

Cervical Spondylosis of the Nerve Root Treated Using a Longs' Bone Reduction Maneuver Combined with Silver Needle Acupuncture

Xiao Z¹, Wang X², Yang S¹, Xie G¹, Qiu J¹, Yao M³ and Zhu Y^{2*}

¹Department of Pain Management, Chinese People's Armed Police Force, Zhejiang Corps Hospital, People's Republic of China

²Department of Cardiothoracic Surgery, Chinese People's Armed Police Force, Zhejiang Corps Hospital, People's Republic of China

³Department of Pain Management, The First Hospital of Jiaying City, Zhejiang Province, People's Republic of China

*Corresponding author: Youcai Zhu, Department of Cardiothoracic Surgery, Chinese People's Armed Police Force, Zhejiang Corps Hospital, No.16 Nanhu Road, Jiaying, Zhejiang Province, People's Republic of China, Tel: +86 573 82852851; Fax: +86 573 82852933; E-mail: zhuycdoc@aliyun.com

Rec date: Apr 11, 2014, Acc date: Apr 24, 2014, Pub date: Apr 26, 2014

Copyright: © 2014 Xiao Z, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Abstract

Aim: To study cervical spondylosis of the nerve root treated using a Longs' bone reduction maneuver combined with silver needle acupuncture.

Methods: 112 patients with cervical spondylosis of the nerve root were divided into treatment (group A) and control groups (group B). Patients in group A were treated with Longs' bone reduction maneuver combined with silver needle acupuncture therapy and patients in group B were treated with the Longs' bone reduction maneuver only.

Results: There was improvement in symptoms and signs. The cure and marked effectiveness rate of group A was 94.74% and 84.21%, respectively, and 74.55% and 47.27% in group B, respectively, 1 week and 6 month after treatment; The improvement was significantly greater in group A than group B ($P_a < 0.01$ and $P_b < 0.01$).

Conclusions: The treatment that combines the Longs' bone reduction maneuver with silver needle therapy to cure cervical spondylosis involving the nerve root is convenient, highly efficient and minimally invasive.

Keywords: Spondylosis; Acupuncture; Nerve root

Introduction

With changes in lifestyles, the morbidity associated with cervical spondylosis increases yearly and tends to occur at a younger age. Cervical spondylosis involving the nerve root is one of the most common types; however, most patients have no indications for surgery and need conservative treatment. Different kinds of conservative treatments exist for cervical spondylosis, but the treatments have shortcomings, such as a poor effect and lack of sustainability. Different kinds of conservative treatments exist for cervical spondylosis, but the treatments have shortcomings, such as a poor effect and lack of sustainability. Chinese traditional medicine, for example, bone reduction maneuver and silver needle acupuncture therapy, has been used to cure patients with cervical spondylosis for many years [1,2]. There was significant therapeutic efficacy to these patients. The Longs' bone reduction maneuver created by professor Long Cenghua in China which included osteopathic manipulative technique and sinew adjusting manipulation technique. The silver needle of thermal conductivity has been used to treat soft tissue pain mainly by Dr Fugen Wang and has been put into effect by other physicians all over the country.

From 2010 to 2012, 112 patients with cervical spondylosis of the nerve root have been cured in our department using a Longs' bone reduction maneuver combined with silver needle acupuncture therapy.

Methods and Materials

Study subjects and methods

Study subject

Patients were divided randomly into treatment (group A) and control groups (group B) and signed informed consent for diagnosis and treatment. There was no ethical issue conflict in this study. There was no difference in general clinical data between groups A and B, as shown in Table 1.

Group case	Age(year)		Gender		Disease course(month)
			Male	Female	
A	57	41.85 10.46	± 26	31	6.78 ± 3.37
B	55	42.39 11.02	± 26	29	6.62 ± 3.32

Table 1: General Clinic Data

Methods

The patients in group A were treated using a Longs' bone reduction maneuver combined with silver acupuncture. According to Wang [3],

after selecting and marking the internal fixation point in the disease area, disinfecting the skin, and anaesthetizing the area with 0.5% lidocaine, acupuncture was performed with a silver needle selected by the patient's shape and acupuncture area of the attachment site of the bone beneath the diseased soft tissue, adjusting the needle tip until the strong sense of acupuncture was generated, then heating the silver needle with an instrument manufactured by Shanghai Shuxin Technology and Development Co Ltd (Shanghai, China), while keeping the temperature between 80 and 110°C for 20 min. The patient was observed carefully for side effects during the entire treatment. The bone reduction maneuver treatment began 5~7 days after the silver acupuncture needle treatment was completed.

Patients were treated using a Long's bone reduction maneuver. The type of disease was established using the three-step diagnosis method. Then, the soft tissues were relaxed by rubbing, pressing, and plucking the patients' neck, shoulders, and back. The techniques were used on patients up and down the chin, then returning to the normal position, shaking the head left and right, then returning to the normal position, shaking the shoulders when lying on the side, pressing the neck when lying in the prone position, and bone reduction. The entire course was 3 weeks (3 times each week and 1 time every other day). Patients in group B were treated with the Long's bone reduction maneuver and the course was the same as group A.

Evaluation standard of the curative effect

According to criteria [2], improvement of symptoms and signs after treatment was defined as follows: recovery: the symptoms resolved completely, muscle strength returned to normal, neck, shoulder, and limb function recovered, normal labor and work could be performed; obvious curative effect: symptoms significantly relieved, and disease condition and pain improved more than one level or reduced more than 3 points by VAS; effective: the symptoms relieved, and the conditions or pain improved slightly; and no effect: no symptoms relieved. The improvement in symptoms and signs of the two groups were compared 1 week and 6 months after treatment was completed.

Processing of statistics

Data were processed with SPSS13. The chi-square test was used for comparison of the count data and the t test was used for comparison of the measurement data. A P value <0.05 indicates a statistical difference.

Results

Improvement in symptoms and signs are shown in Table 2.

Group	case	One week					Six months				
		R	OE	E	NE	ER (%)	R	OE	E	NE	ER (%)
A	57	43	11	3	0	94.74a	36	12	7	2	84.21b
B	55	28	13	9		74.55	11	15	17	12	47.27

①Pa<0.01;②Pb<0.01
R: Recovery; OE: Obvious effect; E: effect; NE: no effect; ER: effective rate

Table 2: Improvement in symptoms and signs

The cure and marked effectiveness rate of group A was 94.74% and 84.21%, respectively, and 74.55% and 47.27% in group B, respectively,

1 week and 6 month after treatment; The improvement was significantly greater in group A than group B (Pa < 0.01 and Pb < 0.01). In addition, the improvement increased with time.

Discussion

The exact mechanism by which cervical spondylosis involving the nerve root causes pain is not clear and generally is regarded as the effect of multiple factors. Western medicine regards the mechanical compression originating from retrogression of the intervertebral disc, osteoproliferation of facet joints, ligamenta flava herniated to the intraspinal canal, and stenosis of the lumbar foramina, as causing edema and ischemia in the nerves of the nerve root and dorsal root ganglion. Biochemical factors, such as the infiltration of local inflammatory cells and the accumulation of inflammatory mediators, increases the excitability of the dorsal root ganglion neurons and the stimulus-response of the primary sensory neurons to the outside surroundings. The mechanical compression and biochemical factors together affect the nerve root and aggravate the injury of the nerve root. All these factors arouse the occurrence of root pain of cervical spondylosis involving the nerve root [4]. In Chinese traditional medicine, the strike of cold dampness, evil, strain, poor posture of the neck, trauma, and trachelism are the main reasons for cervical spondylosis. With increasing age, the frequent movements of cervical vertebra arthrosis easily causes relative position changing among cervical intervertebrae and soft tissue fatigue. Chronic fatigue of the soft tissues surrounding the cervical vertebra causes cervical spine instability, which can lead to dislocation of the lumbar intervertebrae, thus arousing the compression symptoms of the cervical carina nerve root. Therefore, the main methods of curing cervical spondylosis involving the nerve root is how to adjust and improve the relationships between cervical arthrodesis and surrounding soft tissues, reduce or eliminate the stimulation of the nervous tissue, improve the local blood circulation, and eliminate aseptic inflammation around the spinal nerve.

The Long's bone reduction maneuver created by the famous spinal vertebra expert Professor Long Cenghua in China which had significant therapeutic efficacy in cervical spondylosis. The treatment method of cervical spondylosis can be divided into osteopathic manipulative technique (rotary technique and Stubbs stretch traction technique) and sinew adjusting manipulation technique (pushing manipulation, petrissage, and grasping manipulation to different soft tissues) [5]. The osteopathic manipulative technique can adjust the static equilibrium of cervical vertebra, while the sinew adjusting manipulation technique can adjust the dynamic equilibrium of the neck [6]. Combining the osteopathic manipulation and the sinew adjusting manipulation into the Long's bone reduction maneuver, which treats cervical spondylosis involving the nerve root, can change the imbalanced state of local biomechanics to balance and relax the adhesions of the nerve root and the surrounding soft tissues, change the dimension of the foramen intervertebrae, adjust the relationship of the Luschka joint location, relieve the muscle spasms, relieve synovial incarceration, adjust the stress distribution of difference issues of cervical vertebra, strengthen the stability of cervical vertebra, reconstruct the cervical curvature, and recover the normal physiologic curvature of the cervical spine.

The thermal treatment with silver needle techniques can improve the efficacy of the Long's bone reduction maneuver and effective time, eliminate aseptic inflammation of the diseased soft issues, enhance the local blood supply, relieve the muscle spasms, promote tissue repair,

and regenerate muscle cells. The local inflammatory substances dissipate quickly and the pain is relieved significantly after the thermal treatment of silver needles. The soft tissue spasm has improved significantly and provided favorable conditions for the implementation of bone reduction technique. The bone reduction maneuver adjusts the balance status of internal and external forces of the cervical vertebra, changes and adjusts the relationship of nerve roots and the surrounding tissues, recovers the normal anatomic structure, which also create the chance for further restoration of diseased soft tissues. Coordinating the two methods improves not only the short-term clinical effect, but also the long-term cure rates significantly.

Acknowledgement

The authors are very grateful to Dr David Cushley, International Science Editing, for assistance with editing the manuscript.

References

1. Sun Y, Chen Q (1993) The second cervical spondylosis panel summary. *Chinese Journal of Surgery* 31: 472-476.
2. Li Z, Chen D, Wu D, et al. (2008) The third session of the national cervical spondylosis panel summary. *Chinese Journal of Surgery* 48: 1796-1799.
3. Wang F (2008) Silver needle of thermal conductivity treated to soft tissue pain. Henan science and technology publishing department, China.
4. Zhu W, Jia S (2004) The pathogenesis of nerve root type cervical vertebra illness pain [J]. *Chinese Journal of Orthopaedics* 24: 761-764.
5. Lu Z, Tang Z, Ye X, et al. (2011) The pathogenesis of cervical spondylosis and the research progress of traditional manipulation treatment [J]. *Chinese Journal of Traditional Medical Traumatology* 1: 61-64.
6. Zhang Q (2005) Progress of traditional medicine treated cervical spondylosis of nerve root [J]. *Traditional Chinese Medicinal Research* 18: 54-56.