LARGE L5-S1 DISC EXTRUSION RESULTING IN BOTH LEFT L5 AND S1 RADICULOPATHY TREATED WITH COX® FLEXION DISTRACTION AND DECOMPRESSION TREATMENT

respectfully submitted by Dr. Scott J Spengel DC
on 02/28/2022
6611 Burning Tree Circle
McHenry IL 60050
sspengel@comcast.net
815-245-6214

Summary: Large L4-L5 disc extrusion resulting in both left L5 and/or S1 radiculopathy with left gastroc weakness. Treatment delayed due to head injury which also caused exacerbation of above condition. Long-term follow-up showing return of S1 motor function, gastroc strength.

HISTORY:

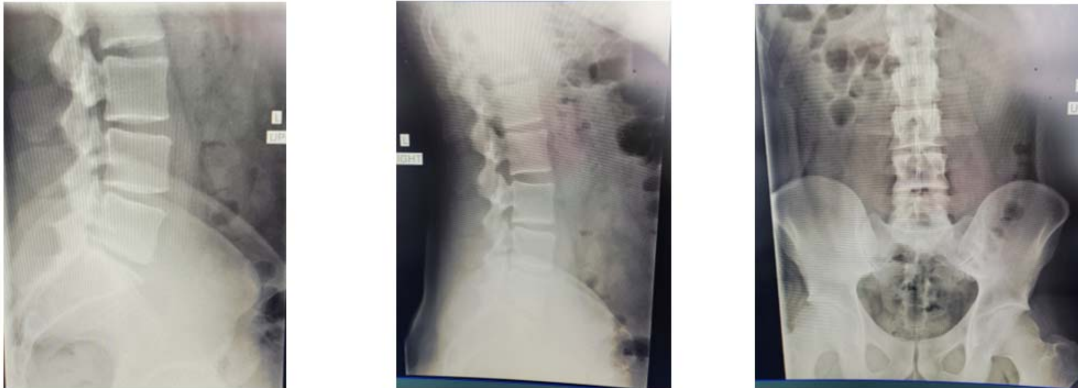
On 09/07/2019 31-year-old male presents with left lower back and left lower extremity pain extending to the calf. Numbness in the big toe and lateral aspect of the left foot. Symptoms began on 09/03/2019 while playing volleyball. He jumped to spike the ball and felt immediate pain in the lower back. Having had similar pain 5 years ago, he recalled chiropractic treatment with good results. Patient reported an increase in symptoms with prolonged standing, sitting or walking. He noted relief of symptoms when lying down. Symptoms were progressively worsening. Pain level was 8/10 and described as sharp, shooting, throbbing, numbness and tingling in the left leg.

EXAM - ORTHOPEDIC SIGNS:

Soto Hall test was positive for reproducing left lower back pain. Seated straight leg raise test was negative on the right and positive on the left at 60 degrees with the patient reporting significant left lower back and lower extremity pain. Kemp's test was positive bilaterally. Dejerene's triad positive reproduced lower back pain with cough or sneeze. Straight leg raise test was negative on the right, positive on the left at 60 degrees reproducing left lower back pain. Braggard's sign was negative. Patellar reflexes were 2+ bilaterally. Achilles reflex was 2+ on the right, absent on the left. Patient denies bowel or bladder dysfunction. Patient was able to heel and toe walk normally. Lumbosacral range of motion: Flexion 80 degrees, extension 20 degrees, right lateral flexion 15 degrees, left lateral flexion 10 degrees left and right rotation 30 degrees. Patient stated reproduction of symptoms upon flexion, extension, left and right rotation, left lateral flexion.

IMAGING:

Lumbar spine AP and lateral x-rays revealed: *Pelvic on leveling high on the right. Decreased lumbar lordosis. Mild narrowing of the disc space at L3-L4, L4-L5 and L5-S1. Displacement of vertebral bodies anatomically.*



DIAGNOSIS:

Intervertebral disc disorders with radiculopathy lumbar region. Lumbar spine radiculopathy left L5. Sacrococcygeal disorders. Lower back pain. Myalgia.

TREATMENT PLAN:

Following the review of x-ray and findings with patient, the following treatment was performed: biphasic muscle stimulation to the erector spinae bilaterally for the reduction of muscle spasm. Distraction tolerance test was passed for protocol 1 – no lateralization of pain was noted for central tolerance testing/no extremity contact/spinous process contact at L3, for lateral tolerance testing with uninvolved leg ankle contact/spinous contact, for lateral testing with involved leg ankle contact/spinous contact, and ankle cuff restraint. (1) Treatment proceeded with the 50% Rule guiding treatment frequency and application, meaning that when 50% relief was noted objectively and subjectively, treatment visits were reduced by 50% and protocol 2 range-of-motion spinal manipulation was incorporated. The patient was told that if 50% relief was not imminent within 4-6 weeks or progressive neurological deficits were apparent, advanced imaging and/or surgical consultation was considered. (2 page 453)

TREATMENT:

Biphasic muscle stimulation was applied to the erector spinae bilaterally. Flexion/distraction decompression was applied at the level of L3. Specific diversified technique was delivered at T10 and T12. Thompson drop technique was performed to the sacroiliac joints on the right and left.

OUTCOME PROGRESSION:

09/09/2019 Patient stated lower back was really good after treatment on Saturday. Pain was severe again on Sunday morning. Still numbness in the left lower extremity to the outside of the left foot, no longer in the big toe. Pain was 10/10 on Sunday, 5/10 today. Treatment remained the same at today's visit

09/11/2019 Patient stated the pain was much less in the lower back 4/10 at worst. He was more mobile. Still some tingling in the left foot but no radicular shooting pain in the left leg. Treatment remained the same on today's visit.

09/13/2019 Patient stated pain was better. Still tight and numb in the left foot, but he noted these were

slowly improving. Lower back symptoms were 2 to 3/10, no longer constant. Pain still increases when sitting or driving. Treatment remained the same.

09/17/2019 Patient stated the lower back was improving slowly. Some pain in the left lower extremity extending to the calf while driving 20 minutes or longer. He was however able to mow his lawn today using walking lower. He also returned to work today. Pain was 4/10. Treatment remained the same.

09/18/2019 Patient stated lower back was a little bit tight and sore today. Still slowly improving overall pain was 3-4/10. Mild numbness in the left foot. Right posterior thigh and lateral upper calf pain persists. Treatment remained the same.

Patient again presented on 10/21/2019. Gap in treatment due to head injury. An increase in complaints of lower back pain, bilateral posterior thigh pain as well as left foot numbness and tingling in the lateral aspect of the foot and heel were noted. On 09/20/2019 he was the backseat passenger facing backwards in a golf cart. When the golf cart turned quickly, he fell out of the cart striking his head against the pavement. He was rendered unconscious and taken to the hospital where he regained consciousness the next day. He was treated for skull fractures concussion as well as a brain bleed medically and eventually released.

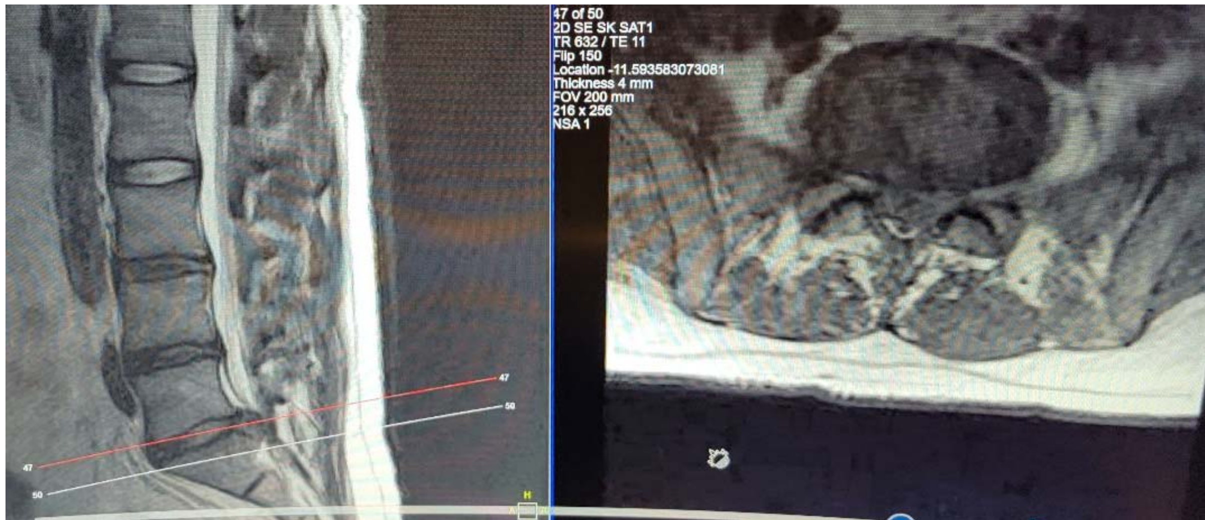
Lower back and lower extremity symptoms were increased upon sitting 30 minutes or longer, standing 60 minutes or longer. He noted some relief of symptoms when lying down. He denied bowel or bladder dysfunction. Dejerene's triad was negative. Left lower extremity felt weak in comparison to right. Pain level reported at 5/10.

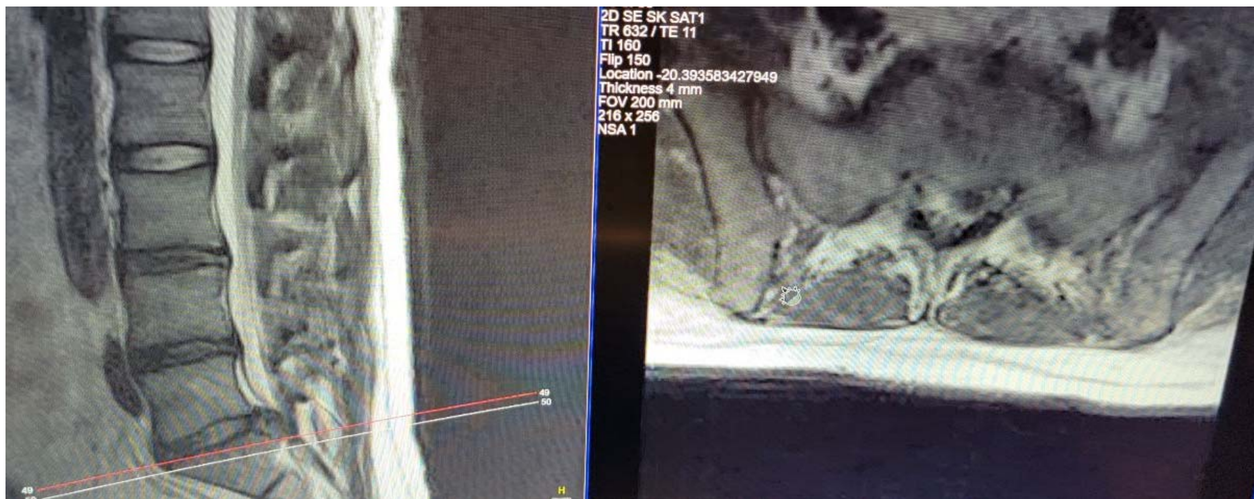
10/21/2019 RE-EXAMINATION FINDINGS:

Lumbosacral range of motion mildly decreased upon flexion. Straight leg raise test as well as seated straight leg raise tested negative bilaterally. Patellar reflexes 2+ bilaterally, Achilles reflex was absent bilaterally. Extensor hallucis longus, quadriceps, and hamstring muscle strength were 5/5 bilaterally. Patient was able to heel walk normally. Toe walk was within normal limits on the right, moderately weak on the left.

ADVANCED IMAGING:

MRI of the lumbar spine was performed on 09/23/19 revealing 2.5 x 0.9 cm posterior central disc extrusion at L5-S1 resulting in significant mass effect on the central canal, lateral recess and adjacent neural foramina. Involvement of all transiting/exiting nerve roots was suggested. Circumferential disc bulging at L3-L4 as well as circumferential disc/osteophyte disease at L4-L5.





TREATMENT CONTINUED:

Biphasic muscle stimulation was applied to the erector spinae bilaterally for the reduction of muscle spasm. Distraction tolerance test was passed for protocol 1 at L2. Flexion/distraction decompression at the level of L2 (following review of MRI findings), specific diversified technique at T10 and T12, Thompson drop technique to the sacroiliac joints on the right and left.

10/25/2019 Patient stated that he went back to work on Wednesday 10/23/2018. Lower back was feeling “pretty good” overall, 5-6/10. He felt better following treatment for approximately 24 hours and then symptoms gradually returned. Numbness in the left foot only, no other lower extremity symptoms. Recommendations included discussing MRI findings of disc extrusion at L5-S1 with his neurosurgeon. He was also informed that in situations such as his situation another opinion may be considered reasonable in order to help make an informed decision regarding future care.

10/29/2019 Patient stated that the lower back pain was improved, the best it has felt since returning to work. Decreased numbness and tingling in the left heel and lateral foot. Lower back pain was rated 4/10. Toe walk was still weak on the left but improved. He was instructed in recommended calf raise exercises, patient was instructed and observed performing bilateral toe raises with unilateral left negative exercise upon return. Treatment remained the same.

11/11/2019 He reported lower back pain only, improved overall 3/10. No left lower extremity pain. Patient reported that following consultation with his neurosurgeon surgery is not recommended at this time. He also recommended the patient consider a 2nd opinion. Flexion distraction decompression at the level of L2 now utilizing protocol 2. Treatment otherwise remained the same.

11/18/2019 Lower back was feeling good, very mild pain off and on 02/10. Patient was able to toe walk on the left now although still moderately weak.

11/29/2019 Patient reported lower back was feeling good, no pain. He reported no left lower extremity pain. Mild right lateral calf pain 1-2/10. No other right lower extremity symptoms.

12/04/2019 He reported lower back and left lower extremity are good. Right calf pain was better as well 1/10. Left calf strength continued to improve per patient.

12/11/2019 Patient reported no pain in the lower back, no left or right lower extremity pain. He was able to complete 2 repetitions of left unilateral calf raises.

01/13/2020 Lower back was reported as “okay.” Some right anterolateral calf pain and right buttock pain off and on. No left lower extremity symptoms. Symptoms are 4 to 5/10. Patient was able to complete 5 unilateral left calf raises today versus 10 repetitions on the right. Patient also reported a new complaint today. He reported that he woke up on 01/08/2020 with neck pain and tingling in the upper extremities bilaterally increased when flexing his head forward.

01/20/2020 Patient was evaluated for neck and upper extremity symptoms. This condition was outside the scope of this case steady. However, this did afford the opportunity to continue to monitor left lower extremity strength progression.

04/22/2020 At this fllow-up visit for above condition, calf strength was evaluated. Patient was able to complete 9 reps of single leg calf raises on the left and 10 repetitions on the right.

2/21/2022 He experienced an episode of increased right lower back pain extending into the right buttock and lateral calf after moving a dresser on 2/9/2022 which required lifting up into his truck. At this time, seated straight leg raise test was negative bilaterally. Heel and toe walk were also normal

bilaterally. Pain level of 4-5/10 was reported.

2/23/22 At this follow-up visit, he stated that his lower back pain was much better following treatment with occasional right lateral calf pain, though less intense and non-symptomatic most of the time, rated at 3/10 at worst.

DISCUSSION

This patient chose not to pursue a second opinion for possible surgical procedure. This wish to avoid surgery allowed us to continue treatment of this case with very good outcome. He still does have periodic lower back symptoms and in fact has continued with periodic maintenance treatments. Eklund et al discussed how effective maintenance care can be for patients with low back pain. In a randomized control trial of 319 such patients, maintenance care dropped the number of days with pain in acute episodes and improved the length of pain-free days for patients with recurrent and persistent low back pain. (3) This patient's trajectory exemplified how an established treatment plan and maintenance care within The Cox® Technic System of Spinal Pain Management was beneficial. (4) Lastly, 100% relief of pain and return to everything normal is not a realistic expectation as even medical minimal clinical improvement that would make an intervention to be worthwhile has been written as 30%. (5) This patient attained close to 70% and continued care to maintain and manage his back pain.

References:

1. Cox JM: Chapter 8: Biomechanics, Adjustment Procedures, Ancillary Therapies, and Clinical Outcomes of Cox Distraction Technique. In Cox JM: Low Back Pain: Mechanism, Diagnosis, Treatment 7th ed. Baltimore: Lippincott Williams and Wilkins, 2011. Pages 348-444
2. Cox JM: Chapter 9: Protocols for the Care of the Intervertebral Disc and Spinal Stenosis Patient. In Cox JM: Low Back Pain: Mechanism, Diagnosis, Treatment 7th ed. Baltimore: Lippincott Williams and Wilkins, 2011. Pages 445-515
3. Eklund A, Jensen I, Lohela-Karlsson M, Hagberg J, Leboeuf-Yde C, Kongsted A, Bodin L, Axén I. The Nordic Maintenance Care program: Effectiveness of chiropractic maintenance care versus symptom-guided treatment for recurrent and persistent low back pain-A pragmatic randomized controlled trial. PLoS One. 2018 Sep 12;13(9):e0203029. doi: 10.1371/journal.pone.0203029. eCollection 2018.
4. "The Cox® Technic System of Spinal Pain Management." https://www.coxtechnic.com/doctors/the-cox-technic-system-of-spinal-pain-management-1. Sourced on 6/8/22.
5. Konstantinou K, Dunn KM, Ogollah R, Lewis M, van der Windt D, Hay EM; ATLAS study team. Prognosis of sciatica and back-related leg pain in primary care: the ATLAS cohort. Spine J. 2017 Nov 21. pii: S1529-9430(17)31148-8. doi: 10.1016/j.spinee.2017.10.071. [Epub ahead of print]