



CASE REPORT

Effect of Electroacupuncture Rehabilitation in Transverse Myelitis: A Case Report

Q9 Sriloy Mohanty^{1,*}, Rabin Lal Shrestha²

¹ Division of Yoga and Life Sciences, Swami Vivekananda Yoga Anusandhana Samsthana, Bengaluru, Karnataka, India

² SDM College of Naturopathy and Yogic Sciences, Ujire, Karnataka, India

Available online ■ ■ ■

Received: Sep 6, 2016

Revised: Jun 2, 2017

Accepted: Jun 6, 2017

KEYWORDS

acupuncture;
rehabilitation;
transverse myelitis;
yoga

Abstract

A 32-year-old male diagnosed with transverse myelitis in 2013 came to our clinic in 2015 with complaints of paraplegia, sensory disturbances, pain, exertional dyspnea, poor quality of sleep, emotional instability, and depression. This was a recurrent attack that had been exacerbated by post-traumatic stress. Owing to pain and functional disabilities, he was struggling to actively participate in the treatment modalities offered at our center. A modified protocol of electroacupuncture was planned for a period of 21 days, every day, with each session lasting for 30 minutes. Assessments based on the brief version of World Health Organization Quality of Life (WHO Brief QOL) questionnaire, Pittsburgh sleep quality index, visual analog scale, and a disease-specific physical examination showed momentous improvement in functional health status as well as mental well-being. The quality of life showed significant improvement particularly in the physical and psychological dimensions of WHO Brief QOL. The patient reported a reduction in pain, dyspnea, and fatigue accompanied by an improvement in the quality of sleep and mood. This case report suggests that acupuncture can play a vital role in amelioration of symptoms, thereby improving the health status in patients with transverse myelitis.

1. Introduction

Transverse myelitis (TM) is one of the rarest diseases of the nervous system affecting one or more segments of the

spinal cord [1]. Approximately 40% of patients with TM have pain as their presenting long-term symptom [2]. Treatment of TM still accounts for a meager portion of the present medical system. Conversely, alternative systems of Q2

* Corresponding author. Swami Vivekananda Yoga Anusandhana Samsthana (S-VYASA), #19 Eknath Bhavan, Gavipuram Circle, K.G. Nagar, Bengaluru 560019, Karnataka, India.
E-mail: sriloy21@gmail.com (S. Mohanty).

pISSN 2005-2901 eISSN 2093-8152

<http://dx.doi.org/10.1016/j.jams.2017.06.005>

© 2017 Medical Association of Pharmacopuncture Institute, Publishing services by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

medicines believe that the treatment of TM is possible. Reports of acupuncture as the main treatment modality are scarce. We report the case of a patient with TM who showed a monotonous response to acupuncture treatment.

Q3 2. Case Report

2.1. Case description

A 32-year-old man with a sudden recurrent attack of TM was admitted to our rehabilitation clinic with complaints of paraplegia, sensory disturbances, pain, exertional dyspnea, poor quality of sleep, emotional instability, and depression. It was a recurrent case of TM that was exacerbated by stress. The first diagnosis was made in 2013 after a detailed case history and a magnetic resonance imaging scan, which revealed swelling and inflammatory changes between T9 and T12 when the symptoms were gradual weakness of the lower limbs, pain in foot traveling up, dysfunction of bowel, and bladder. He was initially prescribed methylprednisolone sodium succinate injections for 3 days, after which the symptoms were drastically reduced. Later his medications were stopped. Two months prior to his visit to our clinic, he

lost a very close relative and isolated himself for a month, after which the same symptoms were aggravated. He first visited our Arogya nature cure center in October 2015. His TM showed progressive signs of weakness of lower extremities and postural instability with severe pain; he rated himself with 8 in the visual analog scale (VAS), and in the brief version of World Health Organization Quality of Life (WHO Brief QOL), he had poor physical and psychological health domains. He was physically dependent on his wife for almost all chores. He was not under any kind of medication; however, he was having some analgesics to get rid of the pain. He was unable to express his emotions rationally, but somehow he was communicating well. His wife was here to assist him in the day-to-day activities.

2.2. Physical examination

On physical assessment, the patient presented paraplegia with muscle power 2 out of 5. The patient had no movement at all in the toes bilaterally. The reflexes and tone were normal on examination. Proprioception and cutaneous sensations were impaired, especially thermal sensations. The patient was not able to stand without a mobility aid.

Table 1 Description of points selective for transverse myelitis.

SN no.	Needling points	Locations	Depth of needling
1	GB 34 (Yanglingquan) ^{*†}	In the depression anterior and inferior to the head of fibula	1.5 cun obliquely downward, forward, and medially
2	GB 39 (Xuanzhong)	3 cun above the tip of the lateral malleolus	1 cun perpendicular
3	St 32 (Femur futu)	6 cun above the superolateral point of the patella	1.5 cun perpendicular
4	St 36 (Zusanli) ^{*†}	1 cun lateral to the inferior end of the tibial tuberosity	1.5 cun perpendicular
5	St 37 (Shanqiuxu)	3 cun distal to St 36 (Zusanli), 1 cun lateral to the anterior margin of tibia	1.5 cun perpendicular
6	St 39 (Xiajuxu)	3 cun distal to St 37 (Shanqiuxu)	1 cun perpendicular
7	St 41 (Jiexi) ^{*†}	On the front ankle crease, midway between the tips of the malleoli, between the extensor digitorum longus and extensor hallucis longer tendons	0.5 cun perpendicular
8	UB 40 (Wiezhong)	At the midpoint of the popliteal crease	0.5/1 cun perpendicular
9	UB 62 (Shenmai)	0.5 cun inferior to the tip of the lateral malleolus	0.3/0.5 cun perpendicular
10	HT 7 (Shenmen)	At the transverse wrist crease, on the radial side of the tendon of the flexor carpi ulnaris	0.5 cun perpendicular
11	LI 11 (Quichi) [*]	At the outer end of the elbow crease when the elbow is semiflexed	1 cun perpendicular
12	LI 4 (Hegu) [*]	When forefinger and the thumb are adducted, at the highest point of the muscle on the back of hand	0.5–1 cun perpendicular
13	Du 14 (Dazhui)	On the back midline, between the dorsal spines of the seventh cervical and first thoracic vertebrae	1 cun perpendicular
14	Sp 6 (Sanyinjiao) ^{*†}	3 cun above the tip of the medial malleoli on the medial border of tibia	1 cun perpendicular
15	UB 36 (Chengfu)	In the middle of gluteal fold	1.5 cun perpendicular
16	Ex 21 (Huatuojiayi)	0.5 cun lateral to the lower ends of the dorsal spines from the first cervical to the fourth sacral vertebrae	1 cun perpendicular in the thoracic, lumbar, and sacral regions
17	Ex 36 (Bafeng)	On the dorsum of foot, 0.5 cun proximal to the borders of the webs between the five toes	0.5 cun oblique proximally

Remaining points were plainly retained for each session without any stimulation.

* Electrical stimulation (5 V; 80 pulses/s) alternating unilaterally on each side daily (except LI 4 and LI 11, which were stimulated in each session).

† Given on alternate days.

Q8

Table 2 Pre- and post-treatment test results.

Measure	Pretreatment results	Post-treatment results
Resting heart rate (beats/min)	80	76
Blood pressure (mmHg)	126/82	118/80
VAS	8	1
PSQI	18	9
WHO Brief QOL		
Physical health	33	94
Psychological health	13	56
Social health	69	75
Environmental health	14	63

A lower score on PSQI indicates improved quality of sleep.

Lower VAS shows reduction in physical pain.

A higher score on WHO Brief QOL indicates improvement in overall health.

PSQI = Pittsburgh sleep quality index; VAS = visual analog scale; WHO Brief QOL = brief version of World Health Organization Quality of Life.

When asked about pain, he reported a cramp kind of pain in both the legs, more in the right leg.

At the Arogya clinic, our patient was given electroacupuncture by one of the authors (R.L.S.). R.L.S. is an institutionally qualified naturopathy practitioner with 4 years of experience in administering therapeutic acupuncture. The traditional Chinese medicine style of acupuncture was used for our patient. He was informed about the needling sensations, procedure, and response sought. A modified protocol of acupuncture was established considering symptomatic management as the primary goal. A combination of specific points along the meridians such as gall bladder, stomach, heart, and spleen, and a few from extra meridians were chosen (Table 1) seeking de qi. Acupuncture points LI 11, LI 4, GB 36, ST 36, and SP 6 treated with electric stimulation (5 V; 80 pulse/s) using an ACS acupuncture electrostimulator. Needles in other points were retained for 30 minutes without stimulation.

Q5

Additionally, yoga and lifestyle counseling was provided to our patient. As it was an in-patient setup, the diet was especially taken care of; a naturopathic diet was prescribed for the patient, emphasizing on increased intake of fiber-rich food and water. The acupuncture treatment was given daily, and each session lasted for 30 minutes. The total duration of acupuncture in 3 weeks was 15 sessions, with 5 days rest period after eight sessions. This rest for a week is traditionally indicated for improvement and adaptation. We used 1 cun filiform locally manufactured stainless-steel needles with 0.38 mm diameter and 25 mm length.

2.3. Evaluation

A detailed case history was taken after our patient consented to participate in the study. After initial counseling, resting blood pressure and heart rate measurements were recorded. Our patient was assessed on the WHO Brief QOL, Pittsburgh sleep quality index (PSQI), VAS, and a disease-specific measure of subjective health status. The WHOQOL-

brief instrument comprises 26 items [3]. This questionnaire includes all the domains: physical health, psychological health, social relationships, and the environment. A VAS was used to measure pain intensity among participants. The continuous scale comprised a horizontal or vertical [line, usually 10 cm (100 mm) in length, anchored by two verbal descriptors, one for each symptom extreme [4]. The participants indicated the intensity of pain on a scale of 0–10, where 0 and 10 corresponded to the minimum and maximum pain, respectively. PSQI is a 19-item self-rated questionnaire to assess the quality of sleep [5]. It also includes five-bed partner or roommate questions, which are not included in the scoring. Baseline and post-treatment measures are summarized in Table 2. Our patient has shown palpable improvement in pain scale and sleep quality, as previously cited in another paper. He also showed overall upgrading in quality of life; particularly, significant improvement was shown in physical and psychological health domains.

Q6

2.4. Literature review

Acupuncture treatment in humans has not been studied thoroughly; however, there is a case study suggesting acupuncture as a treatment option for pain and insomnia in TM, which may interfere with their rehabilitation program [6].

3. Discussion

A 21-day electroacupuncture protocol was given to our patient with TM, which improved the health status and disease impact on WHO Brief QOL without the intake of any kind of medication.

The improvement in overall scores of WHO Brief QOL indicates a significant improvement in multiple dimensions of health. The patient showed a particular improvement in physical and psychological health dimensions of QOL. The improved results of VAS and PSQI indicate that the functional status was also improved. Disturbed sleep, being one of the most important keys in the rehabilitation of any neurological problems, deteriorates health by increasing pain, mood disturbances, and daytime sleeping. Improvement in sleep quality indicates a better prognosis. On the day of discharge, the patient reported better functioning saying that he has gained the ability to do most of the day-to-day chores and expressed subjective happiness.

4. Conclusion

To the best of the authors' knowledge, this is the first study to show acupuncture as the mainstream treatment with amelioration of symptoms, thereby improving the health status of patients with TM. A 21-day electroacupuncture protocol improved the functional status and quality of life of an individual with TM visiting our inpatient Arogya clinic. He showed signs of satisfaction with an increased interest in socialization, which was affected previously. He is currently under follow-up since 2 months with the same status as it was during discharge. Even though the results

are encouraging, further studies need to be carried out on a larger sample size and with better designs for validation.

Disclosure statement

The authors declare that they have no conflicts of interest and no financial interest related to the material of this manuscript.

References

- [1] Altrocchi PH. Acute transverse myelopathy. *Arch Neurol.* 1963; 9:111–119.
- [2] Kerr D. Transverse myelitis. In: Johnson RT, Griffin JW, McArthur JC, eds. *Current Therapy in Neurologic Disease*. 6th ed. St Louis: Mosby Inc; 2002:176–180.
- [3] Skevington SM, Lotfy M, O'Connell KA. The World Health Organization's WHOQOL-BREF quality of life assessment: psychometric properties and results of the international field trial. A report from the WHOQOL group. *Qual Life Res.* 2004;13: 299–310.
- [4] Bijur PE, Silver W, Gallagher EJ. Reliability of the visual analog scale for measurement of acute pain. *Acad Emerg Med.* 2001;8: 1153–1157.
- [5] Smyth C. The Pittsburgh sleep quality index [PSQI]. *J Gerontol Nurs.* 1999;25:10.
- [6] Vaghela SA, Donnellan CP. Acupuncture for back pain, knee pain and insomnia in transverse myelitis—a case report. *Acupunct Med.* 2008;26:188–192.

UNCORRECTED PROOF