Japanese Acupuncture - Current Research

Clinical Practice and Studies on Acupuncture for Lumbar Disc Herniation in Japan

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1. Introduction

Our research showed that in Japan the annual utilization rate of acupuncture treatment was 6.1%, whereas the life time utilization was 32%[1)]. Data did not show what percentage of patients with lumbar disc herniation (LDH) were included among these users. It is conceivable that since musculoskeletal problems are generally motivational to receive acupuncture treatment[2)], the acupuncture treatment may often have been used for this disease. In fact, we have often performed acupuncture treatment for LDH patients classified as within conservative treatment.

As with the generalization of the Evidence-Based-Medicine (EBM) in the present health-care arena, acupuncture treatment is no exception. In recent years, randomized controlled trials (RCT) have increasingly been conducted in Japan to demonstrate clinical evidence for effectiveness and safety of acupuncture treatments[3)]. As for the acupuncture treatment specific for LDH patients, sufficient clinical studies have not been carried out in Japan. This report provides the summarization of the current status of clinical studies in Japan on the use of acupuncture for LDH and explanation of the detailed methods of our acupuncture treatments.

Acupuncture is not a direct approach to LDH, a morphological abnormality. Rather, it is a treatment for pain in the low back or lower extremities caused by such abnormality. Therefore, this report presents, in the strict sense, "acupuncture treatment for lumbar radiculopathy or sciatica due to LDH".

2. Case series studies on acupuncture for LDH in Japan

Although only a few RCT reports have been published so far on acupuncture treatment on patients with LDH[4,5)], RCT's in the relevant area have yet to be carried out in Japan. However, in Japan there are three case series studies in which changes in subjective symptoms and clinical findings before and after the acupuncture treatment on patients with LDH were compared.

The first was the analysis performed by Maruyama[6)] of 47 cases (male 29, female 18, mean age 34.2). Acupoints were selected from BL40, BL54, BL36, BL57, BL60, GB34, BL23, Ex36 (Huatuojiaji), Ah-shi points and others and electroacupuncture (1-5Hz, 15-20 min per session, 2-4 times per week) were given. The treatment results were classified in 4 grades: Excellent、Good、Fair、Poor. Fair and above or a certain degree of improvement was observed with a rate of 72% in the single acupuncture treatment group and 83% in the combination group of acupuncture and conservative therapy. Patients at a younger age, or with a shorter duration of the disorder, tended to show favorable results, whereas patients with a longer duration of the disorder had a tendency to show better results by the combination therapy. Objective findings of the report indicated a high rate of improvement in a straight leg raising (SLR) test and a low rate of improvement in sensory disorder and abnormalities in deep tendon reflex.

The second was the analysis performed by Yamashita et al.[7)] of the data on 22 cases (male 14, female 8, mean age 37. accumulated at Tsukuba College of Technology Clinic (current Center for Integrative Medicine, Tsukuba University of Technology). Points used were BL25 on the affected side, 2cm lateral to BL25, BL26, center of

buttocks, BL37, GB34, and electroacupuncture (1Hz, 15 minutes) and manual needling were given. The course after the acupuncture treatment showed a 68% improvement. In the third week improvement was assessed with the Japanese Orthopaedic Association Score (JOA Score)[8]: subjective symptoms 39%、clinical signs 31%、activity of daily living (ADL) 52%, SLR-positive angle 75.5° from 59.3°, pain score 3.8 from 10 of an initial level (all are average values). Patients who already had a long history of the disorder at the initial treatment, or the patients who had not been responsive to nerve blocking, tended not to show favorable treatment results.

The third was the analysis by Nakazawa[9] on 29 cases (male 14, female 15, mean age 54.8), from which data were gathered at the Department of Oriental Medicine, Saitama Medical School. The needling was performed in the proximal areas of nerve root, facet joint, upper buttocks, and piriform muscle and electroacupuncture or needle retention method was applied. Assessments were made on the basis of pain score, visual analogue scale, sensory and manual muscle test, pain in motion, and SLR test. The rate of improvement after the treatment was 82.7% and the patients who reportedly had weakness in the lower extremities or developed the sickness after a traffic accident remained unchanged.

The above three case series studies reveal the following characteristics in the acupuncture treatment on LDH:

1) About 70-80% of the patients showed improvement.

2) Patients with shorter duration of the disorder tended to be easily healed.

3) Younger patients showed better results.

4) Improvements in deep tendon reflex or muscle weakness were slower than that in subjective symptoms or ADL.

These tendencies however, may not be limited to "the cases of acupuncture treatment" and will generally be seen in the physical treatment or conservative treatment. Case series study is not a method of study to prove the specific effects of acupuncture and moxibustion treatment (whether getting better due to acupuncture and moxibustion). It should be noted that the cases that showed improvement due to natural course or placebo effect were included. In the future, pragmatic RCTs[10] that compare effects of different treatments such as traction and drugs should be conducted.

3. Case reports[11),13)]

Case 1

Age 26, Male, Height 172cm, Weight 70kg, Pain in right lumbar and lower extremities

History: The patient was a postgraduate student who would sit on a chair while typing his thesis on his computer for 5-6 hours every day before the onset. Six days ago when he sneezed in a semi-crouching position, pain in the right lumbar and lower extremities and a sensation of numbness appeared immediately. He was given transcutaneous electrical nerve stimulation, traction, and medication by his neighboring physician (orthopedic surgery) and was instructed to wear a corset. Although the pain was slightly relieved, dull pain and numbness feeling remained and his first visit was made with a desire for the treatment of acupuncture and moxibustion. In his daily life, he could neither drive nor keep sitting on a chair for long hours due to the pain.

Findings: In keeping the standing position / sitting position, dull pain and numbness in the lateral surface of the right lumbar / buttock, posterior and lateral surface of the right leg became more intense. Neuralgic scoliosis was observed. SLR was 60°(+) in the right, 90°(−) in the left. Manual muscle testing (MMT) : Right

long extensor muscle of thumb 4、left 5. Patellar tendon reflex (PTR) and Achilles tendon reflex (ATR) were normal without difference between the right and left. Cutaneous sensory perception: Hypalgia was observed in the region from the lateral surface of the right leg to the lateral surface of the right foot (S1 region). Tenderness was prominent in the bilateral BL23 and the right BL25.

Examination: MRI examination revealed posterolateral lumbar disc herniation between L4/5.

Treatment and course:

Until the third visit (5th day), electroacupuncture (1Hz 15 min.) was continued on both sides of BL23 and BL25 with the needle of 60mm No. 25. After this treatment, the patient could have almost a full day of relief. However, since the analgesic effect did not last long, the level of the tenderness was re-assessed on the 4th visit or the 8th day and electroacupuncture (1Hz 15 minutes) was given in the 4 acupoints proximal to the right BL25 where tenderness was most pronounced. After this treatment, the pain subsided and only the sensation of numbness was left. On the 5th visit, or the 11th day, the neuralgic scoliosis disappeared. Numbness in the foot region still existed so that the treatment was continued once a week on average. On the 14th visit, or the third month, the condition returned nearly to the one before the episode. Then the treatment was discontinued.

Comments: Pain was relieved right after electroacupuncture was practiced in the point of maximum level of tenderness proximal to the surrounding of the right BL25. Since this experience, I have sensitively been trying to find tenderness points surrounding BL25 in lumbar radiculopathy cases also in an attempt to test repeatability. I have the impression that in case tenderness is prominent at the proximity of BL25, especially at the location slightly outward, and the tenderness is diffused upon pressure. Needling into these points immediately provides an analgesic effect, although it depends on cases.

Case 2

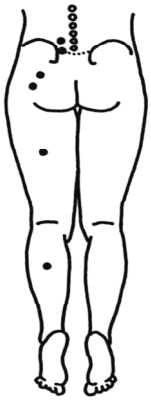
Age 55, Male, Height 165cm, Weight 79kg, Pain in the left lumbar and lower extremities

History: For two weeks the patient felt lumbar pain without any trigger. Poultices relieved the pain gradually. However, five days ago, a tense sensation and pain in the left lower extremity were added. The patient visited the orthopedic surgery department of a general hospital, and was diagnosed with disc space narrowing by plain roentgenography and prescribed transcutaneous anti-inflammatory gel. However, since no improvements in the symptoms were obtained, the patient visited our hospital to have treatment with acupuncture and moxibustion. The patient had been using medication for high blood pressure for the previous 10 years. For much of his working time, he was sitting or driving.

Findings: The patient had a tense sensation in the posterior surface of the left thigh and leg and sometimes awoke during the night time due to pain. No numbness sensation was present. Standing on tiptoes: Right capable, left difficult. Standing on heels: Right and left capable. SLR test: Right 80° (−), left 70°(+). ATR: Right (+), left (−). PTR: Both right and left (+). Cutaneous sensory perception in the lower extremities: Pain sense and tactile sense – right and left no difference. MRI examination identified disc herniation posterolateral in L5/S1.

Treatment and course: Electroacupuncture (1 Hz 10 min.) was performed with the stainless needle of 60mm No. 25 at the points connecting left BL25 and left BL26 where tenderness was marked; upper and lower regions of the center of the left buttock; and left BL37 and BL57 (Figure).

Figure:
Points frequently used in electroacupuncture for LDH



From the initial treatment the pain score was reduced from 10 to 1. Treatment was continued once a week. After three weeks, pain disappeared although a heavy sensation remained. Standing on the left toes was enabled on the 27th day from the initiation of the treatment or about a month after the onset of symptoms in the lower extremities. At the time, the left ATR, however, was (-). On the 40th day, i.e. the 7th visit, the patient was instructed to reduce weight and the treatment was completed.

Comments: This case can be considered as S1 radiculopathy due to LDH. Electroacupuncture at the acupoints of the bladder meridian or those along with the distribution of the sciatic nerve remarkably reduced pain. However, recovery of objective findings such as muscle strength (standing on toes) and ATR was slow compared to subjective symptoms. This tendency will be the common course in treating radiculopathy.

Conclusions

Currently, sufficient volumes of clinical evidence of acupuncture treatment for LDH patients have not been presented. Evidence confined to case series studies suggest that acupuncture treatment can be applied at least as an analgesic means for lumbar radiculopathy. We have the impression that as the above two cases typically demonstrated, acupuncture treatment is characterized by an analgesic effect that lasts for a certain period of time immediately after the treatment. Although the action of pain relief does not necessarily mean a cure of lumbar radiculopathy, the characteristic of pain relief effect right after the treatment merits clinical attention when compared to other conservative treatments. Judging from case series studies conducted so far and case reports released, there are sufficient reasons that more RCTs on acupuncture for radiculopathy due to LDH need to be conducted in Japan.

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