Points near nerve trunks 5) Direct organ stimulation if necessary 6) Points surrounding inflammation loco, and 7) Traditional meridian points which are indicated according to classical theory.

d) Features of Ryodoraku
In conclusion, the features of Ryodoraku are as follows:
1) Scientific — Treatment points are measured electrically.
2) Objective — Meridian phenomena are objectively evaluated on the chart.
3) Simple — Easy to use in clinical practice.
4) Clean and Safe — One needle per patient and no needle contamination
5) Comprehensive — Easy to understand for any doctors, who are not familiar with Eastern medical method of thinking.

We can say that these features just mentioned, abbreviated as SOSCC warrant the recent increase of Ryodoraku in the big hospitals which have over 500 beds. According to recent statistics over 80% of them use acupuncture including Ryodoraku.

III The Future of Ryodoraku
a) A New Ryodoraku Chart and Instrument
Although there are many areas in which Ryodoraku can be improved, it has many excellent features, including those I have referred to as SOSCC, which insure that Ryodoraku will earn its place as a model scientific method of treatment. Recently a newly improved neurometer has been devised. The characteristics of which are as follows:
1) Abnormal Ryodoraku and left-right differences will be clearly discriminated by a round-shape graph.
2) It can record old and new data automatically and simultaneously.
   So that the information can be displayed on the same screen.
3) The Ryodoraku treatment points, that is the General Regulatory Treatment of the Total Ryodoraku - GRT, can be displayed on a model of human figure by an automatic analysis system. When requested this system will also provide a description for herbal medicine.

b) Cancer Research
Dr. Kobayashi suggested the Ryodoraku abnormalities specific to cancer.
The theory is as follows: The autonomic nervous system, which supports the involuntary activities of daily life, is controlled by the sympathetic and parasympathetic nerves.
Excessive tension of the para-sympathetic nerves, which are necessary for nocturnal functioning, is implicated in the manifestation of cancer. Also he noticed that cancer patients usually have excitation of H₂ (HC), H₃ (HT), and H₅ (TH), and inhibition of F₁ (SP), F₃ (KI), and F₅ (GB) and also show significant differences in values on the left and right side of the body. So he devised a Cancer Check of the Related Meridians (CCM). Thus, Ryodoraku is now being used for the diagnosis of cancer.

Ref. Discovery of the Ryodoraku abnormalities specific to cancer (Amer. J. of Acup. 14(2), 139-142, P 1986)

c) Health Examination of human “dock” and Ryodoraku

I had the experience of working in a clinic which also had a health check system. In this clinic I used Ryodoraku for the health check; I could give them a clear and logical explanation using the Ryodoraku Physiological chart to show correlations between Ryodoraku patterns and specific health problems. A large percentage of them have become our clinic patients and we are treating their various complaints.

IV Meridian Points

As for meridian points, they are usually defined as the dotted points along the meridian and are said to be the entrance and exit of vital energy, vital energy being referred to as ‘ki’ in Japanese. They are the reactive points of several diseases, and at the same time, they are useful and effective points for the treatment of these diseases. Briefly the meridian point is the entrance of vital energy and an important point for the treatment of these diseases.

In Ryodoraku therapy, meridian points may be the loci where the excitation of the sympathetic and sensory nerves is caused by some disease and, in this sense, every part of the whole body can be an acupuncture point.

The meridian phenomenon observes the function of the sympathetic nerves on the surface of the body and the Ryodoraku is a very effective for measuring the level of excitation through the electro-resistance of these points.

Here Dr. Nakatani attached importance to the sympathetic nerve function concerning acupuncture and believed that many kinds of meridian phenomenon are revealed through the sympathetic nerve function. No specific nerve endings have been discovered in the meridian points, although, they are thought to be specific receptors and consist of a balanced system for maintaining homeostasis of the human body. It is not sure whether these functional structures are projections of the central nervous system if they are signs of some electromagnetic system. If the latter is true, meridian points will surely be given important attention in the future.

Here we will show our own definition.

The meridian phenomenon is a functional phenomenon demonstrating similar reactions to
many kinds of phenomenon revealed in the atomic field. (electric wave, atmospheric pressure, circumstantial temperature, body temperature, and so on) This shows up more clearly in an unhealthy body. The depth and size of these meridian points differ according to individual body types.

"What is a meridian?" is the question which is likely the oldest and yet the newest question of all. The doctors who have an interest in acupuncture medicine and who use it in their daily clinics work or physiologists and anatomists who are studying the mechanism of acupuncture analgesia and morphology of the skin must answer this question in the near future.

Anyhow, the following is my speculation:
The meridian may be like a plaza and once something happens in the body, may of the so-called autocoid, that is automatically moving substances, come together at this plaza to transmit various kinds of information rapidly to the whole body through meridian channels.

We can summarize the many theories concerning the meridian as follows:

Meridian point

I From of a Morphological Perspective
1) Existence of specific ducts and bodies (Bong-Hang theory)
2) Existence of specific arterio-venous anastomosis (Niboyet)
3) Existence of specific subcutaneous induration (Fujita and Kishi)
4) Dense distribution of muscle bundles (People's Republic of China)
5) Dense distribution of nerve and vessels (Yamashita)
6) Others: (Pacinian corpuscles, lymph vessels, connective tissue)

II From a Functional Reactive Point Perspective
1) Viscero-Cutaneous reflex, Oppressive pain points, Referred pain points
2) Electro-permeable points:
   a) Dermo-electric points (Ishikawa)
   b) Ryodo points (Nakatani)
3) Points which demonstrate differences in skin temperature and perspiration

III From an Effective Point Stimulation Perspective
1) Trigger Point (Melzack)
2) Needle sensation points
3) Points which easily influence the internal viscera
4) Densely distributed areas of polymodal receptors
5) Densely distributed areas of A-beta nerve fibers
Conclusion

Ryodoraku therapy is not only an acupuncture theory with electrical stimulation, but also an oriental medicine using many kinds of ideas and techniques of western medicine. It must be emphasized that this therapy may be used easily and widely in western style clinics and hospitals. In the future we predict it may be used for the prevention of sickness, cancer research, stress improvement, and even for hospice.

Here's a bit of my own philosophy:
Western medicine may be likened to a father's love, Oriental medicine to a mother's love, not one school of medicine is complete in itself; The combination, a Western-Oriental medical approach, that is to say, Ryodoraku, is the ideal par excellence.