



Great Truths are Always Simple - Acupotomy Therapy

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Abstract

Acupotomy therapy is a new clinical method mainly developed for the treatment of soft tissue diseases based on the acupotomy technique invented by Professor Zhu Hanzhang in 1976. The clinical practice is guided by a unique theory (the theory of needle-knife closed surgery, the theory of dynamic imbalance of chronic soft tissue damage, etc.). It is not only effective for chronic soft tissue injury diseases, but also for multi-disciplinary diseases such as internal, external, women, children, and facial features. The needle knife is a kind of micro-invasive treatment. It is micro-cutting deep into the soft tissue. The wound is small and the body can be repaired completely. Needle knife medicine is a young discipline that integrates development. It needs not only inheritance, but also more talents to innovate.

Acupotomy therapy is a new clinical method mainly developed for the treatment of soft tissue diseases, invented by Professor Zhu Hanzhang of the Acupuncture and Tuina Institute of Beijing University of Traditional Chinese Medicine. In the course of decades of development, acupotomy therapy has absorbed the essence of traditional Chinese acupuncture and moxibustion. At the same time, it combines the research results of modern medical anatomy, pathophysiology, surgery and biomechanics, reflecting the distinctive characteristics of Integrative Chinese and Western Medicine. Acupotomy therapy has been in existence for nearly 40 years since its invention. Through the research and exploration of many experts in traditional Chinese medicine, Modern medicine and Integrative Chinese and Western Medicine, it has formed a relatively complete theoretical and clinical treatment system, and its clinical application range has gradually expanded. It is limited to chronic soft tissue injury diseases and expands into internal and external diseases, women, children, and facial features. Statistics on relevant journal literature show that there are as many as 145 types of diseases that have been publicly reported for acupotomy therapy [1].

Acupotomy therapy has its acupotomy treatment tool. It guides clinical practice with unique theory (the theory of acupotomy closed surgery, chronic soft tissue damage dynamic balance imbalance theory, etc.), and has a new understanding of the pathogenesis of many diseases. This kind of therapy pays special attention to precise diagnosis and precise treatment. The clinical effect is very accurate. If the diagnosis is correct, the treatment is proper, sometimes it can stand up and sink, solve the stubborn illness that has plagued the patient for many years, and the treatment tool only needs a small needle. The acupotomy really reflects the Great Truths Are Always Simple. In a clinical research work done by the author [2], 17% of the 82 patients with cervicogenic headache who were included in the study were cured after one treatment, and did not relapse after 2 years of follow-up. The headaches of these patients are dysentery that has been plagued for many years and is ineffective.

What is a Acupotomy

What is a acupotomy? The definition given by Professor Zhu Hanzhang, the founder of the acupotomy, is that the medical instruments that penetrate the human body with the needle concept and can play the therapeutic role of the knife in the human body can be called acupotomy. Therefore, the acupotomy can be said to be a general term for a large class of treatment tools. There are 14 types and 39 kinds of commonly used needle knives. They are different in thickness and length, but they have a common feature. They are needles instead of needles, but they are also knives. Why do you say this? Because the acupotomy is also a slender shape like the acupuncture needle, it looks like a needle from a distance, but unlike the needle, the end is not a needle tip shape, but a flat blade. The blade can be a flat blade, a blade with a beveled edge or other shape, and a needle like a knife, so it is called a acupotomy. Like the acupuncture needle, the acupotomy also needs to penetrate into the human body to play a therapeutic role.

If you do not make a special design, the direction of the blade cannot be discerned after the

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tip penetrates the human body. In order to solve this problem, the doctor is treating it. In the process, the direction of the cutting edge is always known to avoid hurting the important structure of the structure, and it is easy for the operator to hold and operate. Professor Zhu Hanzhang designed a flat, flat-faced tool holder at the end of the acupotomy, and he also specially designed this shank into a flat gourd shape, meaning the hanging pot to help the world.

The acupotomy penetrates into the human body like a needle, thus minimizing damage to the human body. After the acupotomy enters the human body and reaches the treatment site, it can cut, loosen and peel off through the cutting edge of the acupotomy to play the role of "knife" to maximize the therapeutic effect. Because it is operated in the body, the operator's mastery of the human anatomy is crucial, so acupotomy therapy is based on the theoretical system of fine anatomy, stereo anatomy, dynamic anatomy and other theoretical systems. Because acupotomy therapy can solve some clinical problems, it has attracted the participation of tens of thousands of medical workers in various disciplines for decades. The clinical research and basic research work have made important progress, and the basic theory and clinical system of self-contained system have been formed. The diagnosis and treatment system, this is a brand new Chinese medicine department - "acupotomy medicine" [3].

The Origin and Development of Acupotomy Medicine

The birth of acupotomy therapy stems from a seemingly accidental event. As Professor Zhu gave a speech to students at the Chinese Academy of Medical Sciences Union Medical College, he said: "The acupotomy is first of all an inspiration, followed by a technique, and later developed into a theory, a theoretical system".

An old carpenter accidentally injured his hand with an axe while he was working. I went to the provincial capital hospital to film, although I did not hurt the bones, but the hands were swollen and severe. After treatment, the redness and swelling disappeared, and I could no longer flex and stretch. In the case of unsuccessful medical treatment, the old carpenter found the doctor Zhu Hanzhang in the spring of 1976. Professor Zhu held the hand of the old carpenter and made a landmark attempt after some thoughts. He took a No. 9 injection needle, knocked the leading edge flat, then pierced into the injured palm of the old carpenter, and used the needle to cut off the left and right sides. Half a minute later, he pulled out the needle and straightened the patient's palm and closed it. The old carpenter's hand can move! Three days later, the old carpenter actually took the axe freely!

This case inspired Professor Zhu, combined with the clinical and theoretical accumulation since he was a doctor, he realized that this needle-shaped micro-release tool can completely replace the "big lysis" of Modern medicine for some orthopedic diseases. Therefore, Professor Zhu designed a drawing to thicken the acupuncture needle, the front end is made into a blade shape, and the rear end is provided with a flat handle to grasp the position and direction of the blade operation. He called this new type of treatment tool that integrates Chinese medicine acupuncture needles with Modern medicine scalpels as an "acupotomy". Since then, the acupotomy was born, and at the same time, Professor Zhu's hard exploration of acupotomy therapy was opened.

In 1978, the new treatment method of acupotomy was listed as a key scientific research subject by the Jiangsu Provincial Health

Department. In 1980, the Jiangsu Provincial Health Department organized several major hospitals such as Jiangsu Provincial People's Hospital, Jiangsu Provincial Hospital of Traditional Chinese Medicine, Second Affiliated Hospital of Nanjing College of Traditional Chinese Medicine and Affiliated Hospital of Nanjing Railway Medical College to conduct strict clinical demonstration tests on acupotomy therapy. In 1984, an expert appraisal was passed, marking the official birth of "acupotomy therapy".

Since then, Professor Zhu Hanzhang has led his team to promote the promotion of acupotomy therapy. Acupotomy therapy has developed rapidly in China and has spread to dozens of countries on five continents. In October 2006, when Professor Zhu gave a lecture at the Changzhi Traditional Chinese Medicine Hospital in Shanxi Province, he fell to the podium due to excessive fatigue and sudden heart disease. Afterwards, he was driven by the ineffectiveness of driving the crane. For a time, the entire acupotomy industry fell into a trap Great grief. According to the usual logic, the death of the founder inevitably has a major negative impact on the development of the career he promoted during his lifetime, but like Professor Zhu Hanzhang once on the theme of "the development of acupotomy medicine and modernization of Chinese medicine" As mentioned in the Xiangshan Science Conference, it is impossible to deceive for a long time, and science will eventually flourish. Although Professor Zhu left, the charm of acupotomy therapy has not faded. In the past decade, the speed of the expansion of the acupotomy practitioners and researchers has never slowed down. More and more three-level A Experts and professors in hospitals, universities, and medical research institutions have been inspired by the charm of acupotomy therapy and have invested in this new field of medicine, which has made great progress in acupotomy therapy: clinically, the application range of acupotomy therapy has been expanding. The clinical curative effect has been widely recognized, and even in the treatment of certain diseases, the traditional Modern medicine surgical treatment method has been replaced. In the teaching aspect, the national higher education system has been incorporated, and the national high school Chinese medicine college acupotomy professional planning teaching materials have been published. From undergraduate, master's degree, doctoral to post-doctoral, the complete professional education system for acupotomy; in scientific research, it has been continuously funded by national-level scientific research projects, and basic research has been continuously deepened. In the industry, the Association of Acupotomy of the World Federation of Chinese Medicine Societies, the Acupotomy Medical Branch of the Chinese Medicine Association, and the grassroots acupotomy professional society of various provinces and municipalities have been established, which promoted the academic exchange and cooperation of acupotomy medicine [4].

Advantages of Acupotomy

The target tissue of needle knife is surface soft tissue, including deep and superficial fascia, muscle, tendon, ligament, bursa, tendon sheath, articular capsule, etc. Acupotomy therapy has unique advantages in more than 40 kinds of diseases, including head and face temporomandibular joint dysfunction, rhinitis. Cervical spondylosis of neck and shoulder (cervical type, nerve root type), cervical headache (cutaneous nerve compression type), periarthrits of shoulder, suprascapular nerve compression syndrome; medial epicondylitis of elbow and wrist, external epicondylitis of humerus, stenosing tenosynovitis of flexor digitorum tendon (trigger phenomenon or flexion/extension deformity), stenosis tenosynovitis of radius

styloid process, tenosynovial cyst, mild carpal canal Syndrome (no hypothenar muscle atrophy and/or muscle weakness), wrist dorsal ligament (extensor support belt) injury; scapular levator muscle injury, rhomboid muscle injury, serratus muscle injury, anterior serratus muscle injury, gluteal epithelial nerve entrapment syndrome, third lumbar transverse process syndrome, Supraspinal Ligament injury, interspinal ligament injury, iliopsoas ligament injury, lumbar fascia injury, etc. Sacroiliac joint dislocation; Piriformis syndrome of hip and buttock, sciatic tubercle bursitis, lateral femoral cutaneous nerve entrapment syndrome, gluteus maximus injury, gluteal middle muscle injury; quadriceps femoris injury of lower limb and ankle, biceps femoris injury, patellar ligament injury, infrapatellar fat pad injury, tibial collateral ligament injury, fibular collateral ligament injury, Iliotibial bundle injury, ankle collateral ligament injury (Acute or obsolete), plantar tunnel syndrome, Achilles pain (including plantar aponeurosis, calcaneal bursitis, subachilles fat pad injury, Achilles tendon peritendinitis), plantar flexor tenosynovitis, chicken eyes. Analysis of indications and dominant diseases of needle-knife therapy [5].

The Principle of Acupotomy Treatment

As mentioned earlier, acupotomy therapy has a good effect on many diseases, and even has an immediate effect on some "difficult diseases". This is because acupotomy therapy has made an important shift in the understanding of the disease. Professor Zhu Hanzhang proposed four major etiology and pathology theories: chronic soft tissue injury dynamic balance imbalance theory, bone balance hyperactivity imbalance theory, meridian electrophysiological line theory, and spinal zone etiology theory. At present, many scholars are studying these four theories to determine their scientific nature. Perhaps, for many difficult diseases, the golden key to cure them is in it.

Taking the theory of dynamic imbalance of chronic soft tissue injury as an example, Professor Zhu Hanzhang believes that the root cause of chronic soft tissue injury disease is the imbalance of human body dynamic balance. The tissues and organs of the human body, in a specific time and space, can be freely active called dynamic balance, and *vice versa*. There are four types of pathological factors that cause dynamic imbalance disorders, namely adhesions, contractures, scars, and blockages. After the body is damaged by various factors, it causes tissue necrosis, blood stasis, inflammation and oozing, followed by mechanization, adhesion, and scar formation, causing local soft tissue contracture. Once adhesions, scars, and contractions are formed, it is difficult to absorb and eliminate through self-regulating mechanisms. The relative movement of soft tissue in the body is destroyed, causing a dynamic imbalance. The presence of these pathological factors in the body is the main source of many symptoms of chronic soft tissue injury. Local soft tissue contracture can lead to increased local soft tissue tension. Abnormally increased local tension can compress many important tissues in the body such as nerves and blood vessels, or change the mechanical state of normal tissues, causing various diseases. Chronic soft tissue damage is prolonged, and local microcirculation is affected, resulting in blockage.

As for the occurrence of bone hyperplasia, he believes that the underlying cause is caused by the imbalance of the balance of power in the human body. The site of hyperosteogeny generally has soft tissue attachment, and the longitudinal axis of the epiphysis is consistent with the direction of the force of the soft tissue. This is because the human body is a eternal theme in life activities. "Moving" for a long

time or high intensity is prone to chronic soft tissue damage, resulting in muscle, ligament spasm, contracture, stress concentration at the point of attachment, the body's compensatory mechanism to strengthen the tendon and the strength of the attachment point, a large amount of calcium and phosphorus are transported, and over time, spurs or muscle calcification and ossification are formed. This is the bone hyperplasia caused by the abnormal tensile stress of the human body.

The theory of dynamic imbalance of chronic soft tissue injury and the theory of imbalance of bone balance have made the clinical application of acupotomy treatment of a large number of difficult soft tissue pain and bone and joint pain and other chronic pain diseases have a theoretical basis.

The "Ultra-Minimally Invasive" Features of Needle-Knife Therapy

The role of the acupotomy is that it is a kind of micro-invasive treatment. One of the characteristics is that it cuts the soft tissue and cuts into the soft tissue for micro-cutting. The wound is small and the body can be repaired completely (the cutting is not left under 3 to 4), 0.8 mm thick needle knife is probably the world's smallest scalpel. Through the morphological method in experimental research [6], it was found that the acupotomy not only does not form new scars, but also induces the formation of scars to normal tissues. We are following up the basic research. The second is to stimulate the nerve sheath and achieve analgesia with the effect of exceeding the inhibition. The target tissue of the acupotomy is the surface soft tissue, deep and shallow fascia, muscle, tendon, ligament, bursae, tendon sheath, joint capsule and the like. The key to the success of acupotomy treatment is firstly the indications for proper selection, and the soft-tissue lesions as the main pathological changes (including cervical and lumbar spondylosis, mainly refers to extra-spinal soft tissue lesions); secondly, the condition analysis is accurate, which soft tissue is the lesion organization? How to determine? The main reason is the tenderness reaction, combined with imaging examination to determine the diagnosis; the third is to familiarize with the anatomical structure, to ensure that the appropriate approach can be taken, not only to avoid the nerve vessels, but also to reach the target accurately; The fourth is to familiarize with the key factors affecting the rehabilitation of soft tissue diseases, such as tennis elbow, heel pain, attention to local stimulation, lumbar disc herniation need to limit activities, give adequate rest, cervical spondylosis, Cervicogenic Headache (CEH) Pay attention to sitting, sleeping, and using the computer.

Contraindications and Precautions for Acupotomy Therapy

Acupotomy therapy as a closed soft tissue minimally invasive lysis, although its trauma is extremely small, but if you do not understand the contraindications of the acupotomy, it will also cause damage to the patient, the following conditions are usually not suitable for acupotomy treatment of. At the time of all serious visceral attacks, patients should actively undergo medical treatment. After the condition is stable, they should choose an acupotomy treatment. In cases where there is skin infection or muscle necrosis at the site of the operation, acupotomy treatment may aggravate infection and muscle necrosis. There are redness, burning or swelling in the deep part of the operation site, there is redness and burning, which indicates that there may be acute inflammation in the local area, and the cause should be

actively identified and symptomatic treatment. If there is an abscess in the deep part, the acupotomy treatment can spread the abscess to the surrounding tissue, making the condition worse. In patients with hemophilia or other bleeding tendency, acupotomy treatment may cause difficulty in hemostasis at the treatment site and even form a hematoma. By the same token, patients taking anticoagulant drugs such as warfarin and aspirin should be prescribed to the doctor when they are treated with an acupotomy so that the doctor can properly handle it. Relatively weak, the acupotomy treatment is more irritating than acupuncture treatment. Although doctors usually take local anesthesia measures, they often have a certain degree of discomfort. Therefore, those with extremely weak constitution are not suitable for acupotomy treatment. Those with higher blood pressure may increase the blood pressure due to the stimulation of acupotomy treatment. Therefore, people with poor blood pressure control have a certain risk of receiving acupotomy treatment. Those who are afraid of the acupotomy treatment may be fainted by the acupotomy treatment in this case.

Acupotomy treatment as a minimally invasive treatment, although few adverse reactions or sequelae, but the following matters must be noted after acupotomy treatment. The acupotomy operation area should be kept clean and dry within 72 h after surgery to avoid pinhole infection. Avoid drinking alcohol and eating spicy foods to avoid aggravating congestion at the treatment site. Take full rest and do not engage in intense physical activity or heavy physical labor. If the patient finds local bruising, swelling, pain, or worsening of the condition or other abnormal conditions after treatment, he should contact the attending doctor promptly and properly handle it. There are some diseases in the clinic, such as stenotic tenosynovitis. Acupotomy treatment may indeed cure once, but most diseases require multiple treatments, and should be detailed to the doctor before receiving treatment.

Multidisciplinary Promotion of Acupotomy Medical Research and Development

In 2014, Professor Li Shiliang edited *Applied Anatomy and Clinic of Acupotomy*, the first book of *Applied Anatomy of Acupotomy* in nearly 40 years. Based on the clinical practice of Acupotomy and taking common diseases as the main line, the author not only elaborated the relevant theory, but also carried out detailed local anatomy of the operative site of Acupotomy and knife, and put the needle and knife into the level of approach, adjacent organizational structure, needle and knife loosening. Objectively displaying the organization of the target makes the performer know the anatomical structure under the needle clearly. On the one hand, it helps to improve the accuracy of operation and avoid iatrogenic injury; on the other hand, it also deepens the understanding of the mechanism of needle-knife treatment, and avoids penetration, speculation and deduction of needle-knife treatment, or even unprovoked association. The book covers more than 30 diseases related to anatomy, etiology and pathology, clinical manifestations and needle-knife treatment. Among them, there are not only the studies of common clinical diseases of needle knife, but also the exploration of needle knife treatment for difficult diseases such as hallux valgus and temporomandibular joint dysfunction. The book won the first prize of academic works of the Chinese Academy of Traditional Chinese Medicine in 2017, which is the highest prize for Acupotomy monographs since the birth of acupotomy therapy. Acupotomological works won the highest academic work award of the National Academy of Sciences, marking that Acupotomology has

entered a new stage of development, which means that the academic value and scientific connotation of acupotomology have been widely recognized by academia.

Needle knife is a closed operation that cuts, strips and dredges the lesion under non-visual conditions. Therefore, it requires technicians to have deep anatomical knowledge and exquisite technology. The traditional needle knife is "blind knife" operation. Because of the complex structure of human body, nerves, blood vessels and organs may be injured during the operation. Visualization of needle knife is the best way to enhance the safety of needle knife operation. With the development of ultrasound technology, the combination of ultrasound guidance and needle-knife therapy can not only clearly observe the anatomical structure to avoid vascular, nerve and organ tissue, reduce complications, but also distinguish the pathological tissue, assist diagnosis and precisely locate the therapeutic target, which is of great clinical value. At the same time, the teaching method of needle knife technology operation has been changed, and the objective, scientific and intuitive evaluation criteria of clinical practice have been increased. Professor Li Shiliang's team has produced a lot of achievements in clinical anatomy research of needle-knife therapy under the guidance of ultrasound. In recent years, the team has carried out anatomical research on ultrasound-guided treatment of lumbar disc herniation, lumbar spinal canal stenosis, radial styloid process stenosis tenosynovitis, and carpal tunnel syndrome and flexor digitorum stenosis tenosynovitis. Liu Zixiang [7] found that ultrasound-guided needle-knife release can accurately locate the root margin of the facet joint and the transverse process outside the foramen intervertebralis, and puncture the target at the shortest distance under the image. The image measurement results of ultrasound-guided needle-knife needle insertion provide a visual data basis for the clinical treatment of the lumbar region. Under anatomical observation, no obvious vascular and nerve injury was found around the path of releasing articular facet joints and foramen by needle knife, which provided anatomical basis for ultrasound-guided release of articular facet joints and foramen. Zhu Xinyue's [8] study used ultrasound-guided and anatomical methods to develop a specific approach for Acupotomy to release ligamentum flavum, providing a more accurate ultrasound-guided Acupotomy method for clinical release of ligamentum flavum, and providing a safe and reliable minimally invasive treatment for patients with lumbar disc herniation and lumbar spinal stenosis accompanied by thick ligamentum flavum. Anatomical study showed that ultrasound-guided needle-knife release of lumbar ligamentum flavum was successful through both transverse and longitudinal approaches. Statistical analysis showed that the transverse approach was superior to the longitudinal approach in ultrasound-guided needle-knife release of the Yellow brachia. Shen Yifeng found that ultrasound guidance can better identify the structure of styloid process of radius, reduce tendon damage during operation, and have certain advantages in identifying anatomical variation, which can improve the safety of needle-knife therapy. The success rate of ultrasound-guided method is higher than that of non-ultrasound-guided method. Ultrasound-guided method can observe the relationship between needle path and anatomical structure in real time, which is more suitable for clinical beginners. Zhou Qiaoyin found that the traditional four-point needle insertion method on human specimens is less safe and not recommended for clinical use. In contrast, ultrasound-guided needle-knife release of the transverse carpal ligament for carpal tunnel syndrome is safer and more accurate, which is recommended

for clinical application.

Summary

In the 1970s, Professor Zhu Hanzhang proposed needle-knife therapy. After more than 40 years of development, needle-knife therapy has become an effective and unique method for the treatment of chronic soft tissue diseases. The clinical value of needle-knife technique can be expressed in three sentences: first, the preferred treatment for some diseases; second, the indispensable clinical treatment for soft tissue diseases; and third, the important choice between medical treatment and surgical treatment. Needle-knife medicine is a new subject which needs to understand many disciplines, such as anatomy, physiology, orthopedics, sports medicine, surgery, manipulation, imaging and so on. At the same time, needle-knife medicine is a young subject. It needs not only inheritance, but also more talents to innovate.

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