



Case Report

Non-Contained 8.8 Mm Lateral Disc Extrusion Displacing S1 Nerve Root, With 7 Mm Migration Of The Extruded Disc - Successfully Treated With Cox® Decompression Manipulation And Acupuncture

by

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submitted in February 2014

INTRODUCTION

Non-contained 8.8 mm lateral disk extrusion that displaces the S1 nerve root featuring a 7 mm caudal migration of the extruded disk. This is complicated by disk bulges at L4-L5 and L5-S1.

The male patient, a 42 year old electrical engineer, presented to my office complaining of sharp left-sided low back pain that started approximately five years prior to his visit in my office. The patient has enjoyed riding motorcycles off-road for many years since he was a teenager. Upon intake of his case, I reported to him that under no circumstances was he to ride off-road during his treatment, and he may never ride again, depending on his progress. He agreed, and was very willing to give up riding motorcycles, if that was what it took to relieve his pain and heal.

PRESENTATION AND EXAM FINDINGS

Background: The patient had been exercising regularly, but had stopped recently. He reported that his core strength was diminished as a result of his decrease in exercise, and had contributed to the exacerbation of his low back pain. The patient reported the character of his pain to be sharp, and 10 out of 10 in intensity, (10 being worse 0 being none). His pain was also described as intermittent, and referring to his left buttock and left posterior thigh that worsened



at night. He reported paresthesias referring to his left posterior leg. Movement, walking, ice therapy, and stretching was reported to relieve his pain slightly. He did have recent history of traditional chiropractic manipulation done by another doctor of chiropractic, done in side-posture. The patient reported that no plain film X-Rays, nor an MRI of his lumbar spine had been ordered. He reported that his symptoms were worsening with the previous style of manipulation. He had no symptoms associated with his low back pain, and other than wearing glasses. The review of his systems and health history were unremarkable. The patient has a family history of disk herniation, as his mother had an HNP and had surgery of her L4-L5 disk. His father also complains of lumbar disk symptoms. The patient drinks alcohol socially and is a non-smoker. Both his initial and follow-up Functional Rating Indices are included in this case report.

I accepted his case, and immediately ordered an MRI, without contrast, of his lumbar spine to be done at American Dynamic Imaging, in Phoenix, AZ. This facility images the patient while sitting therefore allowing weight-bearing force to be imaged for interpretation. The patient expressed appreciation of the special and detailed care given to him in accommodating him in a timely fashion. The images were read by Gary Longmuir, D.C., D.A.C.B.R., MS., immediately, so the patient was able to receive treatment the same day.

HISTORY OF PREVIOUS CARE: This patient had treated with a chiropractor previously, who utilized a side-posture technique. The patient had reported that his condition had worsened over the 4-6 weeks treating with that chiropractor. He had decided to change methods of care, and searched for acupuncture therefore finding my office.

EXAMINATION FINDINGS (February 3, 2011): Although Robert's exam included tests for both upper and lower extremities, the findings of his lower extremities are reported in this case study.

- Vital signs were WNL
- Heart and lungs WNL
- Deep Tendon Reflexes including patellar, and ankle were +1 bilaterally. Plantar reflexes were negative bilaterally.

ROM Lumbar Spine:

- Flexion: 5/60
- Extension: 2/20
- Right Rotation: 2/5
- Left Rotation: 2/5
- Right Lateral Flexion: 5/25
- Left Lateral Flexion: 5/25

Muscle Strengths Lower Extremities:

- Hip Flexors Left: 3/5 with left buttock pain



- All others 5/5 bilaterally
- Note: Prior to orthopedic test of the lumbar spine, the patient reported lumbosacral pain on lying supine on the exam table.
- SLR – Right + Left with pain left lumbosacral
- Braggard's – Right + Left with pain left lumbosacral
- DLR + bilaterally with pain left lumbosacral
- Kemp's – Right + Left with pain
- Hibbs – Right + Left with pain left sciatic at the sciatic notch
- Toe Walk was negative Right and weak on the Left
- Heel Walk negative bilaterally

PRE-TREATMENT MRI FINDINGS

DIAGNOSIS: The patient presented for care with Leisa-Marie Grgula, D.C. on February 3, 2011, and after thorough examination, history, and seated MRI, the patient was diagnosed with a circumferential disk bulge at L5-S1, with an 8.8 mm uncontained lateral disk extrusion.

MRI ordered on February 3, 2011

Full report included in this case report. Impressions are as follows:

1. Degenerative disk disease and subchondral marrow signal alteration (as described in report)
2. Nuclear impression deformities, which are of no clinical significance.
3. Mild facet arthrosis at L2-L3 with thickening of ligamentum flavum.
4. Minimal broad-based disk bulge at L4-5 minimally effacing the ventral aspect of the thecal sac without involvement of the exiting nerve roots. There is mild facet arthrosis.
5. Broad based disk bulge at L4-5 minimally flattening the ventral aspect of the thecal sac and narrowing the inferior aspects of both neuroforamina. There is mild facet arthrosis.
6. Circumferential disk bulge at L5-S1 with a superimposed, uncontained lateral disk extrusion measuring 8.8 mm anteroposteriorly. This finding minimally effaces the ventral aspect of the thecal sac and posteriorly displaces the left S1 nerve root and features a 7 mm caudal migration. A sequestered fragment is not positively identified, however cannot be excluded on the basis of this study.



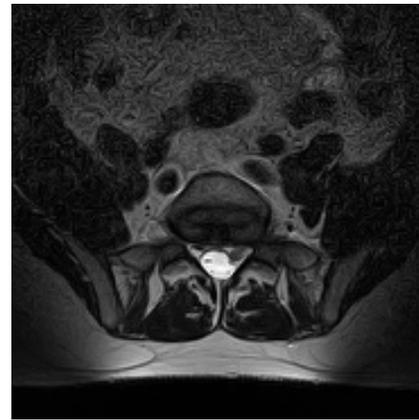
February 4, 2011 Sagittal T2 Weighted



February 4, 2011 L Parasagittal



February 4, 2011 Axial T2 Weighted



February 4, 2011 Axial T2 Weighted

TREATMENT

Chiropractic Course of Care: Cox® Flexion Distraction Decompression Manipulation Technic Protocol 1 with contact at L3-4 was initiated on the second visit. Tolerance testing was done without ankle straps prior to each visit. No Dutchman's Roll was used throughout this course of care. The first manipulation was done without the use of the ankle straps. They were used from the second visit through the end of the intensive phase of his care, which was 4 days per week for the first 10 visits, then should 50% relief occur, visits would be dropped to 3 times per week. This was indeed the case, and the course of care that was rendered. Interferential current with ice was administered with the patient in a seated position, at the lumbar level of L2 to the sacrum bilaterally for 10 minutes after manipulation. At 4 weeks, axial decompression was rendered to possibly assist in the tightening of the posterior longitudinal ligament. The patient responded positively to this each visit, throughout his care.



On the eighth visit, acupuncture was rendered at points UB 23, UB 25, UB 27, and UB 28, bilaterally. Dry needling was rendered at trigger points of both the quadratus lumborum and the gluteus minimus. Other points include UB 36, UB 37, UB 40, UB 57, and UB 60 on the left thigh and leg. At this point in the patient's care, he was lying prone, on a Body Cushion System that allowed his lumbo-pelvic area to be supported without affecting the posterior elements and disks of his lumbar vertebrae. The needles were applied for 20 minutes each visit. These points were needled each visit thereafter for the next 6 visits. (Due to the lack of insurance coverage, the patient refused further acupuncture treatments) The patient was in a prone position; interferential current was applied as reported above. Once acupuncture needles were used, the ice was applied to the lower thoracic and upper lumbar areas while the interferential current and needles were applied.

RE-EXAMINATION AND FINDINGS February 25, 2011 on the 11th visit (2 weeks into care)

The patient reported approximately 50% reduction in pain and other symptoms at this point

Palpation revealed less hypertonicity of the lumbar paraspinal muscles since last exam dated February 3, 2011

- Lumbar ROM
- Flexion 55/60 Pelvis 25/30
- Right Rotation 5/5 Patient reported "taught" down left posterior thigh and leg
- Left Rotation
- Right Lateral Flexion 25/25
- L Lateral Flexion 25/25

Muscle Strengths: Lower Extremities all 5/5 bilaterally

The patient reported no pain on lying supine prior to orthopedic tests:

- SLR - Left
- Braggard's – Left
- DLR – Bilaterally
- Kemp's – Left
- Hibbs + Left with pain at the left sciatic notch
- Adams – Bilaterally



From February 3, 2011 to March 28, 2011, this patient was seen for 41 visits. Of the 41 visits, he received 6 acupuncture treatments. He also received Therapeutic exercises starting with 15 minutes on a recumbent stationary bike, followed by 15 minutes using a 75 cm exercise ball. Cox® Exercises were given to the patient after the re-exam. He was instructed to do them twice daily, morning and night. No extension exercises were ever done by this patient during this treatment plan. The patient was compliant with his exercise program.

CONCLUSION

Discussion and Conclusion

It is my opinion that Robert's pain relief and increase in daily activities were contributed to by the use of the Cox® Decompression Manipulation Technic done by these above mentioned protocols, mainly Protocol I. According to Cox et al (1), chiropractic distraction manipulation is an effective treatment of lumbar disk herniation.

The patient had not used any prescription or over the counter medications throughout his care, and he had not received surgical intervention or physical therapy for this condition. Guadavalli, et al report that flexion distraction versus physical therapy, subjects randomly allocated to the flexion-distraction group had significantly greater relief from pain than those allocated to the exercise. (2)

References

1. Cox JM, Hazen LJ, Mungovan M: Distraction manipulation reduction of an L5-S1 disc herniation. *Journal of Manipulative and Physiological Therapeutics* 1993; 16(5):342-346
2. Gudavalli MR, Cambron JA, McGregor M, Jedlicka J, Keenum M, Ghanayem AJ, Patwardhan AG. A randomized clinical trial and subgroup analysis to compare flexion-distraction with active exercise for chronic low back pain. *Eur Spine J.* 2006 Jul; 15(7):1070-1082.



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Patient's Name:

Referred by: Dr. Grgula

Examination: Lumbar spine MRI without contrast.

Date Taken: 2/4/11

Date of Report: 2/4/11

Patient's Complaint: Low back pain and radiculopathy.

Patient's History: No recent trauma reported.

Protocol: Sagittal T1-weighted, T2-weighted, axial T1-weighted and T2-weighted lumbar images were obtained in the seated posture.

Findings:

MRI examination of the lumbar spine reveals the vertebral bodies to be of normal height, without acute fracture. Typed II subchondral degenerative signal alteration (increased signal T1, slightly increased signal T2) is observed at the inferior L5 vertebral margin. Lumbosacral disk space height is mildly diminished. Decreased signal is present at the L4-L5 and L5-S1 disks on the T2 weighted images. Vertebral body alignment is anatomic. Mild lumbar nuclear impression deformities are identified.

There is mild facet arthrosis at L2-L3 with mild thickening of the ligamentum flavum. A minimal broad-based disk bulge is present at L3-L4 minimally effacing the ventral aspect of the thecal sac. There is mild facet arthrosis at the same level. The neuroforamina are patent. A broad-based disk bulge is present at L4-L5 minimally flattening the ventral aspect of the thecal sac and narrowing the inferior aspects of both neuroforamina. There is mild facet arthrosis. A circumferential disk bulge is present at L5-S1 with a superimposed uncontained lateral disk extrusion measuring 8.8 mm anteroposteriorly effacing the ventral aspect of the thecal sac and posteriorly displacing the left S1 nerve root. There is an approximate 7 mm caudal migration of the extruded disk. A sequestered

(Cont'd)
Dr. Grgula
2/4/11

Findings, Cont'd:

fragment is not positively identified, however cannot be completely excluded on the basis of this study. The conus medullaris is of normal size and signal.

Impressions:

1. Degenerative disk disease and subchondral marrow signal alteration as described.
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G.A. Longmuir, DC, DACBR