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An ounce of prevention is worth a pound of cure. Benjamin Franklin

Notes from My Desk: Hip and Groin Injuries with the Utilization of Chinese Medicine

The purpose of this article is to explain the methodology of acupuncture and Chinese medicine in the treatment of groin and hamstring muscle injuries. There are three phases to consider in the treatment strategy. These are injury prevention, and the treatment of acute and chronic injuries. Each will be discussed within traditional Chinese medicine or TCM parameters.

It is often thought that acupuncture is only the insertion of needles at specific points targeted to treat a certain condition. In truth, this is only one of the modalities used in TCM. Other treatments commonly used include: electro-acupuncture, moxibustion, cupping, gua sha, auricular acupuncture, infrasound therapy, eastern pharmacology used both internally and externally, and tuina or Chinese massage. Each of these modalities will be discussed as to their appropriate use in the time line of an injury. The variety of needling methods used is also dependant upon the stage and severity of an injury.

Injury Prevention

Prevention of an injury is the best way to maintain optimal health. Range-of-motion testing, manual muscle testing and orthopedic exams offer insight as to where the problem is specifically located and what muscles may be imbalanced. By identifying weaknesses early on, injury can be prevented. Needling the motor point of certain muscles is effective in restoring balance. The motor point is the area of lowest resistance to electrical conductivity and the zone of innervation where the most electrical influence of the entire muscle can be obtained. (Callison 31) Needling the

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motor point of a shortened muscle group resets them and restores balance to the antagonist muscles that have become lengthened. A muscle that tested weak will test strong following this treatment. This ensures that the muscle will not be predisposed to injury. A series of acupuncture treatments are needed to maintain structural alignment. Clinically, it has been found that this acupuncture technique makes physical therapy and prescribed exercises more efficient.

Groin injuries can arise from hip adductor muscle shortening. If there is less than 60 degrees of movement with passive hip abduction, then it may be due to a shortened position of the adductor group (Callison 161) For treatment of the hip adductors, the motor points of the adductor longus, magus and brevis and the pectineus muscle are needed. These specific points are located in the belly of the muscle in the approximate area of the groin medial to the femoral artery.

Tight hamstrings tend to develop low back pain, and those with low back pain tend to develop tight hamstrings. It is theorized that tight hamstrings limit motion in the pelvis, so the motion gets transferred to the bottom lumbar motion segments and increases stress in the spine. Rehabilitation focuses on strengthening the muscles and stretching the hamstring muscles. (Callison 162) With passive hip extension, muscle shortening is indicated by less than 90 degrees of movement. For hamstring shortening the following motor points are needed: Biceps femoris, the short and long heads, semitendinosus and semimebranosus. These motor points have specific locations in the belly of the muscle in the back of the thigh.

For the treatment of lower extremity disorders it is effective to needle powerful huatuojiaji points located in the paraspinal muscles. Specifically, these points are located level with the lower border of the spinous process about one inch lateral to the spine. The appropriate spinal segment is needed in correspondence to nerve root deviation. These points have been shown to increase dinorphin and endorphin levels in the body, which decrease pain and inflammation and are beneficial in breaking the negative feedback loop of chronic pain. For extension of the hip, L5-S-2 is needed and for adduction of the hip, needling L2-L4 is beneficial. Since tight hamstrings have an impact on the low back, this is another reason to needle the lower lumbar paraspinals.

Gaining more muscle flexibility and warming up the muscle before activity are helpful to injury prevention. Internal herbs are utilized to build fluids in the body tissues. Moxa is an herb that is burned and applied either directly or indirectly over the skin.

The Chinese have researched thousands of herbs, and *Artemesia argyi* or Mugwort is the only herb that they have found that burns at the right degree and frequency that it can be used to remove obstruction and debris on a cellular level. This is the equivalent of using ultrasound in western medicine. Moxibustion therapy can be used on muscle spasms for relaxation. This is especially useful in conjunction with motor point therapy.

Acute Injuries

Before discussing acupuncture in the treatment of acute injuries, it is first necessary to establish an understanding of TCM's unique theory of energy flow in comparison to modern research. Our bodies as well as every atom have a positive and negative pole. Our bodies are electromagnetic and the healing mechanism of the body is electrical. The French researcher Mussat showed that our bodies have ionic potentials and that when fascia is stretched, it releases an electrical charge. There is research that has been recently done by Helene M. Langevin and her colleagues at the University of Vermont. Their hypothesis is: "The network of acupuncture points and meridians can be viewed as a representation of the network formed by interstitial connective tissue." They say that this hypothesis is supported by ultrasound images showing connective tissue cleavage planes at acupuncture points in normal human subjects. They show parallels between meridians and interstitial connective tissue. Both form a network throughout the body, connecting peripheral tissues to each other and to central viscera. Therefore, "a form of signaling mechanical, bioelectric, and/or biochemical is transmitted through interstitial connective tissue...may have potentially powerful integrative functions..." (Teeguarden) This explains why acupuncture points affect other parts of the body. They go on to say:

"A mechanism initially involving signal transduction through connective tissues, with secondary involvement of other systems including the nervous system, is potentially closer to traditional Chinese acupuncture theory, yet also compatible with previously proposed neurophysiological mechanisms."

"In summary, the anatomical correspondence of acupuncture points and meridians to connective tissue planes in the arm suggests plausible physiological explanations for several important TCM concepts summarized by Table 1. We propose that acupuncture needle manipulation (particularly at the traditional points) produces cellular changes that propagate along connective tissue planes."

Table 1 of their article proposed anatomical/physiological equivalents of some of the key concepts of traditional acupuncture theory which includes:

Meridians: Connective tissue planes

Points: Convergence of connective tissue planes

Meridian Qi: Connective tissue biochemical/bioelectrical signaling

Blockage of Qi: altered connective tissue matrix composition leading to altered signal transduction.

In acute injuries, the needling approach is to treat distally. According to TCM theory you can needle the opposite extremity of the site of injury and have a remarkable affect on reducing pain, swelling and inflammation. This is ideal for post-op or when the injury is bandaged and not readily accessible. Traditionally, internal herbs are used to quicken the blood, disperse heat and swelling, and stop pain. External herbal poultices are also used to decrease healing time. Auricular acupuncture is also a good treatment modality. The theory is that the entire body is mapped in the ear. The three embryological layers are still evident in the ear making it easy to understand how you can treat the entire body by needling the ear.

During the acute and sub-acute phase of an injury two to three treatments a week are necessary to increase the healing potential.

After the first stage of the injury, or sub-acute phase needling motor points is effective along with cupping, gua sha, tuina, and electro-acupuncture.

Cupping and gua sha follow the theory of vasopneumatic compression. When muscles are tight or injured, there is impeded blood flow. This can become stagnant and lead to further pain and become chronic. These modalites serve to create a vacuum to remove swelling, stagnant blood and cellular debris locally and move it up and out into circulation.

Electro-acupuncture is unique since the leads are connected to the acupuncture needle for a more direct polarity shift. A frequency of 6.8 hertz is beneficial for muscle support. In the book, The Body Electric by Dr. Becker, he states that the central body has a positive charge and the extremities have a negative charge. In chronic pain, the polarities are reversed. By placing the positive lead of an electrical stimulation unit on acupuncture needles on the trunk e.g. huatuojiayi points, and the negative lead on the

extremity involved you can reestablish polarity. This is a great pain elimination technique.

Chronic Injuries

Twenty-one days and beyond defines the third stage of an injury. Here, motor point therapy is still crucial to proper proprioceptive conditioning. All the modalities used during the sub-acute phase are useful here with the addition of moxibustion. Even if there are signs of inflammation, we categorize it as a cold inflammation. If there is still lingering aching pain, moxibustion heat therapy is very effective in eliminating pain. If heat signs are more predominant, then an alternating application of ice and heat every 5 minutes for 20 minutes ending with heat is helpful. Before training heat is used and after training cryotherapy is justified. There has been a lot of debate within TCM and the use of ice. It is best to adopt a conservative approach in the use of ice during the chronic phase of an injury. Chinese medicine theorizes that the idea is to bring balance to the body. When there is heat we use cold and vice versa. If there is not enough evidence of heat, then the application of too much ice can create an imbalance, This is, furthermore, believed to lead to chronic pain. It is better to use a cooling liniment for temporary relief. Five years of my own clinical experience working in a blended Eastern and Western medical setting have shown this to be true.

Infrasound therapy is also effective when applied locally. "...The low frequency sonic stimulation activates local tissue, moving stagnant fluids out of painful areas thereby drawing in fresh, oxygenated fluid to enhance the healing process, reduce swelling and relaxing tense muscles". "The history of this therapy came from research originating in China indicating that natural healers who practiced Qi Gong (the cultivation of one's own energy) therapy actually emitted low frequency sound waves from their hands". "Infrasonic refers to the range of sound waves below human hearing or 20 Hz". "The frequency of these sound waves varied in the range between eight to fourteen hertz and fluctuated randomly with every pulse". "Testing in hospitals and research facilities has shown that low frequency sound effectively increases vitality, accelerates healing, and strengthens immune function..." (Wang)

During the chronic phase of an injury, one to two treatments are needed for maintenance until the patient feels relief for longer stretches of time. The severity of the injury dictates how long therapy is needed. For grade one and two tears, 1-2

months of treatment is ideal, and at least 4 months for grade three tears or avulsions after surgical repair.

In review, acupuncture and its respective modalities have been used for thousands of years to safely treat trillions of people with minimally invasive techniques. Empirical herbal formulas used both internally and topically have an equally long history. They safely treat both internal and external disorders with minimal side effects. The theory behind TCM is to treat the root cause of the problem instead of masking symptoms. There is wisdom to this medicine that transcends the latest technology. The healing potential of the body is encouraged and maintained through the balance of the body via homeostasis.

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