

Current Status of Acupuncture Therapy for Scapulohumeral Periarthritis

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Abstract: *As a chronic musculoskeletal disease, scapulohumeral periarthritis is characterized by pain and limited joint movement, and there is no unified opinion on its pathogenesis, so its clinical treatment has its own characteristics. acupuncture treatment of scapulohumeral periarthritis is increasing in clinical research and plays an important role in treatment. This paper summarizes and analyzes the mechanism of different acupuncture methods in the treatment of scapulohumeral periarthritis and the clinical reports of acupuncture combined with different treatment methods in the treatment of scapulohumeral periarthritis in order to provide help for later clinical research.*

Keywords: Shoulder periarthritis Acupuncture Current Research Status Treatment.

1. Introduction

Periarthritis of shoulder is a common musculoskeletal disease in clinic. Its typical clinical manifestations are pain in different positions of the shoulder, limited movement of the shoulder and stiffness of the shoulder. The pathogenic factors are related to chronic musculoskeletal injury, physiological degeneration, external injury and operation, drug injury, diabetes, cervical spondylosis, hemiplegia, psychological factors and so on. In the traditional concept, rotator cuff injury, acromion impingement syndrome, scapulohumeral bursitis, coracoid process inflammation, biceps long head tendon and tenosynovitis, supraspinatus myositis and other diseases may cause symptoms similar to scapulohumeral periarthritis. The treatment of scapulohumeral periarthritis includes drug treatment, local injection of steroids, physiotherapy, manual release under anesthesia, arthroscopic release, nerve block, acupuncture and so on. Among these treatments, there is no absolute difference between the pros and cons. As a common clinical method for the treatment of scapulohumeral periarthritis, acupuncture therapy is based on the theory of acupuncture in traditional Chinese medicine. According to the principle of syndrome differentiation of meridians and causes, the therapy is treated by acupuncture at acupoints along meridians, local acupoints and special acupoints. The use of suitable needles to stimulate selected meridians and acupoints or muscles and tendons is aimed at regulating the local or systemic qi and blood flow, so as to achieve the effect of prevention and treatment of shoulder pain. According to the theory of traditional Chinese medicine, related pathogenic factors such as "wind, cold, dampness and blood stasis" can cause local muscle tension and adhesion of shoulder joint, resulting in local pain and limited joint activity. The common syndrome types of scapulohumeral periarthritis include wind-cold-dampness type, stasis type, qi and blood deficiency type, liver and kidney deficiency type [1]. In view of the above TCM syndrome types, acupuncture can play a role in dispelling wind and collaterals, dispelling cold and dampness, promoting blood circulation and relieving pain. Acupuncture treatment has evolved its own characteristics in the continuous development of acupuncture methods, which are listed as follows:

2. Acupuncture Therapy

2.1 Ordinary Acupuncture

Ordinary acupuncture is the most common form of acupuncture. Acupoints are selected as the first step of ordinary acupuncture, and appropriate acupoints are the key to the therapeutic effect. "shoulder three needles" are common acupoints, that is, Jianyu (LI15), Jianliao (SJ14) and Jianzhen (S19). Yang ran et al. [2] divided the pathology of scapulohumeral periarthritis into pain stage and adhesion stage, and the effective rates of acupuncture "shoulder three needles" for patients were 91.7% and 79.2%, respectively. Peng Junhua [3] and others selected "shoulder three needles" as the main acupoints, and selected acupoints according to different syndrome types on its basis. After acupuncture 30 patients were evaluated, the effective rate was 96.7%. Xue Dan et al. [4] selected three shoulder needles to take deep acupuncture and shallow acupuncture to explore the difference in the efficacy of different depth acupuncture in the treatment of scapulohumeral periarthritis pain, and concluded that deep acupuncture can better relieve shoulder pain and improve range of motion than shallow acupuncture. In addition, there are many acupoints with special effect on shoulder pain, such as Tiaokou (ST38), Jiankang point, Shoulder-pain point and Jin's shoulder three needles. It is also reported that the corresponding acupoints can be selected according to the location of shoulder pain and the limitation of movement. Yu reported that while acupuncture Ashi acupoint and shoulder three needles, medial shoulder pain can acupuncture Chize (LU5) and Shaohai (HT3), anterior shoulder pain can acupuncture Quchi(L11) and Hegu (LI4), shoulder lateral pain can acupuncture Jiantong point and Waiguan (SJ4), posterior shoulder pain can acupuncture Houxi (SI3) and Tianzong (SI11) [5].

2.2 Warm-needling Moxibustion

Warm-needling moxibustion, that is, ordinary acupuncture, combined with the infrared radiation produced by the burning of moxa leaves, can not only improve the metabolic activity and immune function of body cells, but also improve local microcirculation. Furthermore, acupuncture can promote the

circulation of local qi and blood and exert the effect of dispelling cold and dampness, thus the stimulation intensity of acupuncture can be increased. There are many reports that warm-needling moxibustion is effective in the treatment of shoulder pain. Zhou Xiaoping compared electroacupuncture with warm-needling moxibustion. The results showed that warm-needling moxibustion group was superior to electroacupuncture group in pain grading index, visual simulation score and existing pain intensity [6]. This shows that warm acupuncture moxibustion is more suitable for the pathological mechanism of scapulohumeral periarthritis and can warm the meridians and collaterals, thus enhancing the analgesic effect. In the study of 128 patients with scapulohumeral periarthritis conducted by Huang Kaiyun [7], the treatment group was treated with warm-needling moxibustion, while the control group was treated with electroacupuncture. The results showed that the total effective rate of the treatment group was 92.97%, while that of the control group was 80.47%. The difference between the two groups was statistically significant ($P < 0.05$). In addition, the recurrence rate was 37.50% in the treatment group and 59.38% in the control group.

2.3 Acupuncture Knife Therapy

Needle knife therapy was originally initiated by Professor Zhu Hanzhang of the Department of Orthopaedics and Traumatology through the improvement of traditional needles and combined with the theoretical basis of modern medicine, and used it to treat orthopedic diseases. A small needle knife is used to release the adhesion of muscles, ligaments and tendons around the shoulder joint to relieve local nerve stimulation caused by local soft tissue adhesion or compression. In addition, minimally invasive mechanical stimulation of small needle knife can accelerate the circulation of local blood and lymphatic vessels and accelerate the absorption of inflammatory substances, so as to achieve the purpose of relieving pain. Lu Kaixu mentioned in the report that needle knife release is better than acupuncture and manual release in the treatment of scapulohumeral periarthritis [8]. Needle knife release of soft tissue has a good effect in decompression and anti-inflammation, which may be related to needle knife therapy in releasing soft tissue and eliminating inflammation. Decompression and other aspects are stronger than acupuncture. In recent years, needle knife release under visual ultrasound guidance has been widely used. Ultrasound examination can visually determine the location and degree of soft tissue adhesion around the shoulder, provide navigation for needle knife release, and avoid important blood vessels and nerves, greatly reducing the occurrence of iatrogenic accidents. However, pain will inevitably be caused during needle knife surgery, which may lead to unnecessary shoulder reflex activity, thus interfering with the cutting effect of needle knife. Therefore, in clinical practice, diluted lidocaine and glucocorticoids are usually used for local anesthesia at the operating point to ensure a safer operation.

2.4 Exercise Acupuncture

exercise acupuncture is an acupuncture method of acupuncture combined with joint movement. based on the theory that joint soft tissue adhesion leads to dynamic

imbalance, the most painful point is found in the active or passive movement of the joint, and acupuncture is carried out on the pain point. at the same time continue to moderate movement of the joint. Compared with the traditional static acupuncture, this method is easier to reach the pain point. Some studies have also shown that afferent signals caused by exercise and external mechanical stimuli act in both directions in the central nervous system, resulting in analgesic effect [9]. Sun Da Ming in the comparative study of the efficacy of exercise acupuncture and conventional acupuncture in the treatment of scapulohumeral periarthritis [10], it was found that exercise acupuncture was more effective than conventional acupuncture in the treatment of scapulohumeral periarthritis. This method is not only efficient, but also easy to operate, so it has the potential to be widely popularized in clinic.

2.5 Fire Needle Therapy

Fire needle therapy is called "burnt thorn", which has the function of warming meridians and dispelling cold, dispelling wind and dredging collaterals, and encouraging qi and blood. Fire needle can stimulate local meridian qi and blood, promote blood circulation and metabolism, improve soft tissue congestion, edema, adhesion and calcification, and accelerate the recovery of soft tissue to relieve pain. Gao Yan et al. [11] found that in the treatment of 120 cases of scapulohumeral periarthritis, whether filiform needle therapy or fire needle therapy combined with filiform needle therapy, the latter was more significant in relieving shoulder pain. In the study of Zhang Jinpeng et al. compared with ordinary acupuncture, filiform fire acupuncture combined with routine acupuncture is more effective and helps to reduce the level of inflammatory factors such as TNF- α and IL-6 [12]. Luo Lan divided 62 patients with scapulohumeral periarthritis into fire needle observation group, common acupuncture control group and oral western medicine control group [13]. Among them, fire needle treatment group improved VAS score, joint range of motion and daily vivid ability score more obviously.

2.6 Electroacupuncture Therapy

electroacupuncture therapy is a method of operation by inserting filiform needles into specific acupoints and then using electroacupuncture instruments to introduce electric current through filiform needles. Electroacupuncture stimulation can expand the radiation range of acupuncture sensation and enhance the therapeutic effect of acupuncture on pain points. The mechanism of electroacupuncture analgesia shows that the effect of low frequency waveform electroacupuncture (2 Hz) on μ receptor and δ receptor can increase the production and release of enkephalin and endorphin, resulting in mild and lasting analgesic effect, while high frequency waveform electroacupuncture (100 Hz) can stimulate the spinal cord to release dynorphin and produce strong and short-term analgesic effect [14]. At the same time, the application of electroacupuncture with appropriate frequency at the general point can stimulate the rhythmic contractile activity of muscles, promote local blood circulation and promote the absorption of inflammatory substances, so as to relieve pain. Xu Xiao et al. mentioned that the use of electroacupuncture stimulation in shoulder acupoints has a good effect, and the patients in the

electroacupuncture treatment group are better than the ordinary acupuncture group in the visual analog score [15]. He Zushu in the treatment of 32 patients with scapulohumeral periarthritis, the effect of the combination of intermediate frequency therapy and electroacupuncture is more significant than that of intermediate frequency therapy alone [16]. The mechanism of electroacupuncture in scapulohumeral periarthritis is relatively clear, the operation is simple and the curative effect is definite, and it is highly accepted by patients in clinic, so it is worth popularizing.

2.7 Transient Therapeutic

Currently, Transient therapeutic is widely used in the treatment of soft tissue pain. This acupuncture method focuses on the pain point, using specially designed needles to perform a certain range of dispersion on the loose connective tissue under the skin at the pain point. At the same time, it involves active or passive overloading activities of the muscles related to the pain point, which is a new type of acupuncture method [17]. In MTr P theory, MTr P of shoulder joint and shoulder muscle injury such as supraspinatus muscle, deltoid muscle, biceps brachii muscle and levator scapulae muscle cause muscle fiber breakage and hinder nutrient supply in local blood. By repeatedly sweeping the muscle at the pain point to relieve local adhesion, promote the absorption of inflammatory factors, and then cooperate with shoulder muscle contraction or relaxation activities to promote blood reperfusion to the pain point. Han Weining took the transient therapeutic combined with shoulder joint activity as the observation group, and the ordinary acupuncture combined with shoulder joint activity as the control group. In the comparison of curative effect, the VAS score, ADL score and ROM score were significantly improved in the observation group [18]. This study shows that transient therapeutic is effective in the treatment of scapulohumeral periarthritis. However, the treatment will actively stimulate the pain point, and the operation takes a long time. If the operation is improper, it may aggravate the pain of the patient. Patients who try the treatment for the first time often experience resistance. Therefore, before using floating needle therapy, pacifying patients, winning their matching and relieving their tension can improve the therapeutic effect to a certain extent.

3. Acupuncture Combined with Other Therapies

3.1 Acupuncture Combined with Acupoint Injection

Acupuncture combined with acupoint injection is similar to acupuncture therapy, acupoint injection can also stimulate the stimulating effect of acupoints. The combination of the two has a significant effect on scapulohumeral periarthritis. Li Yingying through a comparative study, combined acupoint injection with conventional acupuncture therapy, and compared its curative effect with conventional acupuncture therapy alone, in order to evaluate the effect of treating scapulohumeral periarthritis. The results showed that the therapeutic effect of acupoint injection combined with routine acupuncture was better than that of single therapy, and the recurrence rate decreased after 30 days of follow-up [19]. Han Yongliang et al. Angelica injection was used for acupoint

injection combined with tendon acupuncture. By evaluating VAS score and patients' quality of life score, it was concluded that acupoint injection combined with tendon acupuncture therapy combined with tendon acupuncture was effective in relieving shoulder pain [20]. In addition to traditional Chinese medicine injection, vitamins, nerve growth factors and glucocorticoids can also be selected for acupoint injection.

3.2 Acupuncture Combined with Chinese Medicine

The combination of acupuncture combined with traditional Chinese medicine and traditional Chinese medicine is a very common method in clinical treatment. it customizes the appropriate oral Chinese medicine formula for patients according to the principle of syndrome differentiation of traditional Chinese medicine. Traditional Chinese medicine such as tonifying qi and nourishing blood, activating blood circulation, dispelling cold and relieving pain are often selected, but the formulation of traditional Chinese medicine is closely related to doctors' medication habits and level, and the curative effect is not stable. In addition, traditional Chinese medicine can directly act on the damaged tissue through the transdermal absorption machine to exert its therapeutic effect. but they can be treated by external application of plaster or fumigation of traditional Chinese medicine. Wang Ying in the study of warming acupuncture combined with traditional Chinese medicine plaster in the treatment of scapulohumeral periarthritis [21], the results show that this comprehensive therapy has a significant clinical effect. Acupuncture treatment combined with the application of traditional Chinese medicine can effectively reduce the duration of the course of treatment, and improve the efficacy of treatment, while maintaining high safety.

3.3 Acupuncture Combined with Tuina Massage

combination of acupuncture and massage in clinic, the use of massage techniques combined with acupuncture is more common. Through a series of massage techniques, such as point pressing, massage and rubbing, deep release of local tension and adhesion muscles can effectively stretch the muscles and collaterals and relieve spasms and pain. Then, the local pain area for accurate acupuncture treatment, the combination of these two methods will be more conducive to the relief of shoulder pain. Li Jun took acupuncture combined with massage as the study group and simple acupuncture as the control group, and concluded that the treatment effect of the study group was always 93.33%, and its VAS score was lower than that of the control group. The combination of acupuncture and massage can significantly enhance the therapeutic effect, improve the functional state of shoulder joint, relieve pain, effectively improve the quality of life of patients, and help patients with scapulohumeral periarthritis to achieve better rehabilitation [22].

4. Discussion

It is concluded that acupuncture therapy of traditional Chinese medicine is widely used in the treatment of scapulohumeral periarthritis, including warm acupuncture, exercise acupuncture, needle knife therapy, floating acupuncture therapy, fire acupuncture therapy and electroacupuncture therapy and so on. These treatments have shown significant

effects in improving the functional activity of the shoulder and relieving pain. However, at present, there is no evidence to show that a certain treatment is the best, so we adopt a combination of multiple therapies, such as acupuncture combined with acupoint injection, traditional Chinese medicine and massage, with complementary advantages to achieve better therapeutic results. In addition, in clinical research, due to the lack of a unified clinical efficacy evaluation scale, the evaluation process is often subjective, and lack of objective indicators as a basis. Therefore, it is necessary for clinical workers to make unremitting efforts to formulate the best treatment plan, standardize the treatment flow and establish evaluation criteria. In short, acupuncture therapy is accurate and effective through a large number of clinical practice, and is worthy of further research and development.

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