

Effects of Tuina Combined with Exercise Rehabilitation on the Recovery of Patients with Cervical Spondylotic Radiculopathy

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Abstract: Objective: To observe the effects of Tuina combined with exercise rehabilitation on cervical spine function recovery in patients with cervical spondylotic radiculopathy. **Methods:** A retrospective study was conducted. Forty-three patients with cervical spondylotic radiculopathy who received conventional treatment from January to December 2024 were enrolled as the control group. Another 43 patients who received Tuina combined with exercise rehabilitation from January to December 2025 were enrolled as the observation group. Cervical spine function and symptom scores were compared between the two groups. **Results:** The post-treatment NDI score in the observation group was lower than that in the control group ($P < 0.05$). The post-treatment symptom score in the observation group was lower than that in the control group ($P < 0.05$). **Conclusion:** The clinical application of Tuina combined with exercise rehabilitation in the treatment of cervical spondylotic radiculopathy helps relieve various symptoms and promotes the recovery of impaired cervical spine function.

Keywords: Tuina; Exercise Rehabilitation; Cervical Spondylotic Radiculopathy

1. Introduction

Cervical spondylotic radiculopathy is a common clinical type of cervical spondylosis with a complex pathogenesis. It affects the surrounding sympathetic nerves and nerve roots, leading to cervical pain, limited mobility, and other symptoms that directly impair patients' daily lives^[1-2]. Conventional treatment mainly relies on vasodilators or analgesics. Although such treatment relieves symptoms to a certain extent, the improvement is slow. Traditional Chinese Medicine (TCM) Tuina has the effects of promoting blood circulation, removing blood stasis, and relaxing muscles and tendons, which can enhance cervical blood circulation and

restore impaired functions^[3-4]. Exercise rehabilitation training improves cervical spine function and promotes recovery through targeted neck movements. This study aimed to observe the efficacy of Tuina combined with exercise rehabilitation for patients with cervical spondylotic radiculopathy.

2. Materials and Methods

2.1 General Data

A total of 43 patients with cervical spondylotic radiculopathy who received conventional treatment from January to December 2024 were retrospectively included as the control group. Another 43 patients who received Tuina combined with exercise rehabilitation from January to December 2025 were retrospectively included as the observation group. In the control group, there were 23 males and 20 females, aged 47–77 years, with a mean age of (56.33 ± 1.23) years. The disease course ranged from 7 months to 6 years, with a mean of (3.45 ± 0.83) years. In the observation group, there were 24 males and 19 females, aged 48–76 years, with a mean age of (55.35 ± 1.15) years. The disease course ranged from 7 months to 6 years, with a mean of (3.22 ± 0.98) years. No significant differences were observed in age, disease course, or other baseline data between the two groups ($P > 0.05$).

2.2 Methods

Control Group: Patients in the control group received conventional rehabilitation, including cervical traction. Cervical traction was performed by rehabilitation physicians at a traction angle of 10° – 20° , with the range of motion increased gradually. Cervical correction was performed according to each patient's cervical condition, three times a week. Patients with pain received analgesic treatment based on pain severity.

Observation Group: Patients in the observation group received Tuina combined with exercise rehabilitation.

(1) Tuina: Patients were seated and instructed to take two deep breaths to relax. The neck, shoulders, and upper limbs were kneaded for 5 minutes per session. The nuchal ligament was massaged repeatedly 5 times. The scapular muscles and trapezius muscles were massaged repeatedly 5 times. Pressure was applied to both sides of the spine 3 times. Finally, thumb pressure was applied to Shousanli, Jianjing, Dazhong, Dazhui, and Quchi acupoints, with each point stimulated for 30 seconds.

(2) Exercise rehabilitation: Patients performed independent exercises during recovery, including left-right bow opening, front-back stretching, scapular traction, forward flexion, and shoulder touching. Each exercise lasted 5–10 minutes, twice daily.

Both groups received treatment for 4 consecutive weeks.

2.3 Observation Indicators

(1) Cervical spine function score: The Neck Disability Index (NDI) was used to evaluate cervical spine function before and after treatment. The scale assessed daily activities, lifting ability, pain severity, and other dimensions, with a total score ranging from 0 to 50. A higher score indicated worse cervical spine function.

(2) Symptom score: Pain, numbness, limb paralysis, and chills with cold limbs were evaluated on a scale of 0–3. The score was positively correlated with symptom severity.

0 points: No discomfort, normal activities.

1 point: Mild pain or numbness with little impact on daily activities.

2 points: Moderate to severe pain or numbness

Table 2. Comparison of TCM Symptom Scores Between the Two Groups ($\bar{x}\pm s$)

Group	Number of Cases	Pain		Numbness		Limb paralysis		Chills & cold limbs	
		Before Nursing	After Nursing	Before Nursing	After Nursing	Before Nursing	After Nursing	Before Nursing	After Nursing
Observation	43	2.15±0.13	1.05±0.15	2.23±0.15	1.02±0.13	2.23±0.14	1.02±0.23	2.05±0.12	1.15±0.12
Control	43	2.17±0.15	1.58±0.22	2.21±0.14	1.53±0.15	2.24±0.16	1.56±0.23	2.11±0.14	1.45±0.11
t	-	0.235	17.452	0.705	9.923	0.294	17.217	0.715	21.425
P	-	0.815	<0.001	0.459	<0.001	0.770	<0.001	0.445	<0.001

4. Discussion

Cervical spondylotic radiculopathy is characterized by a long course and slow recovery. Persistent symptoms such as pain and limited mobility directly affect patients' daily lives^[5-6]. In TCM theory, cervical spondylotic radiculopathy is classified as "Bi syndrome". The core pathogenesis is obstruction leading to

with obvious limb weakness.

3 points: Severe pain or numbness exceeding tolerance.

2.4 Statistical Methods

SPSS 26.0 software was used for data analysis. Measurement data (NDI score, symptom score, etc.) were expressed as mean \pm standard deviation ($\bar{x}\pm s$) and analyzed by t-test. Enumeration data were expressed as percentage (%) and analyzed by chi-square test. A P-value <0.05 was considered statistically significant.

3. Results

3.1 Comparison of NDI Scores Between the Two Groups

After treatment, the NDI score in the observation group was lower than that in the control group ($P<0.05$), as shown in Table 1.

Table 1. Comparison of cervical spine function scores between the two groups ($\bar{x}\pm s$)

Group	Number of Cases	Before treatment4 weeks after treatment	Before treatment4 weeks after treatment
Observation	43	34.56±2.15	17.64±1.68
Control	43	34.68±2.26	25.26±1.74
t	-	0.468	22.0452
P	-	0.637	<0.001

3.2 Comparison of TCM Symptom Scores Between the Two Groups

The post-treatment TCM symptom score in the observation group was lower than that in the control group ($P<0.05$), as shown in Table 2

pain. Treatment should focus on unblocking tendons, promoting blood circulation, and removing blood stasis to facilitate recovery.

On the basis of conventional treatment, Tuina is applied to activate blood circulation, relax muscles and tendons, quickly unblock obstructed channels, and relieve pain^[7]. Guided exercise rehabilitation also improves local blood circulation and restores impaired cervical

function. In this study, the observation group received combined Tuina and exercise rehabilitation. Both cervical dysfunction scores and symptom scores were significantly lower than those in the control group, indicating that this combined regimen effectively relieves symptoms and promotes recovery.

In conclusion, Tuina combined with exercise rehabilitation can be used in the rehabilitation of patients with cervical spondylotic radiculopathy to promote functional recovery.

References

- [1] Zhang Y, Guo L, Xie H, et al. Mechanism and application of Guo's tendon-injuring Tuina tendon-regulating technique in the treatment of cervical spondylotic radiculopathy based on the "tendon binding bone" theory[J]. *Journal of Practical Traditional Chinese Medicine*, 2025, 41(06): 1324-1326.
- [2] Feng HY, Dan YQ, Ding Y, et al. Experience of Li Li in treating cervical spondylotic radiculopathy with suspension Tuina movement technology based on the "simultaneous treatment of meridian chains" theory[J]. *Shandong Journal of Traditional Chinese Medicine*, 2025, 44(05): 571-575.
- [3] Zhu YQ, Zhang WD, Jiang Y, et al. Research progress on brain network mechanisms of TCM rehabilitation intervention for chronic neck pain in cervical spondylosis[J]. *Chinese Medicine Rehabilitation*, 2025, 2(04): 29-34.
- [4] Zhang ZL, Chen TX, Zhang HYG. Observation on the efficacy of press needle therapy combined with Tuina manipulation and active functional exercise in the treatment of neck-type cervical spondylosis[J]. *Acupuncture Research*, 2025, 50(02): 197-203.
- [5] Wu J, Huang YJ, Xiong P. Effect of small needle knife combined with acupuncture, Tuina and traction in the treatment of cervical spondylotic radiculopathy[J]. *China Modern Medicine*, 2024, 31(24): 27-30+34.
- [6] Jiang XM. Clinical observation of Mahuang Gegen Decoction combined with Tongdu Lijin manipulation Tuina in the treatment of vertebral artery type cervical spondylosis[J]. *Journal of Medical Theory and Practice*, 2024, 37(13): 2230-2233.
- [7] Zhang K. Analysis on the efficacy of meridian-based Tuina combined with Chubi Tongluo Decoction for cervical spondylotic radiculopathy and its influence on pain and joint function recovery[J]. *Clinical Journal of Chinese Medicine*, 2023, 15(30): 116-118.