

## Tuina treatment in cervical spondylosis

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### Abstract

Cervical spondylosis is a common, chronic degenerative condition of the cervical spine that affects the vertebral bodies and intervertebral disks of the neck as well as the contents of the spinal canal. Common clinical syndromes associated with cervical spondylosis include cervical pain, cervical radiculopathy and/or myelopathy. This study shows the main principles, indication and side effects of tuina in cervical spondylosis treatment; tuina is one of the external methods based on the principles of Traditional Chinese Medicine (TCM), especially suitable for use on the elderly population and on infants. While performing Tuina, the therapist concentrates his mind, regulates his breathing, and actuates the Qi and power of his entire body towards his hands. For a better result is recommended to try to combine acupuncture with tuina treatment. Tuina can help relieve the pain associated with spondylosis. After this kind of treatment, the symptoms produced by irritated nerves and sore muscles can find some relief. Tuina helps patients with cervical spondylosis regain muscle control, nerve function and flexibility, all through the restoration of the life force flow.

**Key-words:** *cervical spondylosis, tuina, traditional chinese medicine.*

### Rezumat

Spondiloza cervicală este o patologie comună, degenerativă a coloanei cervicale care afectează corpurile vertebrale și discurile intervertebrale ale regiunii cervicale și conținutul canalului vertebral. Sindroamele clinice comune asociate spondilozei cervicale sunt cervicalgia, radiculopatia și/sau mielopatia cervicale. Acest studiu evidențiază principiile generale, indicațiile și efectele secundare ale aplicării tratamentului prin tuina în spondiloza cervicală; tuina este una din metodele externe care se bazează pe principiile Medicinii Tradiționale Chineze (MTC), aplicabilă în special populației vârstnice sau copiilor. În timpul aplicării tuinei, terapeutul își concentrează gândirea, își regularizează respirația și își concentrează Qi-ul și puterea întregului corp înspre propriile mâini. Pentru un rezultat mai bun este recomandată asocierea acestei metode cu acupunctura. Prin tuina se poate obține ameliorarea durerii asociate spondilozei cervicale. După acest tip de tratament, simptomele determinate nervii iritați și mușchii afectați sunt ameliorate. Tuina ajută pacienții cu spondiloză cervicală să își recâștige controlul neuro-motor, flexibilitatea, acestea fiind datorate restaurării fluxului energetic vital.

**Cuvinte cheie:** *spondiloză cervicală, tuina, medicină tradițională chineză.*

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## Introduction

*Cervical spondylosis* is a disorder caused by abnormal wear on cervical vertebrae with degeneration and mineral deposits in the attachments of the cervical vertebrae, causing pain and weakness in the neck and arm, and changes in sensation [1,2].

Pathogenesis of the cervical symptoms may include:

- 1) Intervertebral disc herniation:
  - Injury;
  - degenerative changes.
- 2) Degeneration of cervical vertebrae:
  - Osteophytosis of the vertebral bodies.
  - Hypertrophy of the facets and laminal arches.
- 3) Ligamentous and segmental instability.

Pattern of Cervical Spondylosis are:

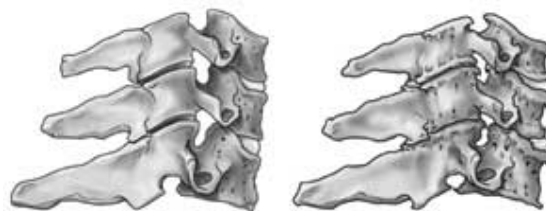
- 1) Radicular pattern: neck pain, shoulder pain, arm pain, and shooting pain; neck stiff in the morning; tingling, numb in the arm or finger or thumb.
- 2) Vertebral artery pattern: dizzy, tinnitus (ear ringing), nausea, diplopia.
- 3) Myelopathy pattern: pain in the neck, arm or finger or thumb numbness, and upper limbs weakly, or lower limbs weak which can't walk or limp, worse is the paralysis and incontinence.
- 4) Sympathetic pattern: headache of occipital, dizzy, hotflase, sweat body, dry skin, dry eye.
- 5) Combination pattern

## Points of Diagnosis

- Age: the most cases are over 40 years old, and men more than woman.
- Pain in the neck, headache (back of head), shoulder, or radiating pain in the arm or fingers.
- Numbness or tingling in the arm or fingers or thumb.

- Dizziness.
- Loss of balance.
- Dry eyes, visual disturbances (eg, blurred vision, diplopia)
- Tinnitus.
- Disturbed concentration and memory
- Hot flash (rarely).
- X-ray, MRI, CT will find particular problem.

By age 60, 70% of women and 85% of men show changes consistent with cervical spondylosis on x-ray. This may result from injury to facet joints that are supplied with proprioceptive fibers that when injured can cause confused vestibular and visual input to the brain [2].



**Figura 1.**  
a. Healthy cervical spine;  
b. Arthritic degeneration of cervical spine [2]

## Complications

- Chronic neck pain
- Progressive loss of muscle function or feeling
- Permanent disability (occasional)
- Inability to retain feces (fecal incontinence) or urine (urinary incontinence)

## Symptoms

- Neck pain (may radiate to the arms or shoulder)
- Loss of sensation or abnormal sensations of the shoulders, arms, or (rarely) legs
- Weakness of the arms or (rarely) legs
- Neck stiffness that progressively worsens
- Loss of balance

- Headaches, particularly in the back of the head
- Loss of control of the bladder or bowels (if spinal cord is compressed)

A pain in the neck that continues to get worse is a sign of cervical spondylosis. It may be the only symptom in many cases. Weakness or sensation losses indicate damage to specific nerve roots or to the spinal cord. Reflexes are often reduced.

### Physical Examination

- 1) Cervical movement: flexion 35-45°; extension 35-45°; lateral bending 45°; rotation 60-80°;
- 2) Tension arm test (figure 2);
- 3) Percussion head test (figure 3);
- 4) Jackson test (figure 4);
- 5) Compression shoulder test (figure 5);
- 6) Traction test (figure 6);
- 7) Spurling test (figure 7).

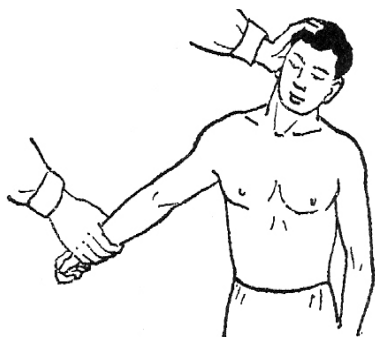


Figura 2. Tension arm test

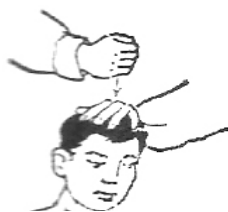


Figura 3. Percussion head test

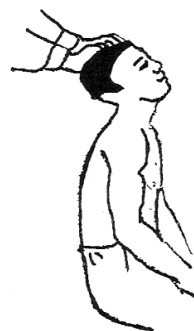


Figure 4. Jackson test

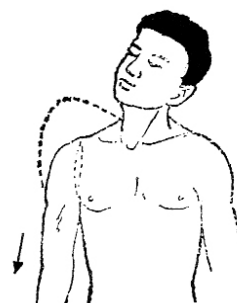


Figura 5. Compression shoulder test



Figura 6. Traction test



Figura 7. Spurling test

### Imaging

- A spine or neck X-ray shows abnormalities that indicate cervical spondylosis.
- A CT scan or spine MRI confirms the diagnosis.
- A myelogram (X-ray or CT scan after injection of dye into the spinal column) may be recommended to clearly identify the extent of injury.

- An EMG may also be recommended.

An X-ray examination of the superior spine may reveal degenerative changes in this region (figure 7) [2].



Figure 7. Radiological aspects in cervical spondylosis

### Treatment by TCM on cervical spondylosis

- TuiNa: RouGun (rolling and kneading), NaRou (Grasping and kneading), An (pressing), Ban (adjustment), Pushing Manipulation with one finger (Yizhichan Tuifa),
- Acupuncture: GB20 (风池), GB21 (肩井), DU14 (大椎), SI11 (天宗), LI12 (曲池), SJ 14 (外关), LI 4 (合谷), DU20 (百会), DU (上星).
- Chinese herbs:
  - a. Wind Bi: FangFengTongShenWan, DuHuoJiShengWan.
  - b. Blood stagnation: FuFangDanShengWan.
  - c. ShenYang deficiency: ShenQiWan, BuYangHuanWuWan, TanWangBuXinWan.
- Traction [3-6].

### Tuina therapy

In ancient China, medical therapy was often classified into "external" and "internal" treatments. Tuina was one of the external

methods, especially suitable for use on the elderly population and on infants. Today it is subdivided into specialized treatment for "infants", "adults", "orthopedics", "traumatology", "cosmetology", "rehabilitation", "sports medicine"

etc. Tuina has been used extensively in China for over 2,000 years.

Tuina has no side effects unlike many modern drug-based and chemical-based treatments. It has been used to treat or compliment the treatment of many conditions, especially specific musculo-skeletal disorders and chronic stress-related disorders of the digestive, respiratory, and reproductive systems.

The first reference to this type of external treatment was called "Anwu", then the more common name became "Anmo". It was then popularized and spread to many foreign countries such as Korea and Japan where they developed their own style of manipulations.

As the art of massage continued to develop and gain structure, it merged (around 1600 CE) with another technique called "Tuina", which was the specialty of bone-setting using deep manipulation. It was also around this time that infant "Tuina" became popular, with its own set of rules and methods.

It is not unusual to see practitioners working on street corners and parks in modern China. Tuina is an occupation that is particularly suitable to those with physical disabilities and in China, many blind persons receive training in the art of Tuina, where their heightened sense of touch is a great benefit [4-6].

### **Meaning**

The term "Tuina" is translated in Chinese as "push-grasp". Physically, it is a series of pressing, tapping, and kneading that removes blockages along the meridians of the body and stimulates the flow of Qi and blood to promote healing, similar to principles of acupuncture, moxibustion, and acupressure. Tuina's massage-like techniques range from light stroking to deep-

tissue work which would never to considered during a recreational or relaxing massage [4, 5].

### **Contraindications**

Tuina can be quite powerful and sometimes quite painful during the deep-tissue manipulations. Clinical practitioners often use herbal compresses and packs to aid in the healing process, which can cause allergic reactions on sensitive skin. Tuina is not used for conditions involving compound fractures, external wounds, open sores or lesions, phlebitis, or with infectious conditions such as hepatitis. Tuina should not be performed on the abdominal portion of a woman in menstrual or pregnant periods, and it is not used for treatment of malignant tumors or tuberculosis.

### **Expectations**

When you go into a typical adult Tuina session, the patient wears loose clothing and lies on a massage table or floor pad. After answering some brief questions about the nature and location of the health problem as well as basic questions about general health, allergies and other existing conditions, the practitioner will concentrate on specific acupressure points, energy trigger points, muscles and joints surrounding the affected area. Never go for a treatment just after eating...wait at least an hour.

Don't expect a light, relaxing massage, this therapeutic method goes directly after the problems, sometimes requiring significant pressure. When excessive friction from rubbing or stroking is involved, the practitioner may choose to use talcum powder, sesame oil, ointment of Chinese holly leaf, oil from HongHua, or a specialized massage emulsion or oil developed for Tuina.

Occasionally, clothing is removed or repositioned to expose a particular spot that requires direct skin contact. The patient should always be informed before this act, and no inappropriate or unexpected contact should ever be made in a professional session.

Treatment sessions last from 30 minutes to over an hour. Patients often return for additional treatments for chronic conditions. As with most "energy-based" treatments, the patient usually feels either relaxed and tired, or surprisingly energized by the treatment and release of pain [5,6].

#### Tuina Manipulations for Adult

- Pushing Manipulation with One-finger (Yizhichan Tuifa)
- Rolling Manipulation (Gunfa)
- Kneading Manipulation (Roufa)
- Circular Rubbing Manipulation (Mofa)
- To-and-fro Rubbing Manipulation (Cafa)
- Pushing Manipulation (Tuifa)
- Palm twisting Manipulation (Cuofa)
- Wiping Manipulation (Mafa)
- Shaking Manipulation (Doufa)
- Vibrating Manipulation (Zhenfa)
- Pressing Manipulation (Anfa)
- Sweeping Manipulation (Saosanfa)
- Plucking Manipulation (Tanbofa)
- Gripping Manipulation (Zhuafa)
- Chopping Manipulation (Pifa)
- Digital-pressing Manipulation (Dianfa)
- Scraping Manipulation (Guafa)
- Grasping Manipulation (Nafa)
- Finger-twisting Manipulation (Nianfa)
- Patting Manipulation (Paifa)
- Percussing Manipulation (Jifa)
- Rotating Manipulation (Yaofa)
- Back-carrying Manipulation (Beifa)

- Pulling Manipulation (Banfa)
- Traction Manipulation (Bashenfa)

#### Tuina Therapy for Cervical Spondylosis

- **Pushing Manipulation with one finger (Yizhichan Tuifa)**

##### *Operating method*

Exert force on a certain site or point with the tip or the whorl surface or the radial hump of the thumb. Meanwhile relax the wrist area, drop the shoulder, hang down the elbow and suspend the wrist. Having the elbow joint slightly lower than the wrist and using the elbow as a pivot, sway the forearm initiatively and make drive the wrist to sway and the thumb joint to do flexion and extension. While the wrist is swaying, it's ulnar side should be lower than the radial side, so as to make the force act on the treated area. Pressing force, frequency and swaying range should be even with nimble action. The frequency is 120-160 times/minute. In operating, clench a hollow fist with the thumb covering the fist hole, relax the muscle of the upper limb. Exert force naturally with the tip of the thumb, avoiding pressing downward violently. After the tip or whorl surface of the thumb are able to fix a certain site, begin practicing swaying the wrist and do slow, straight, to-and-from movements, which is the so called movement of forcefully pushing and slowly moving. Has the effect of relaxing tendons and activating the meridians, regulating ying and wei systems, eliminating blood stasis and food retention and strengthening the spleen and stomach .

- **Grasping Manipulation (Nafa)**

##### *Operating method*

Use the thumb with the index and middle fingers or other four fingers to lift and pinch certain operated

parts or points of the neck, nape and shoulders, rhythmically with opposite force. In operating, exertion of force should be from light to heavy and sudden exertion should be avoided. Operation should be even, slow and coherent. Has the effect of dispelling wind and cold, inducing resuscitation to stop pain, relaxing tendons and dredging the meridians.

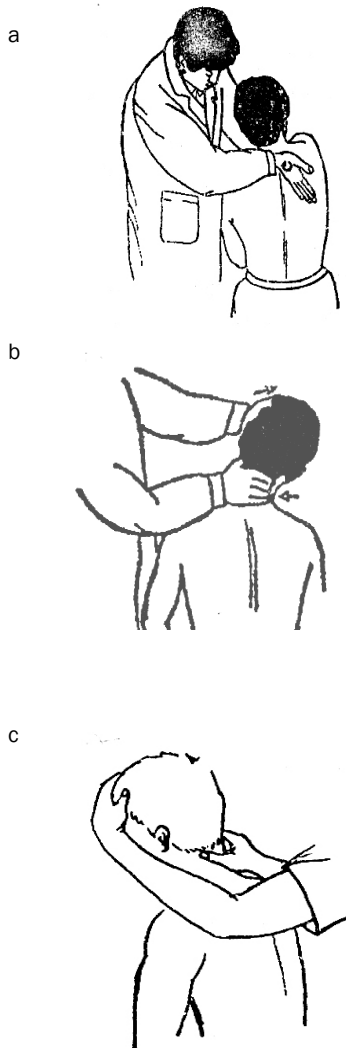


Figure 7(a - c). Tuina techniques in cervical spondylosis [6]

▪ **Kneading Manipulation (Roufa)**

*Operating Method*

Palm kneading manipulation is performed by fixing the major thenar or the palmar base on a certain part or point of the neck, nape and shoulders, relaxing the wrist, using the elbow as a pivot, swaying the forearm initiatively and bringing the wrist to sway slowly and softly.

Finger kneading manipulation is done by fixing the whorl surface of the fingers on the certain points of the neck, nape and shoulders, relaxing the wrist, using the elbow as a pivot, having the forearm make initiative swaying movement and bringing the wrist, palm and finger to sway slowly and softly. This movement should be done gently with less pressure, and its movements should be coordinative and rhythmic at a frequency of 120-160 times/minute. Has the effect of regulating flow of qi, promoting circulation of blood in order to remove blood stasis and subduing swelling to relieve pain.

▪ **Rolling Manipulation (Gunfa)**

*Operating method*

Rolling manipulation is a complex movement of flexing, extending of the wrist joint and rotating of the forearm. Flexion and extension of the wrist joint is completed by using the dorsum aspect of the 2<sup>nd</sup> and the 4<sup>th</sup> metacarpophalangeal joints as an axis, while rotating movement of the forearm is done by using the ulnar dorsum side as an axis. So the fixing point of rolling manipulation is the crossing point of the above two axes, of the dorsum aspect of the metacarpophalangeal joint of the little finger. Have the point fix on a certain part, use the elbow as a pivot, sway the forearm initiatively and bring the wrist to do a complex movement of extension and flexion and the forearm to rotate too. The fixing point should be close to the body surface; hauling, turning and leaping movements should be avoided; pressing

force, frequency and swaying range should be even and the movements should be coordinative and rhythmic. In the operation, the shoulder and the arm should try to relax, and the elbow bends in an angle of 120. The rolling manipulation has the effect of relaxing tendons and activating blood, relieving spasm of muscle and ligaments, improving the moving ability of muscles and ligaments, promoting circulation of blood and removing fatigue of muscles.

▪ **Traction Manipulation (Bashenfa)**

*Operating method*

Traction manipulation of the head and neck. The patient sits straight. The doctor stands behind the patient, supports the inferior aspect of the patient's occipital bone with his or her thumbs, holds the inferior aspects of the angles of the lower jaws on both sides with the palmar bases and presses the patient's shoulders with his or her forearms. The doctor pulls with moderate force upward with both hands and presses downward with both forearms in opposite directions simultaneously. Traction manipulation of the shoulder joint. The patient takes a sitting position and the doctor holds the patient's wrist or elbow with both hands and pulls gradually with moderate force. Ask the patient to move his or her body to the opposite side, or ask the assistant to help fix the patient's to counteract the pulling force.

Traction manipulation of the wrist joint. Hold the lower end of the patient's forearm with one hand, hold his or her hand with the other hand to do opposite traction with force simultaneously.

This manipulation is often used for malposition of joints, injury of tendons, etc. Has the effect of reduction for sprained muscles and tendons and displaced joints.

**Notes on external treatment – cervical spondylosis cases**

▪ **Case 1**

Ms. C., 47 years old

The patient was found with the compliance of cervical spondylosis. She had received different treatments in many hospitals. X-ray showed the herniation of C3-4.

Symptoms such as dizziness, distention of head, stiff neck, numbness sensation of the occiput region as well as left hand, unclear vision, fatigue, bruise on the tongue and string-like pulse were found.

Syndrome differentiation: blood stagnation and yang exuberance.

Therapeutic Principle: soothe liver to stabilize yang, activate blood to disperse stagnation.

Treatment: we applied “Yi Zhimei” on GB 20 (fēng chí , 风池), DU 14 (dà zhuī , 大椎), Tou Zhui, as well as C 3-4 region. All symptoms disappeared after a 3 months treatment.

Analysis: cervical spondylosis is a long-term bony degenerative disease with the symptoms caused by the nerves compressed by herniation. Routine conservative treatment includes traction and massage therapy. These treatments can actually relax the tightness of the muscles and compression on nerve roots, which is effective in relieving symptoms. Problems of conservative treatments lie in the relapse of the disease. Normally, the removal of the herniation is the final theoretically right treatment of the disease. However, due to its suffer and danger, surgeons are applied on few people by far. It is the lack of direct medication that pushes patients with cervical spondylosis turning to Traditional Chinese Medicine.

Based on the theory of syndrome differentiation and pattern identification in Traditional Chinese Medicine, various patterns are classified in cervical



spondylosis. Patients with obvious sensation of dizziness are diagnosed as the liver yang hyperfunction and internal wind move pattern caused by blood stagnation or blood deficiency. Patients with the headache and neck stiffness are diagnosed as blood stagnation and blood impeachment pattern due to long-term deficiency of liver and kidney or the yang exuberance and stasis of blood and qi caused by the invasion of external pathogen. In most cases pain in the body is caused by the deficiency of qi and blood of the body circulation, so is the weakness of sight caused by the deficiency of qi and blood in eyes circulation. One of the features of the disease is the deficiency in root with excess in the superficial aspect with the intensive symptoms and long-term development. Primary cause of the disease lies in the stagnation in vessels. Based on this primary cause, dredging the stagnation should be performed first. Without the dredging the stagnation, can't the deficiency in the superficial aspect be moved either the excess of root. That's why the activating blood and qi medications must be added into the decoction preparation. In the external treatment, intensive medication with the function of activating blood and qi should be added in due to the importance of the activation of qi and blood.

#### ▪ Case 2

Mrs. Z., female, 50 years old

She complained of neck pain, shoulders upset, numbness and pain of arms, dizziness, dizzy vision, lumbago, oppression in the Chest, palpitations, dry mouth, and inability to sleep. Be diagnosed as a syndrome of reddened complexion, red tongue with thin fur, and slight rapid pulse. Cervical spondylosis has previously been diagnosed by western medical doctor.

Syndrome differentiation: kidney deficiency and

hyperactivity of yang.

Therapeutic Principle: use hidden yang to reinforce deficiency, activate blood to regulate qi.

Treatment: to paste Yi zhimei No.2, No.3 and No.4 separately on temples, Da-Zhui, anterior and posterior of shoulders and waist. Remove the plaster from temples after 80 min, and remove the plasters from other points after 120min. Five days later, received the drug again. All syndromes disappeared after three times treatment, and were able to have normal work and life.

Analysis: kidney deficiency and hyperactivity of yang belongs to “deficiency Ben and excessive Biao”. Kidney controls bone, product marrow, and contacts with brain, so kidney deficiency lead to essence insufficiency and brain empty, brain is sea of marrow, so sea of marrow insufficiency lead to dizziness and tinnitus. Kidney controls bone and liver controls sinew, kidney deficiency unable to nourishing liver-wood lead to bone weakness, sinew atrophy, and limbs weakness. Waist is the mansion of kidney, so kidney deficiency lead to waist pain. Liver controls free coursing and likes regulation, liver disease and obstructing qi and blood lead to oppression in the Chest, tiring heart-mind and palpitations, and inability to sleep, all of these syndromes due to disease of liver and kidney. Therefore, it must use hidden yang to reinforce deficiency, activate blood to regulate qi. Although Yi zhimei stresses on activate blood and unblock collateral, it should be added drugs to adapt to a variety of syndrome. Regardless of removing or tonification, the most important task of drugs for external use is to release the exterior and inducing resuscitation, otherwise, it hard to get effect even a perfect medical theory.

## Conclusion

Tuina is a clinical practice based on the principles of Traditional Chinese Medicine (TCM). An expert physician of Tuina should be well versed in the knowledge of both Chinese and Western medicines, and has mastered the professional theories and skills needed for clinical diagnosis and treatment.

While performing Tuina, the physician concentrates his mind, regulates his breathing, and actuates the Qi and power of his entire body towards his hands. Even when exertion of strength is needed, the physician should never hold his breath or break his concentration. For a better result is recommended to try to combine acupuncture with tuina treatment.

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