

Exploration of the Correlation Between Myofascial Meridians and Twelve Meridian Tendons

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Abstract:

The myofascial meridian is a theory based on modern anatomy that has emerged in recent years, and the twelve meridians belong to the classic theoretical system of traditional Chinese medicine, both of which are widely used in the field of rehabilitation treatment. Although the theoretical systems are different, clinical applications have found a close connection between the two. Therefore, this article discusses the relationship between the myofascial meridians and the twelve meridians from the perspectives of definition, structure, function, and application, and conducts a correlation analysis based on the route, treatment ideas, and clinical effects.

Keywords:

Meridian of Muscle Fascia, Twelve Meridians and Tendons, Relativity

1. Introduction

With the development of The Times, policy promotion and the enhancement of people's health concept, more and more people actively participate in the "Healthy China 2030" planning outline, and the progress of science and technology also promotes the interdisciplinary integration of various disciplines. myofascial meridian and twelve meridian tendons are widely used in rehabilitation nursing and traditional Chinese medicine physiotherapy, both of which have a certain correlation in thinking, technique, training and curative effect. With the development of visualization of scientific instruments, it is observed that there are many structural similarities between the two. Therefore, through the comparison and analysis of the structure, function and application of the two, this paper explores the possible connection, so as to lay the theoretical foundation for the research.

2. Myofascial Meridian-Line Discussion

2.1. Myofascial membrane is defined by the line

The myofascial meridian concept originated from the American physiotherapist Ida Rolf and started by Thomas W. Myers. The team has been further expanded and promoted after practice testing. [1] Theme of myofascial principle: while retaining the muscles for work alone, consider the continuity of the whole through the fascia network, and then observe the effects on the various functions of the human body. [2] In the past, a skeletal muscle is often viewed in isolation, separating the connectivity of upper and lower tissues, and the separation of adjacent soft tissues such as nerves, blood vessels and lymph. However, the myofascial meridian is no longer based on linear causality in traditional anatomy, but emphasizes the relationship between the human body. myofascial meridian is composed of skeletal muscle “Myo-”, connective tissue “fascia” and longitude and latitude. The meaning of the word can be directly understood as constructed by connective tissue and wrapped in the shape of longitude and latitude. Connective tissue is the main substance forming the myofascia, responsible for the conduction of various ions, and secrete various bioactive substances into the intercellular space to nourish its biological tissue. At the same time, it is also widely distributed in bones, ligaments, tendons and other slightly hard structures. [3] Micro, it is a dynamic three-dimensional macromolecular network formed by rich extracellular matrix (ECM). It mainly provides cell signaling interaction, provides physical-chemical homeostasis for nearby cells and tissues, and provides a platform for cell proliferation, migration, differentiation, autophagy, and reconstruction. Macro, the force is like the earth, providing corresponding support for different movement states, so as to realize the function of efficient conduction and bearing force. [4,5]

In conclusion, myofascial meridian is a network structure composed of connective tissue wrapping skeletal muscle in the shape of longitude and latitude, and it is an communicative platform to provide physical and chemical attributes between tissues. [6]

2.2. Analysis of the myofascial biostructure

Myofascial generally exists around people, and the thickness is between 590 and 1453 μ m. The myofascial distributed at the end of the limbs is relatively thick, and the muscle flexibility is significantly correlated with the myofascia thickness, human age and BMI value. [7] From a macro perspective, myofascial can be divided into deep myofascial and shallow muscle fascia. Deep fascia is composed of dense connective tissue and a large number of nerve fibers, wrapped in bone, skeletal muscle, nerves and blood vessels, containing a large amount of sticky matrix and intercellular fluid; superficial fascia in the lower dermis is composed of sparse connective tissue and a large number of elastic fibers, wrapped in fat, subcutaneous nerves, superficial veins, superficial lymph and other tissues, and contains a layer of striated muscle to make the surface skin mobile. [8] From the microscopic perspective, the myofascial is composed of a large number of fibroblasts to maintain the structure of each tissue to participate in physical conduction, and constitute the prerequisite for the secretion of extracellular matrix. According to the proportion of fibroblast cells in the fibroblast group, the myofascial in the fibroblasts contain collagen and elastic fibers, which can actively regulate the tension of the tissue. [9] Nerve fibers and receptors also diffuse in the myofascial. The Golgi tendon, Pacini bodies and spherical bodies are mainly distributed in the superficial fascia layer, while about 40% of the innervation in the deep fascia is composed of sympathetic nerve fibers. [10]

Therefore, the cells in the myofascial are clearly divided and cooperate with each other to migrate the embryonic stem cells generated in the body to where the human body needs, so as to achieve the super adaptability of the fiber / connective tissue system to the internal and external environment and the super responsiveness of internal and external stimuli.

2.3. Biological function analysis of the myofascial

Because of its special biological structure, the myofascial fascia has the function of stretching the whole and self-regulating the mechanical balance. [1] From the macro analysis, the function of centripetal force and centrifugal force through the closest distance between the bone and the soft tissue. In the biomechanics, the soft tissue attached to the bone on the bone is the main pressure element, and the latter is connected to the optimal properties of biological material and energy efficiency to realize the important function of the whole structure of the human body (tensegrity). [11] By tensioning, the overall structural force will disperse along the tension line into the whole structure to jointly carry the load. myofascial is the key factor to ensure that the human body can disperse the force under the local force state, and new force lines can also be generated through mechanical information. For this reason, the functional particularity needs to be analyzed from the microscopic perspective. Each organelle in the cell is connected with the cell membrane and form a highly structured musculoskeletal system (cytoskeleton); the intracellular myoskeletal system is composed of resistance to microtubules, stretch microfilament and cooperate with the mechanical active connection, and the membrane can provide mechanical receptor for the cell from the membrane and affect the physical activity of the cell to change the function of cell metabolism. [1,2,12]

“Macro highlights the micro, micro quality leads the macro” Therefore, myofascia has the overall structural function of tensioning, which realizes the best biomechanical characteristics through the balance of self-regulation force, providing a better living space for the cells in the tissue, but also the overall structure of human efficient survival ability.

2.4. Analysis of myofascial application ability

The myofascial is linked to each other, forming 7 different kinds of myofascial chains, which play their own application ability in human movement, and provide practical support for the realization of self-mechanical regulation and the overall structural function of tension. [13] The 7 myofascial chains and their respective application capabilities are respectively:

2.4.1. Post-surface line application capability

The posterior surface line (Superficial Back Line, SBL), from sole to knee and then from knee to forehead, in anatomy, plantar fascia, plantar-flexor, gastrocnemius, hamstring, sacral ligament, lumbosacral fascia, sacral fascia, erector and cranial fascia; avoid body flexion in human standing, containing high proportion of endurance muscle fibers, mainly has the ability to fix the trunk in the neutral position and straighten the trunk; When the posterior surface line is abnormal, the overall structure is hamstring shortening, pelvic advancement, sacral sagging, and eye-ridge movement.

2.4.2. Application ability of the front table line

Front surface line (Superficial Front Line, SFL), from foot back to pelvis to head, from bottom to top in anatomy, short toe, long extensor, tibialis, subpatellar ligament, quadriceps, rectus abdominis, sternal muscle, thoracic rib fascia, sternocleidomastoid muscle, and scalp fascia; main tension supporting the trunk, with high proportion of fast muscle fibers and SBL to complete the movement of the sagittal plane; SFL abnormal often appear overall downward tightening, thus causing trunk-hip flexion and limited knee extension.

2.4.3 Application ability of body lateral line

Lateral line: (Lateral Line, LL), from the medial midpoint of the foot through the lateral ankle to the trunk and then to the ear, in anatomy, peroneus, fibular anterior ligament, iliotibial band, fascia lata, gluteus maximus, external oblique muscle, abdominal muscle, intercostal and internal muscle, sternocleidomastoid muscle, and head clamp; maintain the body balance and coordinate the meridian forces in upper limbs, maintain trunk stability when body structure occurs, ankle front or back, knee valgus, lumbar scoliosis and so on.

2.4.4. Helical application ability

Helix line (Spiral Line, SPL), Composed of two threads surrounding the body, From the sides of the skull through the upper back to the opposite shoulder subsequently, Around the rib to the anterior body and the navel to the hip side to the skull, Passing from starting point to stop point in anatomy, Head clamp muscle, rhomboid muscle, serratus anterior muscle, abdominal muscle group, tensor fascia lata, iliotibial band, tibialis anterior muscle, peroneus long muscle, biceps femoris, sacral tuberos ligament, lumbosacral fascia, erector spinal muscles; Two warp threads surround, When the trunk performs unbalanced movements such as torsion, The SPL is responsible for maintaining the center of gravity stability; SPL also participates in other warp movements, So when it is abnormal, other lines will make up, Internal rotation of the iliac bone is typical of an abnormal SPL condition.

2.4.5 Arm line application ability

Arm line (Arm Lines) is mainly composed of arm deep line (DFAL), arm surface line (SFAL), arm deep line (DBAL), and arm table line (SBAL), which start from the axial bone and pass through the four surfaces of the rotator cuff, stop at the thumb, small finger, palm, back of the hand; arm line is hung in the upper half of the trunk, crossing a large number of flexible joints, mainly responsible for pushing and lifting, and other lines; When the four arm lines are abnormal, rib activity, breathing ability, cervical activity will decrease.

2.4.6. Application ability of function line

Functional line (Functional Line, FL), from the knee to the pelvic position and to the contralateral chest and then to the shoulder and arm, FL into three ipsilateral parts in anatomy. The ipsilateral part of the “sewing maker muscle, lateral oblique, latissimus dorsi muscle” anterior part “long adductor, rectus external sheath, inferior pectoralis major” posterior part “subpatella ligament, femoral lateral muscle, gluteus maximus, lumbosacral fascia, latissimus dorsal muscle”; The FL is mostly located in the anterior lateral tissue, Participation in standing posture is less related, Spirical and can be regarded as a supplement of SPL, With the arm can increase more kinetic energy of the lower limbs, Balance the upper and lower limbs while running or

walking; The FL provides a stabilizing force upward to transfer the tension downward, there is a clear tendency to rotate in the trunk when abnormal, the contraction of the shoulder is typical.

2.4.7. Application ability of front deep line

Front deep line (Deep Front Line, DFL) is the core of the overall tensioning structure, the sagittal plane is wrapped by SBL with SFL, the coronal surface is again located between the LL. From the bottom of the foot to the bottom of the facial skull, Three-dimensional, including the whole body and closely related to the hip joint; Maintain human stability in all aspects, and to stabilize the thorax during respiratory exercise, the DFL has a dense tissue structure and more slow muscle fibers and endurance muscle fibers; DFL increases each stability from the hip to support the lumbar force and wrap the abdominal cavity to form intra-abdominal pressure, also play to balance the neck and head stability; When the abnormal DFL will cause an overall trunk shortening, and cause limited hip extension, leading to the overall gravity instability of the pelvis and spine. [1,14,15,16]

The 12 myofascial chains composed of 7 kinds of myofascial lines provide a new explicit perspective for the problems of human movement performance, movement integration, posture assessment and so on. It also retains the muscle isolation theory while enabling a multi-functional and variable tissue, providing a new integrated idea for exercise rehabilitation and exercise training.

3. Twelve Meridian Tendons Discussion

3.1. Twelve meridian tendons is defined

Jing Jin is the basic category of traditional Chinese medicine system. As early as in the Rites of Zhou Tiangong, the concept of “nourishing bone with acid, nourishing tendons with xin, nourishing veins with salt, and nourishing meat with sweet” was further improved in the Medical Classic of the Yellow Emperor, and the building of Yin and Yang belongs to the concept of Jing Jin. [17] The veins and veins together form the meridians, walking through the human limbs, viscera, facial features and nine orifices, and the tendons belong to the veins. Liu Xi of the Eastern Han Dynasty “Release the name” cloud “Jing, diameter also”, and “Notes” said “tendon, the power of the flesh also, from the force from the flesh from the bamboo”. Therefore, it can be understood that the “meridian” is like a path, that is, the common way, and the “tendon” is composed of meat like a bamboo structure and can generate power, that is, the real thing. Therefore, from the nature of the meridian tendon is different from the strange eight meridians, twelve skins, twelve diameter meridians and other meridians. “LingShu, the tendon” “Meridian tendons wood, China in the claw, between the claws, sheng in auxiliary bone, wrist bone, in the knee, the muscles, to the neck, check in the head, the body of the Meridian tendons slightly”, expressed the tendons and the meridian of gas form muscle joint system, and can be divided into twelve tendons in the body hands and feet, calves, knee, neck, etc probably dun direction. [18] To this end, the way of the twelve tendons and the meridians are mostly consistent, but can not see the joint, skeletal muscle, tendon, ligament and other sports system organization as the twelve tendons, but the twelve tendons connected with the body and the meridians, can also reflect the viscera. [19]

To sum up, the twelve meridian tendons are the peripheral part of the meridian system, the base of Yin and Yang and other tendons and veins system have their

positioning, nourishing the bones and joints, to resist external evil to maintain the normal movement of the human body.

3.2. Structural analysis of the twelve tendons

The tendon is not a single point to line structure, nor a two-dimensional surface structure, but a three-dimensional structure around the human body. In the Medical Classic of the Yellow Emperor, the traces of the twelve meridian tendons are divided into “straight line” and “evil line”, namely “main meridian” and “branch meridian”. The A and B Classics of Acupuncture gives a comprehensive explanation of the direction of the twelve meridian tendons in more detail, and the content is basically consistent with the Lingshu · Jing Jin. [20] Therefore, in order to clarify the structure of each meridian tendon, with the meaning of the above classics, the paper analyzes the “main classics” and “supporting classics”.

3.2.1. The “Main meridian” and “supporting meridian” structures of the foot Sanyang meridian tendons

The foot sun through the tendon “main meridian”, with the small finger of the foot, around the outer ankle in the heel, and then on the root to the popliteal in the hip, the upper ridge in the occipital bone, the upper head and the face in the nose. There are seven feet through the “branch meridian”: the evil on the ankle in the knee; after the bottom to the knot in the popliteal; the evil in the tongue; above the eyes on the Internet under the knot; after the armpit on the shoulder; under the armpit in the pelvis; inside the drain. Through the “main meridian”, Foot Shaoyang starts from the lateral ankle of the second finger and the secondary finger, goes to the head outside the knee outside the knee, reaches the knot in the basin before the knee, and the head at the sun, the forehead of the ear, on the knot to the chin. There are two branches of the “branch meridian”: the rabbit behind the upper auxiliary bone, and the outer canthus. Foot Yangming tendons “main classics”, from the middle three toes on the tarsal, up in the knee, to the rabbit knot in the leg, around the abdomen of the basin, the upper clip close the nose. There are five “branches”: the auxiliary bone in the knee, the spine; the external auxiliary bone in the Shaoyang bar, the combination in the Yin instrument, and the auxiliary bone in the sun to the outline.

3.2.2. The “Main meridian” and “Support meridian” structures of foot three yin meridian tendon

Foot too Yin tendon “main meridian”, starting in the inside of the large toe, in the medial malleolus, the straight bone in the knee (the medial malleolus), after the Yin in the leg, after the abdominal knot in the umbilicus, around the abdomen in the flank, after the chest. The tendons “branch” has two: the lower part in Yin; the inner part in the ridge. The foot Shaoyin meridian tendon “main meridian”, from under the small toe, under the bottom of the foot and with the Yin tendon, oblique under the medial malleolus, in the heel, and in the foot sun under the auxiliary bone, and find the Yin tendon to the Yin, the straight along the ridge clip, the upper pillow, close the sun. Foot little Yin meridian tendon “branch” is only one, around the Yin knot device. The “main way” of the “main muscles” starts from the large toe, between the medial malleolus, the tibia, the Yin in the Yin, and the tendons. There is only one “branch” of the tendon, that is, the Yin is tied in the Yin.

3.2.3. The “Main meridian” and “Support meridian” structures of Sanyang meridian tendons

The hand sun through the tendon “main classics”, knot in, the wrist around the arm, knot in the elbow sharp bone, elastic should be on the small finger, in the armpit after the ear, the knot in the chin. The hand sun has three tendon “branches”: after the armpit, around the shoulder blade, before the sun, the bone after the ear; into the ear; knot in the outer canthus. Hand Shaoyang through the tendon “main meridian”, the second finger end in the wrist, the upper arm on the elbow, the arch outside, shoulder over the neck, the hand sun. Hand Shaoyang tendons “branch” a total of two, evil people when the cheek into the tongue; before the ear, belong to the outer canthus, superior nod in the corner. The “main meridian” of the hand Yangming meridian starts from the end of the second finger, the arm on the wrist, the elbow, the upper arch on the shoulder, the upper neck along the cheek, the upper left corner of the sun, and the right nod under the collateral head. Hand Yangming meridian tendon “support meridian” only one, around the shoulder blade clip ridge.

3.2.4. The “Main meridian” and “Support meridian” structure of the hand Sanyin meridian tendons

Hand too Yin by the tendon “main classics”, began on the big finger, along this finger after the knot in the fish, the inch outside the cheap, up the forearm elbow, over the upper arm, into the armpit under the basin, before the shoulder, on the basin, under the chest, scattered heart, under the heart, into the season. Hand too Yin through the tendon “branch road” only one, its upper knot in the lack of basin. The hand Shaoyin meridian tendon “main meridian” begins with the inside of the small finger, the sharp bone, the upper elbow in the integrity, the armpit to cross too Yin, the breast in the chest, the arm in the umbilical cord. Hand less Yin tendons “support”, only 1, the arm in the umbilical cord. The hand Jueyin meridian tendon “main meridian”, from the middle finger, parallel sun tendon, knot in the elbow, the upper arm Yin knot in the arm. Hand Jueyin meridian tendon “branch” only one, evil into the armpit, scattered in the chest in the cardia.[18,19,20,21,22]

3.3 Functional analysis of the twelve meridian tendon

“The Master of Acupuncture and Moxibustion” says: “The way of heaven and earth is only Yin and Yang, and the wife’s body is only Yin and Yang”, which divides people near the middle of the body into Yin, and otherwise, Yang, so the twelve meridian tendons are named after Yin and Yang hands and feet. [23] The upper and lower longitudinal rows of the twelve meridian tendons are mainly distributed in the body surface and limbs, accompanied by the twelve meridians and closely associated with the twelve Pibu. “Medical Classic of the Yellow Emperor · Lingshu” contains: people first born, first into essence, essence and brain marrow, bone for dry, pulse for camp, tendon for just, meat for the wall, strong skin and long hair, grain into the stomach, pulse to pass, blood gas is line. It mainly shows that the tendon takes the flesh along the bone, absorbs nutrition through the stomach and stomach and protects the smooth passage, so as to achieve the passage of qi and blood and nourish the essence. [24] The Yellow Emperor said: “The muscle is strong, and the blood is full, so it is a good step”, which further shows that the human movement ability and the external muscle and the internal blood vessels are closely related. [25] “Su Wen · impotence theory” cloud: “the upper chest and abdomen, under the hip jiri, through the back and abdomen, on the head, so the cloud zong tendon main bundle

bone and benefit mechanism also”, indicating that “tendon” and the trunk of the joint link, directly affect the human movement, still is the force of the flesh, is and is born. [23,24,25].

Therefore, the twelve meridian tendons mainly have three functions: “harmony”, “tong” and “sheng”. One is “harmony”, veins and tendons between flesh and bones, nourishing the limbs and joints to protect their health; the second “tong” is, internal viscera, external muscles and bones, and human qi and blood to block external evil; and the third “sheng” is, turn, live and live.

3.4. Analysis of the application ability of the twelve meridian tendon

In the Jing · Lingshu · Great Doubt: The essence of muscle is restraint, gather the essence of muscle and blood, and tie with the pulse. The purpose is that the tendons and veins are connected with the skeleton, the same and tied, but each has its own positioning, so the twelve tendons show muscles movement, internal nerve conduction, and the human meridian opposites and unity. [21] When a certain part of the human body is inappropriate, the corresponding tendons will produce obvious pain and string pain. “Medical Classic of the Yellow Emperor · Lingshu” said: “the pain is the loser, and the acupoints are taken.” combined with the twelve meridian tendons, the tenderness to determine the acupoints belong to the tendons, and follow the meridian. [26]

Foot Sanyang meridian tendons and plantar flexion, knee flexion, knee extension, back extension and other movements are closely related. Foot sun tendons are mainly distributed in the dorsal side of the body, when problems occur, lead to stiffness in small toe feet or heel pain, popliteal spine tension, neck flexion, axillary and pelvic stiffness; foot sun tendons are mainly distributed on the body side, abnormal will lead to the fourth small toe stiffness, lateral and knee stiffness, popliteal and leg pain, tajiri and rib pain, pelvic neck distribution on the front of the body, abnormal foot toe and tibial tendon spasm, anterior stiffness and abdominal tightness and basin and cheek discomfort. The meridian tendons follow the medial side of the lower limbs and all gather in the Yin apparatus, so it is speculated that it is closely related to the liver, spleen and kidney. [27] The foot, the Yin meridian muscles spread in the chest along the inner side of the spine. In the problem, the large toe, medial ankle, knee, inexpensive, inexpensive, and the hip, and pain in the chest, radiating to the chest, and the spine, the chest and abdomen of the discomfort, the trunk front and back, knee, medial side, the pain is related to it. The hand Sanyang tendons are mainly placed in the upper limbs and the outside of the trunk, mainly responsible for the extension of all parts of the upper limbs. [28] When the sun on the hand is abnormal, the small finger and the elbow inside the cheap discomfort, and along the inside of the arm, the pain, the upper side of the hand on the tongue and the hand of the sun, when the problem, when the hand, in addition to the pain and discomfort, the shoulder can not lift, the neck can not turn into a typical occurrence. The opposite of the hand is mainly distributed in the upper limbs and the inside of the trunk, responsible for the flexion and withdrawal of all parts of the upper limbs. Hand Yin meridian jin dispersed over the diaphragm under the diaphragm, when abnormal will appear rib pressing or stomach; hand less Yin meridian jin breast chest in the umbilical cord, when the problem of the heart down, the chest, anxious elbow; hand Yin meridian jin in hand Yin scattered chest in the diaphragm, when the problem is visible chest pain or stomach phenomenon.

The application thinking of the twelve tendons is mainly based on “flow without flow, ring around”, through “pain for loss” as the starting point, and then combined with the output parts of the tendons to “to take”, so as to achieve the effect of “the pain stroke but stop”. To this end, the twelve Meridian tendons pay more attention to use the overall environment to think about local problems, and use pressure and other stimuli to dredge qi and blood, to achieve the effect of recovery.

4. Discussion on the Correlation Between Myofascial Meridian and Twelve Meridian Tendons

The myofascial meridian belongs to the category of fascia, which covers the human skeletal muscle and forms twelve obvious “muscle-tendon” continuums through stress links and nerve conduction when people do various activities. [16] The twelve tendons are closed to the meridian study, and the twelve lines are connected through the acupoints to penetrate the body. When the body is abnormal, the “naturally” along the tendons through the nearby acupoints will be improved. [17] In the development of human science, the tissue structure of human body has been greatly explored from micro, macro, ideological and other aspects. Modern medicine has found that myofascial and twelve meridian tendons originated in different periods and cultures, but they have significant correlation in terms of route, treatment ideas and clinical effects.

4.1. Follow the route

There is much overlap between the myofascial meridian and the twelve meridian tendons. Foot sun tendon and the back on the toe and the head, through the ankle plantar fascia-short-Achilles tendon, lower limb gastrocnemus-hamstring, trunk erector spinal muscle-lumbosacral fascia, and head occipital muscle-cranial fascia and other dynamic parts; foot sun tendon on the heel, hip, pillow, eye, respectively, after the root bone, femoral component-sciatic nodule-sacrum, posterior head ridge, frontal bone-eyebrow arch and other bone stations. [29] The foot also coincides with the peroneal muscles in the foot and ankle in the lateral line, the iliotibial bundle, tensor fascia lata, gluteus maximus, the lateral oblique and intercostal muscle, the sternocleidomastoid muscle in the head, and the lateral tendon, leg, tibia, etc. as the lateral fibular head, lateral tibial condyle, iliac crest, rib and other bony stations. [29] The anterior surface line and the route follow the tibialis anterior muscle, quadriceps, subpatellar ligament, rectus abdominis, sternal muscle, pectoralis muscle, scalp fascia and other dynamic parts; the foot, auxiliary bone, knee, abdomen are consistent with the anterior surface line, tibial tuberosity, patella, pubic nodule, sternal stem and other bony stations. [29,30]

Among the 19 acupoints, the hand sun tendon are located in the path of the deep line behind the arm; the hand sun tendon, around the arm, around the shoulder blade, sharp bone in the elbow, and the triangle behind the arm deep line, ulna stem, ulnar beak, humerus, medial edge of the shoulder blade, C₁₋₄The transverse process and other bone stations are the same; the hand sun tendon also coincides with the small and small fish international muscle group-ulnar collateral ligament, ulna fascia-triceps, rotator cuff muscle group, rhomboid muscle and levator scapularis. [31] The route of the hand is and the arm is the same, which is composed of the arm extensor group, lateral muscle septum, deltoid muscle, and trapezius-ligament dynamic parts; the elbow, around the arch, upper shoulder, neck, and the sun are the same as the outer epicondyle, deltoid muscle, scapula, acromion and occipital bone. [32] The main part

of the shoulder blade and neck is drawn through the muscle, the muscle involves the forearm extensor muscle, the quadziromoid muscle, the trapezius muscle, the posterior surface line and the posterior deep line complex of the posterior arm. [33]

Although there is no proof about the same as the foot and the spiral, after further comparison, it can be found that both start in the middle of the ankle, the lower limbs in the leg, the trunk cadres around the abdominal knot in the umbilical cord, and in the ridge; while the foot and the disease, “turning pain, twisting pain, on the umbilical cord to the two side pain, spinal pain” and other symptoms with the “rotation collapse” of abnormal spiral application. [34] There is a certain degree of similarity between the foot and the functional line, in which the foot tendons are incorporated into the foot center, the malleolus heel, the thigh, the ridge, and the sun line are the same as the functional line, femoral shaft, patella, femoral shaft, sacrum, pubic combination, so the foot may involve the adductor muscle, gluteus, fascia and other functional lines. [22,34] This line is similar to the bony stations from the anterior toe, the upper toe, and the anterior deep line of the anterior toe, the tibia, the superior condyle, the femur, and the scium; and the anterior deep line is closely related to all the meridian lines, compensating the abnormal meridian, which is obviously similar to the “collateral tendons”. [1,34]

Ten of the 11 acupoints are located in the deep line of the arm; along the big finger, forearm, elbow, upper arch, shoulder, chest, and the season, most horn, radial stem, radial protuberance, coracoid, and the 3-5 rib station; so the dynamic parts are also thenar muscle group-radial periosteal, biceps, pectoralis minor muscle-sternocial fascia. [31] The muscles of the hand and the hand are in parallel, but through the route of the middle elbow, the inner side of the upper arm, the upper chest, the junction and the cardia, the station and the lower rib, the flexor group, medial inter-rib muscle, chest fascia, and lumbar fascia are the dynamic part. [1,22] The hand Shaoyin tendon interacts with the hand yin tendon and the hand Yin tendon, so it may belong to the range of the deep line of the front arm and the arm front line, and coordinate the flexion of the finger, wrist, elbow and shoulder between the two Yin tendons. [22]

4.2. Treatment ideas

Although the twelve tendons and myofascial meridians have developed in different periods, different regions and different cultures, there are similarities between the treatment idea of “resolving the nodes, taking pain as acupoints” and “inactivating pain points”. “Lingshu · Jianjie true evil” cloud: “on the real and blocked, this must be added to the big meridian”, the twelve meridian tendons that the obstruction will form nodules or cable disease, which is consistent with the enhancement of myofibrils phosphorylation in myofascial. [35,36] “Lingshu · Meridian tendons” said: “The tendon knot is transverse obstruction”, elaborated that the junction disease will produce acid, distension, numbness and other pain, but also with the continuous release of acetylcholine in the nerve endings in the myofascial meridian, so that the abnormal contraction of local myofibrils compress the tissue living space, resulting in slow metabolism and increased sensitivity. [37,38] The myofascial meridian believes that the meridians of the human body cooperate to build a stable tension structure. When the shock pain point occurs, the local tension will be changed, and further deterioration will affect the relevant meridian tension balance and force other meridians to compensate, leading to the change of the overall tension structure. For this reason, the concept of myofascial meridian line believes that at the same time of fire fighting, the treatment should be conducted along the myofascial meridian line,

which is also consistent with the concept of “removing the pain as the acupoint, following the tendon”, that is, pain is blocked, it must first be treated from the place of life, but naturally and naturally. [36,39]

In addition to the similar therapeutic thinking, the myofascial meridian and the twelve meridian tendons also have theoretical complementarity. The myofascial meridian theory holds that “muscle-fascia” is the key to affect the state of the body and lead to injury, while the twelve meridian tendons believe that the Yin and Yang balance of “qi and blood-viscera” is the main causal relationship of the disease. [1,18] Therefore, the former clarifies the clear positioning of the human biological mechanism from the micro to the macroscopic with the micro biological structure, while the latter introduces the micro biological mechanism from the overall perspective of dialectical and treating nature.

4.3. Clinical effect

Because the myofascial line and the twelve tendon treatment ideas are similar, the clinical effect is also very close. myofascial meridian often uses myofascial release along the meridian physiotherapy and other ways, similar to the means of massage in the twelve meridian tendons. [40] In addition, it is found that myofascial release technology and acupuncture in the treatment of tension headache, myoriform muscle syndrome and chronic diseases can be alleviated, and the combined effect of the two is better. [41] It is known that myofascial release is a special treatment for myofascial pain syndrome, but it was found that acupuncture can also achieve good recovery results in subsequent studies. [42] Therefore, further studies have found that both acupuncture and myofascial release can promote the release of endogenous opioids, and can also achieve the effect of stimulating nearby connective tissue for remodeling. [38] Myofascial release is similar to the “point, press, push, wipe” and other techniques, even in the “look, touch, smell, ask” assessment of the patients. Through the treatment of twelve tendons, it can achieve the conditioning of “viscera-emotions-qi and blood” to achieve the effect of smooth combing of muscles and bones. The myofascial meridian theory also found that the myofascial release can improve the distal joints and regulate the mood. [43,44] A large number of clinical findings have been found that the curative effect of myofascial meridian is similar to that of the twelve meridian tendons, and the combined use will produce better effects. The mechanism of the two treatment is different, but the final effect is the same, which should be further confirmed in the subsequent basic disciplines.

5. Conclusions

Myofascial meridian was born on the basis of modern anatomy, and the twelve meridian tendons began with the traditional Chinese medical theory. Although there are obvious differences in the world view of the human body, with the development of integrated Chinese and western medicine, it is found that there are common routes, treatment ideas and clinical effects. Taking the curative effect as the foundation, we will find that they complement each other in theory and learn from each other in concept.

To sum up, in order to promote the development of a healthy China, on the basis of maintaining the original Chinese technology, it should be organically combined with emerging theories to realize the purpose of “dialectical reality, the heaven and the earth, and nature” in traditional Chinese medicine.

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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