

## AcuChiro Therapy for LumboSacral Disorders - A Case of Lumbar Disc Herniation and Lumbarization

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### Abstract

**Objective:** Patient chiefly complained of low back pain radiating to right foot with numbness, causing him to fidget and move the foot constantly. AcuChiro Therapy for diagnosis and treatment of lumbosacral disorders is to treat not only the symptoms but also the root cause.

**Methods:** Spinal examination revealed a tenderness on right side of L5 and S1 with shooting pain down to right leg. A distinct numbness and tingling localized around the right anterior plantar foot, suggesting L5 or/and S1 nerve root compression. MRI not only confirmed a disk herniation but also found the lumbarization of S1. With spinal instability of congenital lumbarization, trauma induced disc herniation, caused LumboSacral disorders, and blocked UB and GB channels. The acupuncture points are mainly the L3-5 of Huatuoji points, including the trigger points of multifidi and erector spinae. AcuChiro Therapy ware was applied with optimization of acupuncture, chiropractic/tuina, stretching and exercises according to patient's conditions.

**Results:** Patient has completed the revised treatment plan of AcuChiro Therapy, with the optimized acupuncture and lumbosacral muscle exercises, focuses on strengthening muscle strength, thereby increasing the stability of the spine. Patient has no lower back pain and mild pain limited in the little toe of right foot. He has been able to exercise at home on his own.

**Discussion:** Patients with lumbarized sacrum are more likely to suffer from lower back injuries and degenerative spinal diseases. AcuChiro Therapy is for the diagnosis and treatment of lumbosacral disorders, and it may treat not only the symptoms but also the root cause.

**Keywords:** AcuChiro Therapy; LumboSacral Disorder; Lumbarization; Lumbar Disc Herniation; Acupuncture; Chiropractic

Date of Injury: January 13, 2015

Date of First Clinical Evaluation: February 16, 2015

Date of Discharge: April 25, 2015.

Sex: Male. Age: 53 year old. Height: 6'1". Weight: 150lbs.

### Chief complaint

Patient chiefly complained of low back pain radiating to right foot with numbness.

### Current medical history

Patient's low back pain occurred bilaterally, and on the right worse than the left side. The pain was described as a constant, sharp, ache with shooting pain radiating down the right leg and into the plantar aspect of the foot. The right foot also experienced numbness and tingling, a sensation that caused the patient to fidget and move the foot constantly. Low back pain was worse when standing or sitting, especially for extended periods of time. Symptoms were further exacerbated by bending at the waist

or rising from sitting to standing. Many activities of daily living provoke the low back pain, including lifting groceries, emptying the dishwasher and cleaning up for his children. Pain was worse in the evenings especially at the end of the work day. Mid-back and neck pain was described as dull and achy accompanied by muscle stiffness. Palpations of muscles in the thoracic and cervical spine produced pain and were assessed as ropy and hypertonic.

Prior to seeking care at our facility, Patient was seen by another healthcare acupuncturist. He achieved some relief of symptoms, however lasting relief of pain was not attained. At that point Patient was not prepared to commit to any invasive procedures and decided to try other conservative treatment approaches.

The above mentioned symptoms affected his ability to sleep as well as execute his activities of daily living as a father and as an engineer at work. These complaints followed shortly after an auto accident that occurred on or about January 13, 2015. Following the accident, he was evaluated by his primary care physician.

### Past medical history

Prior to this injury, Patient enjoyed a healthy lifestyle suffering from nothing chronically.

### System review

- Sleep: Sleep is affected by CC. Grinds teeth.
- Energy Level: Low.
- Head, EENT: Patient complained of migraines in their history.
- Genito-urinary: N.
- Cardio-pulmonary: N.
- Temperature/perspiration: N.
- Emotional: Anxious.
- Current medications and supplements: Pain killers and muscle relaxers.
- Bowel movement: Stomach pain.
- Diet and nutrition: N.
- Gynecological: N/A.

### AcuChiro examination

- Blood pressure was 109/71 mm Hg. Pulse was 90 beats per minute. Respirations were 20 breaths per minute at regular rate and depth.

- Appearance: N.
- Posture: Anterior slouch.
- Palpation: Tender to touch on right side of L5, S1 with shooting pain down to right leg.

### HEENT

The head was normocephalic. Pupils were equal, round, and reactive to light and accommodation. Ear and nose exams were unremarkable. Palpation of the throat revealed tight, highly reactive, ropy, and spasmed cervical musculature circumferentially.

### Cardiovascular/chest/abdomen

Auscultation revealed no rales, rhonchi or wheezes. No friction rubs were appreciated. No murmurs were heard. Abdomen was supple however tender to palpation. Bowel sounds were unremarkable.

### Orthopedic examination

Range of motion and orthopedic tests were as follows.

### Cervical spine

Ranges of Motion:

- Flexion is 40° (normal 60°) - stiffness in the C/T junction
- Extension is 25° (normal 50°) - mild pain and pinch
- Left flexion is 20° (normal is 40°) - moderate pain
- Right flexion is 10° (normal is 40°) - moderate pain and muscle spasm
- Left rotation is 50° (normal is 80°) - mild pain and muscle stiffness
- Right rotation is 60° (normal is 80°) - mild pain and stiffness.

### Lumbar spine

Ranges of motion

- Flexion is 40° (normal is 90°) - major pain and increase in radiating pain down to right leg and foot
- Extension is 20° (normal is 30°) - major pain and pinch along the L/S junction
- Left flexion is 15° (normal is 20°) - moderate pain and muscle stretching

- Right flexion is 10° (normal is 20°) - major pain
- Left rotation is 15° (normal is 30°) - moderate pain and stiffness
- Right rotation is 15° (normal is 30°) - major pain, especially at end range.

### Orthopedic tests

- Bechterew Test (Straight Leg Sitting) - Positive Right - suggestive of bulging disc, leg extension greatly increases low back pain.
- Lasegue Test (Straight Leg Raise) - Positive, suggestive of lumbar or sacral dysfunction including nerve root compression or bulging disc. Right side (+) at 45° with concomitant pain shooting down the right leg as well as increased numbness and tingling along the plantar aspect of the right foot. MRI dated 02/21/2015 confirmed disc protrusion.

### Neurological examination

The patient was alert and oriented x4 to person, place, time, and situation. Deep tendon reflexes were graded (Wexler's scale) within normal limits at all stations. All muscles tested were plus five universally on the Oxford or Van Allen's scale (+5 means full range of motion against resistance). Vibration and proprioceptive tracts were intact bilaterally. Babinski's sign was plantar bilaterally ruling out an upper motor neuron lesion. Romberg's test was negative, both with eyes open and eyes closed. All twelve cranial nerves were equal and symmetrical bilaterally with no abnormal findings. Most sensory dermatomes tested were within normal limits bilaterally with the exception of the right side L5 and S1 dermatomes. The patient reported a distinct numbness and tingling felt over the anterior plantar aspect of the right foot, localized around the metatarsals and phalanges.

### TCM examination

Tongue: tongue pink with red tip and white coat, sublingual veins distended. Pulse: tense.

### Radiology (Picture 1)

Lumbar spine MRI, 02/21/2015.

**Picture 1:** MRI not only confirmed a disk herniation but also found the lumbarization of S1.

- L1/L2: Mild loss of disc, ligamentous thickening and facet changes.
- L2/L3: Moderately loss of disc, posterior annular tear, 2-3 mm left disc protrusion.
- L3/L4: Mild loss disc height, annular tear, 2-3 mm left protrusion, contacting the L4 nerve root.
- L4/L5: 3 mm central disc herniation, spinal canal stenosis, results in bilateral L5 symptoms.
- L5/S1: 3-4 mm protrusion, moderately severe compressing the right S1 right > left.
- S1/2: Transitional lumbar segment.

### Diagnosis

- Sciatica
- LumboSacral Disc Herniation
- Spinal stenosis, lumbar region
- Cervicalgia

### TCM diagnosis

- LumboSacral disorders.
- Herniated disc blocking UB and GB channels.
- Etiology and Pathogenesis: Due to trauma induced disc herniation, based on spinal instability of congenital transitional segment at level lower lumboSacral region.

- Diagnosis Rationale: There is a probably correlation of the constant, sharp ache radiating down the plantar aspect of the right foot, with L5 or/and S1 nerve root compression.

### Treatments

AcuChiro Therapy were applied with optimization of acupuncture, chiropractic/tuina, stretching and exercises according to patient's individual conditions:

- Acupuncture to unblock UB and GB channels, invigorate the blood, tonify kidneys and strengthen tendons.
- Acupoints: Huatuojiayi L3-5/TrPs multifidi and erector spinae; Qihaishu (BL24), Dachangshu (BL25), Guanyuanshu (BL26); Yaoyangguan (GV3), Shiqizhuixia, Ciliao (BL32); Zhibian (BL54), Huantiao (GB30), Chengfu (BL36), Yinmen (BL37); Yanglingquan (GB34), Juegu (GB39), Qiuxu (GB40), Zulinqi (GB41); Weizhong (BL40), Chengshan (BL57), Kunlun (BL60), Shenmai (BL62).
- Acupuncture Method: Patient was rested in the prone position, Needles were 50 mm size (0.25mm gauge), and acupuncture needles were inserted into each point unilaterally or bilaterally and retained for 30 minutes. Needles were tonified (+) or sedated (-) using the clockwise and counter-clockwise needle rotation techniques respectively. Acupoint prescription sometimes varied from treatment to treatment, depending on the previous treatment responses and conditions presented at the time of the treatment.
- Traction to decompress intervertebral disc, and decrease the intervertebral pressure. Inversion traction was employed to take pressure off the injured nerves from surrounding malpositioned osseous structures and spasmed muscle as well as facilitate the process of imbibitions by lumbar discs.
- Manipulations to reposition the bones and joints, and restore normal range of motion. Side position. LumboSacral oblique on each side was used to restore normal motion in Patient's lumboSacral region.
- Exercises to strengthen muscles of the lumboSacral spine. Pelvis rotation for "lumboSacral exercises": Forward rotate the pelvis, distend abdomen to inhale; backward rotate the pelvis, and contract the abdomen to exhale.

### Treatment outcomes

AcuChiro Therapy for this patient began on February 16, 2015. The patient showed the same good results as average patients in the initial stage. However, during the course of treatment, symptoms recurred. The MRI report on February 21, 2015 explains the reasons for this result: i.e., the spinal instability caused by congenital lumbarization of S1.

The revised treatment plan, with the combination of acupuncture and lumboSacral muscle exercises, focuses on strengthening muscle strength, thereby increasing the stability of the spine.

Patient has completed the AcuChiro Therapy on April 25, 2015, with no lower back pain, and mild pain limited in the little toe of right foot. He has mastered the training suitable for his lifestyle. He has been able to exercise at home on his own, performing lumboSacral stretches and muscle strengthening exercises that he feels tolerable.

### Chronological treatment outcomes are described below:

- 02/16/15: Neck pain was described as being a 6-7/10 in the past week, back pain was 5/10. After treatment patient reported a decrease in pain and increase in lumbar range of motion and sensation, and very relaxed.
- 02/21/15: Patient felt a decrease in pain (5/10) following first treatment, however relief was short and pain returned the following day. Numbness and tingling in right foot (5/10) is less pronounced.
- 02/23/2015: Lumbar range of motion has improved in regards to flexion. Patient is able to flex further forward and feels less pain and pinching upon returning to an upright position (5/10).
- 02/27/2015: Pain in the lumbar spine as well as radiating pain (4/10) down the leg has decreased in intensity. Area of numbness and tingling (5/10) on the plantar side of the right foot has decreased in size.
- 03/02/2015: Patient continues to improve with less pain (4/10).
- 03/16/2015 (3-4/10): Patient is better able to perform his ADL's including bending forward to lift objects off the floor. Lumbar extension has improved and produced less stiffness.

- 03/23/2015: Lumbar lateral flexion has improved bilaterally with little pain. Pain is mainly in right foot (3/10). Treatment sessions effects are lasting longer periods of time with a positive outcome.
- 03/30/2015: Rotation in the lumbar and thoracic spine has increased with less stiffness. Trial run of kinetic activities next session is patient's pain level less than 4/10.
- 04/06/2015: Trial run of kinetic activities occurred today. Patient was able to complete the entire session, however he was already experiencing adverse effects and elevated pain levels (3/10) at the end of the activities session.
- 04/13/2015: Following kinetic activities session last visit patient continued to experience pain (3/10) and muscle tightness for several days. Discontinue active care at this time.
- 04/20/2015: (3/10). Patient has been given at home lumboSacral exercises in lieu of active care. These exercises will assist in lumboSacral function without producing adverse effects of pain or inflammation.
- 04/25/2015: (3/10). Patient has been discharged from care at this facility with at home lumboSacral exercises.

## Discussion

Though not directly lead to spinal diseases, patients with lumbarized sacrum are more likely to suffer from lower back injuries and delayed healing of the injury; as they age, patients with lumbarized sacrum are more likely to suffer from spinal degeneration and degenerative spinal diseases.

Annulus fibrosus tore at multi-segment level and resulted in loss of intervertebral disc height, suggesting disc degeneration and degenerative disc diseases. Spinal degeneration begins in the intervertebral discs, and degenerative disc diseases are included in a group of degenerative spinal diseases. In the upright movement of the human body, the primary function of the intervertebral disc is to absorb the vibration under the gravity. Degeneration and insufficiency of the intervertebral disc result in insufficient space for the distribution of the spinal cord and spinal nerve. Multiple spinal canal and intervertebral foramen stenosis, leading in compression of the spinal cord and spinal nerves, resulting in inflammation, radiating pain in the lower extremities, that is, numbness and tingling in lower extremities.

The sacrum plays the central role of the body's weight bearing and structure support [1]. The spine sits on the pelvis and supports the torso; the pelvis is the base on which the spine bears the weight. The sacrum is at the lower end of the spine, between the two ilia and is the center of the pelvic base of the spine. Logan Basic, a sacral-centered school of chiropractic, put a particular emphasis on sacral misalignment and pelvic distortions that affect the structure of the spine.

A lumbarized sacrum reduces the stability of the spine [2]. The main function of the spine is to support the body and bear body weight. The lower the spinal segment is, the heavier the burden it bears. The lumboSacral segments of the spine are the most significant for body weight. Fusion of the sacral vertebrae is required for structural stability to facilitate weight bearing. The sacral spine consists of 4 sacral vertebrae. In adulthood, the sacral vertebrae fuse to form a single sacrum to provide stability to the spine. Sacral lumbarization, usually a variant of the incomplete fusion of the S1 vertebra and other parts of the sacrum. Weight-bearing functions require stable structures. The lumbarized sacral vertebrae, also known as (sacrum) transition lumbar segments. The lumbarized sacral spine, which adds extra movement, is not conducive to the stable function of the spine to support weight-bearing.

The lumbarized sacral spine does not perform the full function of the lumbar spine, although it has additional movement. The S1 vertebra is neither a completely fused sacral segment nor a normal lumbar segment. Lumbarization of the sacral spine is often incomplete and may not be completely symmetrical on both sides. Difficulty cooperating with other vertebral joints and more susceptible to irritation and injury during activities of daily life. With age, patients with lumbarization have earlier degenerative changes in the spine and spinal degenerative diseases.

In the general patient population, active exercises can cause some muscle soreness. Patients with sacral lumbarization, such as Mr. S, often have delayed muscle soreness and increased inflammation, but these conditions should be differentiated from persistent chronic pain. The root cause of these conditions is that the lumbarized sacral spine reduces the stability of the spine.

AcuChiro Therapy is a unique clinical method that integrates Chinese and Western medicine for the evaluation, diagnosis,

treatment and prevention of spine and related disorders [3]. AcuChiro Therapy optimizes various diagnosing and treatment techniques. Acupuncture is able to ease the pain and muscle spasm at the early stage; acupuncture will stimulate and strengthen the muscles to stabilize the spine in a long term. Lumbosacral exercises is fundamental to restore and increase the stability of the spine. AcuChiro Therapy for diagnosis and treatment of lumbosacral disorders may not only treat the symptoms, but also treat the root cause [4].

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