

Research progress on the use of acupuncture based on myofascial trigger point technique in the treatment of neurogenic cervical spondylosis

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Abstract: Cervical spondylosis is a common orthopaedic condition, and CSR is the most common type of cervical spondylosis. Contracture and deformation of the muscle ligaments that maintain the stability of the cervical spine cause patients to suffer from neck pain, restricted movement, upper limb numbness and reduced muscle strength. Cervical spondylosis is closely related to myofascial trigger points. Some studies have demonstrated that acupuncture treatment of CSR can improve patients' clinical symptoms and quality of life, and it is easy to operate, has few side effects and has significant clinical efficacy. The article reviews clinical studies on the treatment of CSR with acupuncture.

1. Introduction

Cervical Spondylotic Radiculopathy (CSR) is a condition in which the muscle ligaments that are supposed to maintain the stability of the cervical spine are contracted and deformed as a result of long-term poor posture or other factors, leading to further stenosis of the intervertebral foramen and compression of the cervical nerve roots, resulting in the development of the corresponding clinical symptoms [1]. It is the most prevalent type of cervical degenerative lesion in clinical practice, accounting for approximately 60.2% of the incidence of cervical spondylosis [2]. In Chinese medicine, cervical spondylosis is often referred to as "Xiang paralysis". Most cervical spondylosis is closely related to myofascial trigger points and treatment is based on removing myofascial trigger points and restoring the myofascial physiology of the cervical spine. The use of surgical treatment is also gradually being applied in clinical practice [3], but CSR is still mainly treated conservatively. Acupuncture is one of the main methods of conservative treatment for cervical spondylosis, with the advantages of easy operation, low risk, good efficacy and less recurrence [4].

2. Myofascial trigger point technique

Myofascial trigger points were first proposed by clinical professors in the USA. Some studies have described that the majority of outpatients' pain originates from myofascial trigger points, and even almost all patients with chronic pain involve myofascial trigger points [5]. The mechanism is mainly due to malfunctioning of the motor endplates due to overexertion or muscle injury, which

results in sustained contraction of the muscle fibres, creating myofascial trigger points, which in turn release inflammatory mediators and trigger pain. Acupuncture of myofascial pain trigger points combined with functional neck exercises can reduce pain and restore motor function of the neck [6]. Therefore, the use of acupuncture to stimulate myofascial trigger points for the treatment of CSR is gradually being used in clinical practice, where the efficacy of acupuncture treatment is judged by the Neck Pain Scale, the Cervical Dysfunction Index, the Inflammatory Factor and the Pain Visualization Scale.

3. Application of Acupuncture Treatment

Warming acupuncture is an ancient fire therapy, also known as "warm acupuncture", which is a combination of acupuncture and moxibustion [7]. The acupuncture is used to stimulate acupuncture points in different lines to harmonize yin and yang, tonify the real and drain the deficient, promote the restoration of neck and shoulder movement and improve the quality of life. Acupuncture has the advantages of significant efficacy, low side effects, convenient clinical implementation and easy acceptance by patients, making it an important modality in the treatment of CSR at present [8]. Some studies have shown that acupuncture can release soft tissue spasm, accelerate circulation, improve metabolism and eliminate inflammatory factors [9]; some scholars have found that acupuncture has a better analgesic effect [10]. Tan Shusheng et al [11] treated 191 patients with electroacupuncture after destroying myofascial pain trigger points with milli needles, and the results showed a reduction in pain. Zhang Zhanwei et al [12] treated 50 patients with neck pain formula combined with warm acupuncture and found that the neck pain scale and cervical dysfunction index were lower than before treatment, indicating that the method could effectively relieve pain, improve cervical spine function, improve sleep quality and improve quality of life. The imbalance of muscle mechanics on both sides of the neck in CSR patients will affect the mechanical balance of the lumbar spine and muscle tissues on both sides in the long run, according to the transmission of force lines [13]. The pain is relieved by the warmth and acupuncture effect, and the acupuncture is applied to the nerve roots to reach the disease. The use of acupuncture can also relieve upper limb symptoms and neck signs in CSR patients [14]. Warm needles combined with tonic-diarrheal techniques are more effective in relieving pain in CSR patients [15]. Yang [16] treated 52 patients with CSR using warm acupuncture and moxibustion on the jiaoji points and analyzed the pain symptoms and inflammatory factors. The results showed that the patients' pain scores and serum inflammatory factor levels were lower than before treatment, and concluded that warm acupuncture and moxibustion on the jiaoji points was clinically effective in treating CSR, which could effectively relieve pain and had anti-inflammatory effects. Jing Wei et al [17] treated 43 patients with warm acupuncture and evaluated the treatment effect by cervical spine function, cervical spine dysfunction index scale (NDI), and pain visualization scale (VAS) after 1 month, and the results showed that the total effective rate was 95.35%, indicating that the clinical efficacy of warm acupuncture in treating CSR was obvious. Tang Ke et al [18] used ultrasound real-time shear wave elastography (SWE) technique to assess the cervical myofascial trigger points of acupuncture combined with manipulation in 40 patients with CSR. The ultrasound SWE technique was used to assess the elasticity measurements of the sternocleidomastoid, rhomboid and superior oblique fascia trigger points in the elastic-shear wave mode, the cervical dysfunction index (NDI), the short-form McGill pain score, the After 3 months, the SWE values of the sternocleidomastoid, rhomboid and superior trapezius muscles were found to be lower than before treatment, indicating that the muscle elasticity values of the cervical myofascial trigger points were significantly altered and muscle tone was reduced after acupuncture. Wang Guangyu et al [19] found that the VAS score and vertigo symptom score were lower than before the treatment, and the treatment efficiency was 97.22%,

which indicated that acupuncture inactivation of myofascial trigger point block could effectively reduce pain and improve the treatment efficiency. Zeng Zhi et al [20] treated 43 CSR patients with Gui Ge Shu Neck Formula combined with acupuncture, and analyzed the TCM symptom score, VAS scale, cervical spine dysfunction index (NDI), ultrasensitive-C-reactive protein, and IL-1 β levels after 1 month, and found that the total effective rate was 95.35%, and the TCM symptom score, VAS, NDI score, ultrasensitive-C-reactive protein, and IL-1 β levels were lower than those of the control group, indicating that the combination of Gui Ge Shu Neck Formula and acupuncture therapy can effectively suppress neurogenic inflammatory responses in CSR patients, reduce pain, improve the function of the cervical spine, reduce the recurrence rate and improve the efficacy. Liao Weiming et al [21] used the combination of small acupuncture to treat 35 patients with CSR and found that the TCM evidence score and cervical spine dysfunction index were lower than those of the control group, and the total effective rate was 100%, indicating that the combination of small acupuncture can improve cervical spine function and relieve pain. Yu Xiaoyong et al [22] applied joint stretching combined with myofascial trigger point compression to 30 patients with CSR and evaluated the efficacy using visual pain analogue scoring (VAS) and cervical dyskinesia index (NDI). The results showed that the application of myofascial trigger point compression for CSR was effective in relieving neck pain and improving neck function.

4. Conclusion

In the Su Wen - Regulating the Classic, it is mentioned that "the owner of the human body is the Qi and the Blood" and that "if the disease is in the veins, regulate the Blood; if the disease is in the Blood, regulate the ligaments." Acupuncture at myofascial pain trigger points for CSR can regulate the flow of Qi and Blood, thus moisturizing the whole body and improving microcirculation, reducing pain and inhibiting inflammation. From clinical practice, it can be seen that acupuncture is effective in treating neurogenic cervical spine and is worthy of clinical promotion and application.

References

- [1] Chen XM, Feng SQ, Xu SJ, Cui LB, Yuan X, Liu YD, Zhao P, Yu ZS. Analysis of the causes of nerve root compression in the intervertebral foramen of CSR and selection of decompression methods[J]. *Chinese Journal of Spinal Cord*, 2015, 25(02):103-108.
- [2] Zeng Jingzhao. Clinical efficacy of electroacupuncture combined with tuina in the treatment of CSR [D]. *Guangzhou University of Traditional Chinese Medicine*, 2014.
- [3] He Y, Li KJ. Advances in cervical spine surgery research[J]. *Journal of Medicine of Yanbian University*, 2016, 39(02):143-146.
- [4] Zhao C., Bai Y. Clinical observation of non-surgical integrated therapy optimization program for CSR[J]. *Rheumatology and arthritis*, 2014, 3(11):27-29+44.
- [5] Liu L, Huang QM, Liu QG, Bo CZ. Research progress of myofascial trigger point theory and its application in clinical practice of sports rehabilitation [J]. *Chinese Rehabilitation Theory and Practice*, 2016, 22(10):1167-1170.
- [6] Yu Chaojie, Li Dingbin, Shen Maorong, Xie Furong, Liang Weiguo, Tian Gang, Jiang Cheng, Zhou Wen. Efficacy of a functional neck exercise device combined with needling myofascial pain trigger points for the treatment of CSR [J]. *Guangxi Traditional Chinese Medicine*, 2018, 41(06):26-28.
- [7] Zhu Yi, Huang Renjia, Wang Shuoshuo, Wu Luyi, Cui Yunhua, Shen Wenbin, Xu Manwen, Shi Zheng, Huang Yan, Zhao Jimeng. From single to multiple: Advances in clinical applications of warm acupuncture[J]. *World Journal of Integrative Chinese and Western Medicine*, 2016, 11(03):440-444.
- [8] Ma JY, Wang Y, Wang HB. Clinical research progress of Chinese medicine in the treatment of CSR [J]. *Jilin TCM*, 2020, 40(09):1250-1253.
- [9] Jiang Peicong. Clinical observation of acupuncture combined with blood activation and analgesia formula in the treatment of extravertebral chronic soft tissue injury lumbar and leg pain[J]. *Chinese folk therapy*, 2019, 27(21):59-60.
- [10] Wang Xiaoming, Li Min, Tan Jie, Wang Guizhen, Dong Honglin. Efficacy of acupuncture combined with gua sha point bloodletting in the acute stage of lumbar intervertebral disc herniation [J]. *Chinese Journal of Traditional*

Chinese Medicine, 2020, 35(09):4753-4757.

[11] Tan Shusheng, Zhuang Xiaoqiang, Huang Qiangmin, Long Jiajia, Wei Jianglin, Huang Jianping. Observation on the efficacy of acupuncture myofascial pain trigger points in the treatment of cervical spondylosis [J]. *Guangxi Traditional Chinese Medicine*, 2012, 35(05):13-15.

[12] Zhang ZW, Hu YD, Li WM. Clinical study on the combination of neck pain formula and warm acupuncture for the treatment of cold and damp paralysis evidence in CSR [J]. *New Chinese Medicine*, 2022, 54(20):95-98.

[13] Zhen-Qi W. Clinical study on the treatment of acute appendicitis complicated with peritonitis with combination of TCM and Western Medicine[J]. *Cardiovascular Disease Journal of Integrated Traditional Chinese and Western Medicine*, 2014.

[14] Zhou Zhongliang, Zhu Junchen, Tang Wangjun, Zheng Baozhu. Clinical study of acupuncture holistic release combined with warm acupuncture in the treatment of Xiang paralysis[J]. *Chinese Journal of Traditional Chinese Medicine*, 2019, 34(08):3854-3857.

[15] Zhu Yi, Xu Manwen, Huang Yan, Ma Xiaopeng, Shi Zheng, Xu Shifen, Liu Huirong, Wang Siyu, Wu Huanjian. Observation on the efficacy of warm acupuncture in the treatment of CSR[J]. *Shanghai Journal of Acupuncture and Moxibustion*, 2018, 37(12):1413-1418.

[16] Yang G. Effectiveness of warm acupuncture and moxibustion for CSR and its effect on patients' pain condition[J]. *Clinical Research in Chinese Medicine*, 2021, 13(07):40-42.

[17] Jing W, Qi L, Zhang YX. Clinical effects of warm acupuncture in the treatment of CSR [J]. *Inner Mongolia Traditional Chinese Medicine*, 2022, 41(06):106-107.

[18] Tang K, Wang T, Xia W L, Yang Q R, He J C, Tong Y. Clinical efficacy of ultrasound elastography to evaluate the clinical efficacy of needling cervical myofascial trigger points in the treatment of neurogenic cervical spondylosis[J]. *Chinese Journal of Physicians*, 2022, 24(07):1087-1090.

[19] Wang Guanyu, Song Chenyuan. Clinical observation of acupuncture inactivation of myofascial trigger point block in the treatment of cervical spondylosis [J]. *Inner Mongolia Traditional Chinese Medicine*, 2021, 40(03):100-101.

[20] Zeng Z, Chen JP, Chen YF. Clinical study of Gui Ge Shu Neck Formula combined with acupuncture for the treatment of cold and stasis blocking evidence in nerve root type cervical spondylosis[J]. *International Journal of Traditional Chinese Medicine*, 2022, 44(09):996-1000.

[21] Liao Weiming, Lan Xueping, Wan Hui, Yang Longgen. Clinical observation of small acupuncture combined with acupuncture in the treatment of neurogenic cervical spondylosis[J]. *Modern distance education in Chinese traditional medicine*, 2021, 19(15):113-115.

[22] Chengzhi Z, Cardiology D O. Clinical study on the treatment of ischemic heart disease with combination of TCM and Western Medicine[J]. *Journal of North Pharmacy*, 2015.