

# Comparison of Traditional Chinese Medicine Treatment and Western Medicine Treatment of Tennis Elbow (External Humeral Epicondylitis)

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**Abstract.** Tennis elbow is a chronic strain disease characterized by lateral elbow joint pain and limited movement. There are a variety of treatment methods, mainly consist of surgical treatment and non-surgical treatment, surgical treatment has quick effect, while non-surgical treatment has a low recurrence rate and is minimally invasive or non-invasive. Under different theoretical systems of TCM and Western medicine, non-surgical treatment methods are also different. Common treatment methods of traditional Chinese medicine include acupuncture, massage, traditional Chinese medicine fumigation, etc. Extracorporeal shock wave and drug use. This article reviewed and summarized many domestic and foreign literatures on the treatment methods of external humeral epicondylitis, and listed the similarities and differences in clinical treatment methods of external humeral epicondylitis under two different treatment systems of traditional Chinese medicine and Western medicine.

**Keywords:** External humeral epicondylitis; traditional Chinese medicine treatment; Western medicine treatment.

## 1. Introduction

Tennis elbow, the scientific name humeral epicondylitis, was originally named tennis elbow because tennis players often suffer from this disease. Today, the patient group is no longer limited to tennis players, and the prevalence rate of high-intensity laborers and housewives who work for a long time is gradually higher [1]. According to epidemiological statistics, the incidence rate of external humeral epicondylitis in the world is about 0.4%~0.7% [2], and the incidence rate of external humeral epicondylitis in China is about 2%, and the incidence is concentrated in middle-aged people aged 45-50 [3].

For the causes of tennis elbow, Chinese medicine and Western medicine have different explanations. Western medicine believes that the cause of LE is the repeated flexion and stretching of the common tendon of the forearm extender, resulting in the formation of chronic aseptic inflammation, resulting in local muscle tissue congestion, edema, calcification, and then affecting the exercise ability, joint stiffness, generally accompanied by pain and sensitivity change of the lateral elbow [4]. In the field of traditional Chinese medicine, external humeral epicondylitis belongs to "elbow strain", which is caused by the invasion of wind, cold and dampness and other evil factors, or the blockage and damage of meridians caused by long-term strain. If not, pain [5]. For this disease, there are many therapeutic methods, which are mainly divided into surgical treatment and non-surgical treatment [6]. For patients with long onset, repeated onset, severe response and long-term non-surgical treatment ineffective, surgical treatment can be performed, while for patients with mild symptoms and early onset, non-surgical treatment can be used.

Despite the relatively high incidence of LE and the large number of susceptible patients, there is a lack of effective treatment options [7, 8]. Although traditional Chinese medicine and modern medical treatment methods have their own advantages and therapeutic effects, they are difficult to be unified and shared due to their different theoretical systems. This article collects many literatures at home and abroad in recent years, and summarizes and compares the research progress of Western medicine treatment of external humeral epicondylitis as follows.

## 2. Traditional Chinese Medicine treatment methods and Examples

In the theory of traditional Chinese medicine, the incidence of external humeral epicondylitis has two reasons. The first is because of the blockage of the muscles, the second is by the invasion of wind cold. And the traditional Chinese medicine treatment methods such as acupuncture, cupping, moxibustion, therapy, massage, traditional Chinese medicine fumigation and other methods can well relieve symptoms or treatment. For example, Zhang Yang and Zhang Jianluo used floating needle therapy to treat external humeral epicondylitis. 64 patients with external humeral epicondylitis were selected and randomly divided into the treatment group (with floating needle therapy) and the control group (with block therapy) with 32 patients each [9]. After treatment, the total effective rate of the treatment group was 96.88%, and the total effective rate of the control group was 81.25%. The recurrence rates of the treatment group and the control group were 0% and 21.88%, respectively. After 12 months of treatment, VAS score in the treatment group was significantly lower than that in the control group, MEPS score in the treatment group was significantly higher than that in the control group. Floating needle therapy can increase local blood flow and improve the state of muscle ischemia and hypoxia through subcutaneous scavenging and reperfusion, so as to achieve the purpose of pain treatment [10, 11]. For example, Wang Jianping treated external humeral epicondylitis with supination extension by massage method [12]. 74 patients with external humeral epicondylitis meeting the inclusion criteria were selected and randomly divided into the observation group (using supination extension manipulation) and the control group, 37 cases each. The treatment results were as follows: 11 cases were cured in the observation group, 18 cases were significant, 5 cases were effective and 3 cases were ineffective. The VAS score of patients in the treatment group was significantly lower than that of the control group, and the MEPS score of patients in the treatment group was significantly higher than that of the control group.

Massage can relax local muscles, release local trapped nerves, relieve ligament fascia contracture, thereby improving blood circulation and promoting absorption of aseptic inflammatory substances, while acupuncture can stimulate muscles, increase blood circulation, dredging muscles. Different traditional Chinese medicine treatment methods are combined, and the treatment effect may be better. For example, Yang Hongxin treated external humeral epicondylitis with warm acupuncture combined with massage, and included 70 patients who met the standard external humeral epicondylitis, and randomly divided them into observation group (control group based on the addition of warm acupuncture combined with acupuncture) and control group (massage treatment) [13]. After treatment, the elbow joint function score increased more significantly and VAS score decreased more significantly. For example, Aimin Lu et al. treated external humeral epicondylitis by floating needle therapy combined with traditional Chinese medicine fumigation [14]. They selected 64 patients with external humeral epicondylitis, 32 cases in each of the control group (using traditional Chinese medicine decoction fumigation therapy) and the experimental group (adding floating needle therapy on the basis of the control group). Finally, Mayo elbow joint function scoring system and pain simulation scoring method were referred to, combined with elbow pain. Functional activity improvement and VAS score changes before and after treatment were evaluated. Compared with the control group, the modified Mayo elbow function score increased more significantly in the experimental group after treatment, and the VAS score decreased more significantly, which proves that the combination of different TCM treatment methods can produce better curative effect.

## 3. Methods and examples of Western medicine treatment

Western medical treatment can be divided into surgical treatment and non-surgical treatment [6]. Surgical treatment is generally open surgery or arthroscopic surgery, through cleaning the lesion, stripping the muscle or cutting the trapped nerve vessels to achieve the therapeutic purpose, with an excellent and good rate of 85.7% [15]. For example, Wang Junliang et al. used radiofrequency ablation under arthroscopy to treat external humeral epicondylitis, and the final treatment results showed that the VAS score, DASH score and TEFS score of patients were significantly decreased,

while the elbow joint mobility function was significantly improved. Non-surgical treatment has the advantages of less trauma, obvious curative effect, and low recurrence rate. Treatment methods such as local external fixation, local closure, physical therapy, extracorporeal shock wave, and drug administration also have significant curative effect. Local external fixation uses elbow pads and wrist pads for local immobilization, which allows injured tissues to rest and recover, reduces their tension, promotes ligament repair, thereby reducing pain and accelerating inflammatory absorption [16]. In most of the bracing methods, the elbow can be bent 90 degrees, and the affected limb can be suspended in front of the chest through a triangle towel. If the symptoms are obvious, the affected limb can be fixed by a forearm plaster support. For example, Chen Jun [17] treated 26 cases of external humeral epicondylitis with cardboard external fixation combined with tendon injury manipulation, and the treatment results were excellent in 18 cases and good in 8 cases. But at the same time, simple local external fixation has a long course of treatment and slow effect.

Physical therapy is more common in clinical practice, usually through light therapy, heat therapy and infrasound treatment, the mechanism of action is through the external stimulation of physical factors to increase blood flow, relax muscles and ligaments, eliminate aseptic inflammation to achieve the purpose of treatment. For example, Shi Lijun [18] used microwave combined acupuncture and infrared rays to treat external humeral epicondylitis, with a total effective rate of 100% and an excellent rate of 85.7% after ten treatments. For example, Fan Huayu [19] simultaneously performed local shockwave therapy on the pain points of the external humeral epicondyle and the radial extensor group of the affected side, respectively. The treatment results showed that the therapy could significantly relieve the pain symptoms of the patients, and the VAS score, DASH score and TEFS score were significantly decreased, and the elbow joint function was improved, which proved its efficacy.

#### 4. Comparison between the two

Because of the different theoretical systems of traditional Chinese medicine and Western medicine, the pathological explanations of external humeral epicondylitis are also different. For example, the concept of vein in traditional Chinese medicine is difficult to explain in modern medicine. Compared with in vitro conservative treatment of traditional Chinese medicine, surgical treatment has the advantages of quick and obvious effect, but it can also cause trauma. However, in terms of the mechanism of action, the treatment methods under the two theoretical systems do have similarities. For example, moxibustion is used to heat and fumigate the diseased part through the heat generated by burning wormwood leaves, which has the same mechanism as wax therapy in physical therapy. Through heat conduction, it stimulates muscles and promotes blood circulation to increase blood flow rate. Anti-inflammatory and analgesic effects [20]. Another example is the traditional Chinese massage and extracorporeal shock wave therapy of modern medicine [21], which can promote blood circulation, enhance metabolism, relax muscles and release adhesion through external force or mechanical shock wave acting on the treatment site.

In addition, the combination of multiple therapies, combining traditional Chinese medicine treatment with modern medical treatment, has a significantly better therapeutic effect than a single treatment [22]. Such as ordinary low-frequency electrotherapy, which acts on the superficial surface but has poor therapeutic effect on the deep muscle, acupuncture can act on the deep muscle, but cannot produce continuous stimulation, and the scope of action is limited. The emergence of electroacupuncture combined the advantages of the two. For example, Ma Chi [23] treated external humeral epicondylitis by meridian massage combined with shock wave. A total of 60 patients with external humeral epicondylitis were selected and randomly divided into the control group (ordinary acupuncture plus shock wave treatment) and the experimental group (acupuncture plus shock wave treatment) with 30 cases each. VAS score decreased more significantly in the experimental group, PFG and MEPS were significantly higher than those in the control group, and the clinical effective rate was 93.33% (80% in the control group). For example, Xiao Shi, Wu Zhimin et al. [24] treated

external humeral epicondylitis through dynamic joint loosening combined with Chinese medicine fumigation. According to the inclusion criteria, 80 patients with external humeral epicondylitis were selected and randomly divided into the control group (Chinese medicine fumigation) and the experimental group (dynamic joint loosening was added on the basis of the control group), 40 cases in each group. The treatment results showed that the VAS score decreased more significantly in the experimental group, and the MEPS score increased more significantly.

## 5. Conclusions

There are many treatment methods for external humeral epicondylitis. Although the theoretical system and pathological interpretation of traditional Chinese medicine and Western medicine are different, the treatment methods have their own advantages. For patients with long onset and obvious symptoms, surgical treatment is still recommended. Some of the new treatments, such as extracorporeal shock wave therapy, have also achieved good therapeutic effects in clinical practice. Through analysis and reference, it is found that most of the treatments for external humeral epicondylitis are combined with multiple treatment methods, and clinical trials have begun to try the combination of traditional Chinese medicine and modern medical treatment, which has a significantly better effect than single treatment and can reduce pain. Increase elbow joint motion, which has become a new direction for the development of external humeral epicondylitis treatment.

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