

# Clinical observation of Long's bone setting technique combined with Fu's subcutaneous needling for cervical spondylotic radiculopathy

Lihui Yu<sup>1,\*</sup>, Jiaen Yang<sup>1</sup>, Haizhu Fu<sup>2</sup>

<sup>1</sup>Department of TCM, The People's Hospital of Gaoming District of Foshan City, Foshan, China

<sup>2</sup>Department of Emergency, The People's Hospital of Gaoming District of Foshan City, Foshan, China

\*Corresponding author

**Abstract:** To observe the clinical efficacy of Long's bone setting technique combined with Fu's Subcutaneous Needling in the treatment of cervical spondylotic radiculopathy. Sixty patients with cervical spondylotic radiculopathy who visited the hospital from January 2022 to June 2023 were randomly divided into an observation group and a control group, with 30 cases in each group. The control group received Fu's Subcutaneous Needling; On the basis of the control group, the observation group was treated with Long's bone setting technique. Observe the changes in pain and cervical spine function scores before and after treatment in two groups to evaluate clinical efficacy. After treatment, both groups showed improvement in pain and cervical spine function compared to before treatment; Compared between groups, although the observation group did not have an advantage in pain relief, it was superior to the control group in terms of improving cervical spine function and overall clinical efficacy. The combination of Long's bone setting technique and Fu's Subcutaneous Needling has significant clinical efficacy in the treatment of cervical spondylotic radiculopathy and is worthy of promotion and use.

**Keywords:** Cervical spondylosis radiculopathy; Long's bone setting technique; Fu's Subcutaneous Needling

The main clinical symptoms of nerve root type cervical spondylosis radiculopathy (CSR) are recurrent neck, shoulder and back pain, upper limb numbness and radiation pain along the nerve root innervating area on one or both sides<sup>[1]</sup>. The incidence rate of various types of cervical spondylosis is high, accounting for 50%~60%<sup>[2]</sup>. At present, non-surgical treatment is the preferred treatment for CSR. External treatment of TCM, represented by acupuncture and moxibustion and massage, has been widely used, but there are still shortcomings of poor efficacy of a single method or long treatment cycle<sup>[3-4]</sup>. Therefore, it is of great practical significance to explore the best combination of conservative treatment. This observation explores the clinical efficacy of Long's bone setting technique combined with Fu's Subcutaneous Needling in the treatment of CSR.

## 1. Materials and Methods

### 1.1 General information

Sixty patients with cervical spondylotic radiculopathy who visited our outpatient department from February 2021 to January 2022 were selected as the study subjects. They were randomly divided into an observation group and a control group, with 30 cases in each group, using a random number table method. Among them, there were 12 males and 18 females in the observation group; Age range from 26 to 65 years old, with an average age of (47.70±10.11) years; The course of the disease is 2-12 weeks, with an average of (5.73±1.16) weeks. There are 14 males and 16 females in the control group; Age range from 27 to 68 years old, with an average age of (50.57±11.62) years; The course of the disease is 1-14 weeks, with an average of (5.60±1.99) weeks. There was no statistically significant difference in baseline data between the two groups of patients ( $P>0.05$ ).

### 1.2 Inclusion criteria

- ① Meets the diagnostic criteria for cervical spondylotic radiculopathy<sup>[5]</sup>; ② Those who can

complete the entire course of treatment and have good compliance; ③ Those who voluntarily participate in this trial and sign the Patient Informed Consent Form.

### **1.3 Exclusion criteria**

① Patients with concurrent external cervical lesions (such as thoracic outlet syndrome, carpal tunnel syndrome, and shoulder peri-arthritis); ② Suspected or confirmed cervical and spinal canal tumors; ③ Blood disease patients with bleeding tendencies; ④ Patients with bone and joint tuberculosis, osteomyelitis, and elderly osteoporosis; ⑤ Developmental spinal stenosis; ⑥ Patients with severe heart and lung diseases; ⑦ Individuals with severe local skin damage or skin diseases.

### **1.4 Treatment methods**

The control group received Fu's Subcutaneous Needling: According to Professor Fu Zhonghua's searching for muscles with one or more myofascial trigger points can be done by touching muscles such as the head muscles, trapezius muscles, sternocleidomastoid muscles, and scalene muscles, which are considered the main affected muscles of this disease. After identifying the affected muscle, determine the needle insertion point, requiring the needle tip to point towards the affected muscle and insert the needle 4-5 cm away from the surrounding area. During the operation, guide the patient to sit down and determine the needle insertion point. Regularly disinfect the skin around the needle insertion point. The operator uses their left hand to tighten the skin at the needle application point, and their right hand to hold the needle insertion device tightly against the skin and slightly press it down. During the needle insertion process, keep the needle tip upward, avoid blood vessels, and eject the needle. After removing the needle insertion device, hold the needle in your right hand and slowly insert it into the superficial fascia layer; The operator selects the tip of their right thumb as the fulcrum and continuously scans at a constant speed, with a frequency of 50 times/min, to expand the scanning range as much as possible; After the treatment is completed, the operator pulls out the stainless steel needle core, fixes it with tape, and leaves it for 6 hours before pulling out the remaining soft tube. 15 minutes each time, once every other day, for a total of 2 weeks of treatment.

On the basis of the control group, the observation group added Long's bone setting technique: ① Based on the three-step localization diagnosis method of symptoms, palpation, and imaging examination, the patient's diseased vertebral body and small joint displacement were determined, and operations such as low head shaking method, side head shaking method, head up shaking method, and manual pulling and extension traction were selected to restore the abnormal stress balance of the small joint. ② Course of treatment: Treat once every day for 14 consecutive days, a total of 7 times.

### **1.5 Observation indicators<sup>[6]</sup>**

① Pain score: Visual Analog Scale (VAS) was chosen to record the patient's pain before and after treatment: 0 points were in a painless state, and 10 points were unbearable pain. ② Functional score: Select the Cervical Dysfunction Index (NDI) to evaluate the cervical spine movement function of patients before and after treatment from multiple perspectives: single item scores range from 0 to 5, with a total of 10 items. The higher the score, the more severe the symptoms.

## **2. Statistical methods**

SPSS 20.0 software was used for analysis, independent sample t-test was used for inter group comparison, and paired T-test was used for intra group before and after comparison; Counting data is represented by examples and analyzed using chi square and rank sum tests.  $P < 0.05$  indicates a statistically significant difference.

### 3. Result

#### 3.1 NDI

Table 1: Comparison of NDI scores between two groups

group	n	Before	After	D-value
Control group	30	32.8±6.4	25.3±3.1#	8.7±2.1
Observation group	30	34.3±4.7	20.1±4.2##*	14.1±3.9

Compared with before treatment in this group, #  $p < 0.05$ ; Compared with the control group after treatment, \*  $p < 0.05$ , as shown in Table 1.

#### 3.2 VAS

Table 2: Comparison of VAS scores between two groups

group	n	Before	After
Control group	30	5.5±1.9	2.6±0.7#
Observation group	30	5.4±2.1	1.8±0.4##*

Compared with before treatment in this group, #  $p < 0.05$ ; Compared with the control group after treatment, \*  $p < 0.05$ , as shown in Table 2.

### 4. Conclusions

Western medicine believes that the pathogenesis of CSR is complex, mainly related to factors such as mechanical compression and inflammatory stimulation<sup>[7]</sup>. Local bone and soft tissue strain and degeneration of the cervical spine cause nerve roots to be mechanically compressed and develop, leading to sustained chemical stimulation and inflammatory reactions in the local area, resulting in nerve root congestion and edema, and causing nerve root pain<sup>[8]</sup>. Therefore, relieving or reducing nerve root compression, improving local circulation and metabolism, and promoting inflammation absorption are the key to CSR treatment. At present, conservative treatment occupies a mainstream position in the management of cervical spondylotic radiculopathy, and two or more therapies are often used in combination in clinical practice to enhance the therapeutic effect<sup>[9]</sup>.

Traditional Chinese medicine believes that this disease is often caused by the invasion of wind, cold, and dampness, or aging and physical decline, or acute injury that cannot be treated, or chronic labor injuries, resulting in local disharmony of qi and blood in the neck muscles and bones, as well as obstruction of qi and blood in meridians such as the Du meridian, foot sun bladder meridian, etc<sup>[10]</sup>. If not, pain will occur. Therefore, local acupuncture at Fengchi and Jiaji points is chosen to promote qi circulation, promote blood circulation, and relieve pain. The use of electroacupuncture combines the dual therapeutic effects of pulse electrical stimulation and traditional acupuncture, better alleviating muscle spasms, promoting the absorption of inflammatory substances, and helping to improve nerve root edema and nerve function recovery. The Five Lines, Five Zones, and Thirteen Points Massage Method can promote qi and blood circulation, unblock meridians, relieve spasms and pain in the treatment of CSR<sup>[11-12]</sup>. It is beneficial for relaxing tense and spasmodic muscles, regulating local blood circulation and repairing damaged soft tissues. Its effect has been widely proven. However, simple acupuncture and massage only focus on the relaxation and unclogging of muscles and soft tissues, and clinical treatment requires a long course of treatment and symptoms are prone to recurrence.

According to the theory of meridians and tendons, "tendon out of groove and bone dislocation" is an important pathological link that runs through the entire process of cervical spondylosis. The Long's Orthopedic Technique can effectively correct small joint disorders, restore normal anatomical structure, rebuild the "muscle bone balance" state of the neck, and restore the biomechanical balance inside and outside the spine. It plays an important role in the treatment of CSR<sup>[13]</sup>. This technique is highly targeted and can correct misaligned cervical vertebral joints and hooked vertebral joints, which is beneficial for tissue edema and inflammation around nerve roots to subside, thereby quickly alleviating clinical symptoms.

Fu's Subcutaneous Needling is an application form of suitable techniques in traditional Chinese medicine, and it is a new type of acupuncture therapy evolved from traditional acupuncture and moxibustion therapy combined with modern diagnosis and treatment technology<sup>[14]</sup>. Compared with

conventional acupuncture methods, Fu's Subcutaneous Needling has shorter stimulation time for specific points, but longer needle retention time. The location of acupoint selection and needle application should be relaxed, requiring only accurate pain points. The needle should be inserted at 6-10cm near the pain points. The needle tip does not reach the pain point, and does not require qi acquisition. The practical operation is more convenient, The technical requirements for medical personnel are relatively low, making it more suitable for clinical promotion and application<sup>[15-16]</sup>. Fu's Subcutaneous Needling often use the scanning and dispersing technique, which is based on the special structure of skin connective tissue, that is, the mechanism of sensitivity to piezoelectric effect by utilizing the spatial arrangement of matrix spiral molecules in connective tissue. The triggering of this piezoelectric effect is also the reason for the effectiveness of Fu's Subcutaneous Needling. By scanning and dispersing the pain points, the analgesic effect can be quickly exerted, and the more scanning, the better the clinical efficacy<sup>[17]</sup>.

The observation results showed that there was a significant improvement in the evaluation of pain and cervical spine function in both the observation group and the control group after treatment compared to before treatment; There was no statistically significant difference in VAS pain scores between groups ( $P>0.05$ ), while there was a statistically significant difference in NDI cervical function scores ( $P<0.05$ ), indicating that the combination of the two has certain advantages in improving neck functional activity. The combination of Dragon's Orthopedic Technique and Fu's Subcutaneous Needling integrates the advantages of regulating qi and blood, softening meridians and tendons, and promoting joint function. It can effectively improve the clinical cure rate of CSR and is worthy of promotion and application in clinical practice.

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