

Efficacy of acupuncture for the treatment of sciatica: A case report

S Vijaykanth¹, N Mangaiarkarasi², P Prabu³

From ¹Post Graduate Scholar, ²Head, ³Assistant Medical Officer/Lecturer-II, Department of Acupuncture and Energy Medicine, Government Yoga and Naturopathy Medical College and Hospital, Chennai, Tamil Nadu, India

Correspondence to: Dr. S Vijaykanth, Department of Acupuncture and Energy Medicine, Government Yoga and Naturopathy Medical College and Hospital, Chennai - 600 106, Tamil Nadu, India. E-mail: vjbnys@gmail.com

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ABSTRACT

Sciatica is a common type of pain affecting the sciatic nerve, a large nerve extending from the lower back down the back of each leg. Depending on where the sciatic nerve is affected, the pain may also extend to the foot or toes. We report the case of a 53-years-old male patient with sciatica pain for 1 year that started after lifting heavy weight. This case study was done to investigate the effectiveness of acupuncture for relieving sciatic pain. The treatment was given for 10 days. Gall bladder 30, urinary bladder (UB) 40 and UB 60 acupuncture points were used in this treatment. According to the findings of the visual analog scale, the pain symptom score changed from 8 to 2 after 10 days of treatment. This result has been proven the efficacy of acupuncture treatment for sciatic pain relief in this case. Under this case study, we can conclude that acupuncture techniques are beneficial to enhance the recovery stage of pain related to sciatica.

Key words: *Acupuncture, Pain-relieving, Sciatica*

Sciatica is a syndrome rather than a specific diagnosis [1]. In 90% of cases, sciatica is caused by a herniated disc with nerve-root compression [1]. The prevalence ranges from 1.2% to 43% [2]. A number of risk factors are thought to be associated with the first-time incidence of sciatica and influence the development of sciatica; these include smoking, obesity, occupational factors, health status, age, gender, and social class [3,4]. According to Traditional Chinese Medicine (TCM), sciatica belongs to the gallbladder meridian of the foot Shaoyang (gall bladder [GB]) and the bladder meridian of the foot-Taiyang (BL).

In the present study, acupuncture was adopted for the treatment of sciatica to observe the change of pain threshold and the improvement of clinical symptoms and signs. Since sciatica is a “Channel Disorder” (dysfunction in the meridian) of the GB and urinary bladder (UB) meridians, acupuncture points removes channel obstruction, promotes Qi, and blood circulation of GB and UB which are indicated to treat the pain [5].

CASE REPORT

A 53-years-old male presented to the department with chief complaints of lower back pain with tingling, numbness, and muscle weakness of the right leg. The pain started after lifting heavy weight 1 year before. The pain was severe in intensity, non-continuous, radiates to the right hip, thigh, and calf muscles until the big toe, aggravates with movement and prolonged sitting, and relieved after taking rest.

On physical examination, the vitals were stable. The lumbar range of motion (low back movement) was diminished and painful.

A decrease in sensation over the dorsum (back) of the right foot and toes and a mild weakness of the right extensor hallucis longus muscle (extend your big toe) were noted. Palpatory tenderness was noted over the right sacroiliac joint, right gluteus maximus muscle and the right lower lumbar paraspinal muscles (low back and buttock muscles). Straight leg raising test induces more pain in the right leg. Right straight leg raising test was positive to 30 degrees. Other neurological examinations were unremarkable. The spinal examination demonstrated joint dysfunction and palpatory pain at the L4-L5 functional unit and the right sacroiliac joint. The pain level was 8/10 according to the visual analog scale (VAS) after waking up in the morning. The score gets better over the day but worsen again by the end of the day.

On the basis of spinal examination and VAS score, a diagnosis of sciatica was given. In this case, the treatment with acupuncture was performed with filiform needles (0.30 mm in diameter and 60–75 mm in length) at the routinely sterilized points of Huantiao (GB 30), Weizhong (BL 40), and Kunlun (BL 60) on the affected side [6]. The uniform reinforcing-reducing manipulation was given to induce the needling sensation. The treatment was given once a day for 10 days continuously without break. All needles were retained in place for 20 min.

After 5 days of treatment, the patient reported improvement in the pain; sensation was nearly equal over the dorsum of both feet and toes. On the 7th day, he reported improvement and demonstrated a better ability to stand and walk. After 10 days of the treatment, he reported that his low back pain was almost gone and that his leg pain no longer bothered him. The extensor hallucis longus strength improved. The VAS score dropped from

8 to 2. On subsequent follow-up after 3 months, the patient was asymptomatic.

DISCUSSION

Sciatica is a neuralgic disorder caused by nerve root compression and irritation or inflammation of the sciatic nerve. The disease is characterized by lower back pain which radiates to the leg [3]. Clinically, acupuncture is very effective for relieving sciatica pain. It has been demonstrated that acupuncture can make the brain and spinal cord release K⁺, Ca⁺⁺, 5-hydroxytryptamine, and opioid peptides which may change the composition of neurotransmitters to block the transmission of pain, thus showing the analgesic effect. In June 1979, the World Health Organization conducted a symposium on acupuncture in Beijing, China, and created a list of 43 diseases that might benefit from acupuncture and sciatica is one of these diseases [7].

According to TCM, Huantiao (GB 30) is a crossing point of UB and GB and sciatic nerve local point that can activate qi and blood of the two channels. Weizhong (BL 40), a converging point of UB, parasympathetic switch along the nerve distribution is good for treating lumbago. Weizhong (BL 40) and Kunlun (BL 60) as the distal points in the area of pain/along nerve distribution can regulate qi of the affected limbs and the lumbar region [5,8]. The effect of acupuncture can be induced by local stimulation of the tissue, thus resulting in the release of the inflammatory-related substances, vasodilatation, and the increase of serotonin and immune cells, as well as by a hypothalamus activation and related endorphins release [9]. In this study, the points for treating sciatica pain were selected from the GB and UB meridians which have shown a significant improvement in the pain. Liu and Chen conducted a systematic review of 14 studies revealed that the selection of meridians and acupoints is an essential issue to get better pain-alleviating results, and highlighted the strategy of concentrating on the UB and GB meridians [10].

In the present study, the acupuncture therapy was adopted for treating sciatica with better results possibly because the therapy can make the brain and spinal cord release K⁺, Ca⁺⁺, 5-hydroxytryptamine, and opioid peptides which can regulate the secretion of neurotransmitters to block the transmission of pain, accelerate blood circulation, and promote the resorption, transfer, and excretion of the above-mentioned active substances [11]. We chose VAS because it is commonly used to measure pain intensity [12]. The same was applied by several studies conducted in the past [13,14]. An interventional study conducted by Singh *et al.*, on 200 patients concluded that acupuncture provides effective relief

from sciatica pain [13]. A meta-analysis done by Ji *et al.*, surveyed 12 studies involving 1842 participants concluded that acupuncture was more effective than conventional western medicine [15].

CONCLUSION

Acupuncture is effective for the treatment of chronic pain and is, therefore, a reasonable referral option. In this case, the application of acupuncture was effective in the treatment of sciatica. Not only the pain but also the quality of life was improved in the patient.

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