A Patient with Multilevel Lumbar Disc Herniations and Severe Radiculopathy Treated With Cox® Decompressive Spinal Manipulative Therapy

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INTRODUCTION

This case report describes the clinical presentation, evaluation and treatment of a middle-aged male patient that presented to our facility in June 2013 due to disabling lower back pain with severe right lower extremity pain and tingling for which he could recall no specific precipitating incident. This patient had experienced similar symptomatology in 2006 at which time it was discovered that he had multilevel lumbar disc herniations. He experienced substantial relief after a course of treatment at that time and was eventually able to return to his active lifestyle until the 2013 episode. Intervention with Cox® decompressive spinal manipulative therapy, adjunctive physiotherapeutic modalities and prudent and progressive return to activities resulted in significant improvement in both episodes .

PRESENTATION AND EXAMINATION FINDINGS

History of Present Illness: This 46 year-old gentleman reported that about a week prior to consultation in our office, he had developed relatively abrupt onset of very severe lower back pain as well as disabling right lower extremity pain and tingling. His pain was of such severity that he needed assistance from his wife to enter our office. He was not able to recall any specific precipitating incident or activity, and he had not experienced any recent trauma. As he described his lower extremity dysesthesia, it appeared to be following roughly an L5-S1 dermatomal distribution. He was not experiencing any bowel or bladder difficulties or saddle anesthesia to make me think of acute cauda equina syndrome. He had seen his PCP prior to seeing us, and was given an injection for pain, prescribed pain medication and NSAIDs with limited benefit. The pain in his lower back had been gradually intensifying in the days before he was seen in our office.

Past Medical History: This patient had a similar episode in 2006 at which time we had ordered a lumbar MRI study which was completed in early July 2006 ***(Figures 1-3)***. This study demonstrated right paracentral disc herniations at L4-5 and L5-S1. At both levels there was mass effect on the right-sided exiting nerve roots. No significant central canal stenosis was identified. The study was otherwise unremarkable. Due to the severity of the patient's pain and taking into account his concordant MRI findings, neurosurgical consultation was obtained. The neurosurgeon noted an absent right ankle reflex, and as would be expected, a positive right straight leg raise as well as a positive well leg raise test. Motor and sensory function in the lower extremities was found to be intact. As we had co-managed many patients with this neurosurgeon over the years, a certain confidence level had been obtained and he recommended continued conservative treatment to specifically include chiropractic treatment, but should such conservative measures fail, he offered a two-level microdiskectomy at the L4-5 and L5-S1 levels. Fortunately, surgical intervention was not necessary as the patient responded very well to Cox® decompressive spinal manipulative therapy. Subsequently, he was able to return to his very active lifestyle, including frequent travel, golf, tennis, hunting and playing basketball. He returned intermittently thereafter for a brief course of treatment for occasional neck or back soreness, but in general he was doing quite well. At the time of his latest episode he had not required chiropractic treatment for nearly three years. His past medical history was otherwise notable only for vasectomy and removal of a basal cell carcinoma which was uneventful.

Physical Examination: This was a very pleasant, right-handed, 46-year-old executive in some apparent discomfort. He was 75 inches tall and weighed 210 pounds. BP was 132/88 (seated), SpO2 was 99%, temperature was 98.7 F°, pulse 63, respirations 16. He arose from a seated position with difficulty. He walked very slowly, leaning slightly forward at the waist, and was noted to be limping with decreased stance phase on the right. Active cervical range of motion was physiologic. Active lumbar range of motion was not tested due to his obvious pain which we had no desire to exacerbate unnecessarily. There was a diminished appreciation of light touch in a right L5-S1 dermatomal distribution. There was 4/5 weakness of the right EHL. Right ankle reflex was trace to 1+. Motor, sensory and reflex function was otherwise intact in the upper and lower extremities. Straight leg raiser increased his right leg pain when lifting either leg to about 45°. Intermittent fasciculations were noted involving the right gastrocnemius/soleus complex. Palpation showed thoracic and lumbar paraspinal muscle spasm and tenderness bilaterally. A myofascial trigger point was present within the right upper gluteal musculature. Segmental dysfunction was noted at L4-5 and L5-S1 to motion-augmented palpation. Premanipulative screen/tolerance testing was negative for contraindications to treatment (1).

IMAGING

We ordered a repeat lumbar spine MRI study which was completed in early July 2013 ***(Figures 4 and 5)***. This study demonstrated a right paracentral, moderate-sized disc herniation at L5-S1 which displaced the exiting right S1 nerve root. At L4-5 there was concentric disc bulging causing mild ventral deformity of the thecal sac. Otherwise, this study was essentially unremarkable. The size of the L4-5 and L5-S1 disc protrusions appeared to be somewhat decreased as compared to the 2006 MRI study.

ASSESSMENT

His assessment at that time was L5-S1 disc herniation with radiculopathy and lumbosacral segmental dysfunction.

TREATMENT

Since this patient had responded very well to treatment after his 2006 episode, he was felt to be a good candidate for another course of chiropractic treatment. He was fitted with an LSO (lumbosacral orthosis) to protect his lumbar spine, to facilitate healing, to guard against re-injury of the area, and to afford him some relief of his pain early on in his course of treatment.

Adjunctive therapy included interferential therapy, cryotherapy and soft tissue mobilization over the right lumbar paraspinal musculature, right upper gluteal region and right posterior thigh, in combination with long y-axis continuous passive motion to the lumbar spine (2).

Manipulative treatment included Cox® decompressive spinal manipulative therapy utilizing Protocol 1 on the Cox® 7 table (3). This was provided on alternating days for the first week, at which point he had experienced relief to the extent that he felt that he was able to go on a short business trip. He followed up on a decreasing frequency basis over the course of approximately two months with gradual improvement throughout that time and he

was able to return to his usual activities of daily living. He was seen occasionally thereafter with his last visit being in November, at which time he reported that he had continued to do very well. He was seen for a total of eleven visits from June-November 2013.

RESULTS

This patient responded very well to a course of Cox® decompressive spinal manipulative therapy and various physiotherapeutic modalities. As of our last contact with the patient (about a month ago at the time of this writing), he was doing very well. He continues to be physically active and has returned to his normal activities of daily living. His latest physical examination shows 5/5 strength of the right EHL. His right ankle reflex is 1-2+. Sensation in the right lower extremity is improved significantly, but slightly diminished appreciation of light touch persists in an S1 distribution.

DISCUSSION

Had this patient not had the opportunity to undergo chiropractic treatment, it is likely that he would have undergone surgical intervention in the form of two-level microdiskectomy. Fortunately, this was not the case. On two separate occasions, he suffered from severe, and in fact debilitating, pain in his lumbar spine and right lower extremity which responded well to decompressive manipulation. It has been made clear that he will likely experience periodic symptomatic flares which will require treatment, and he understands this.

Parenthetically, it is interesting to note that upon comparative review of the MRI studies performed in 2006 and 2013, the L4-5 and L5-S1 herniations appear to have decreased in size in the latter study.

REFERENCES

1. Cox, JM: Low Back Pain: Mechanism, Diagnosis, Treatment, 7th edition. Philadelphia: Lippincott Williams & Wilkins, 2011: chapter 8, pp. 367-368.
2. Ibid, chapter 8, pp. 379-382.
3. Ibid, chapter 8, pp. 362, 370.

FIGURES

2006 Lumbar spine MRI study (Figures 1-3)

Figure 1 (2006 study). T2-weighted sagittal view. Note protrusions at L4-5 and L5-S1.

Figure 2 (2006 study). T2-weighted axial view. Note right-sided L4-5 HNP.

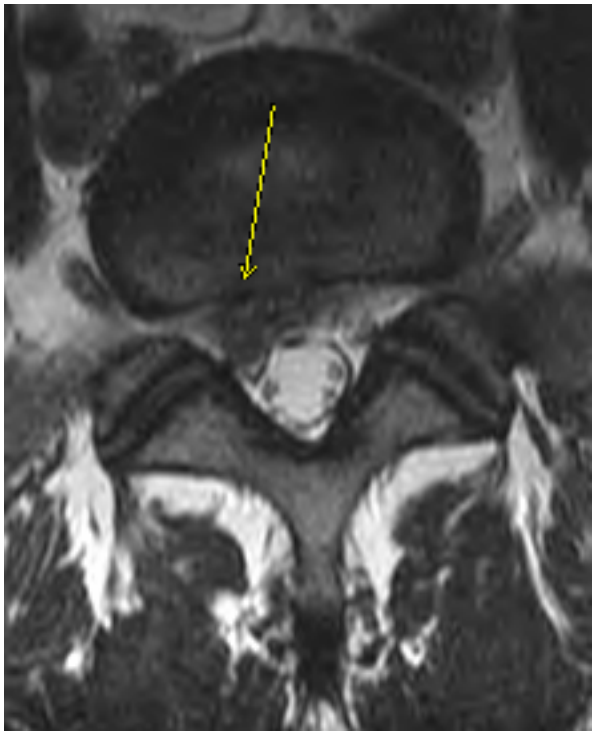

Figure 3 (2006 study) . T2-weighted axial view. Note impressive right-sided L5-S1 HNP.

2013 Lumbar spine MRI study (Figures 4 and 5)

Figure 4 (2013 study). T2-weighted sagittal view demonstrating L5-S1 HNP.

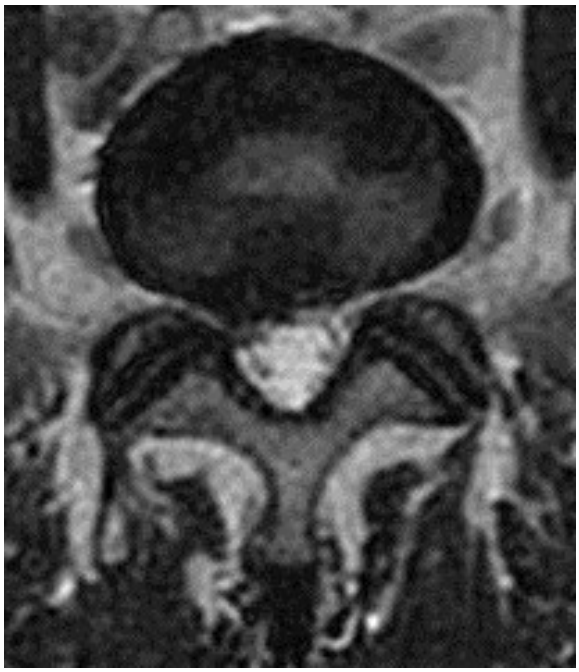

Figure 5 (2013 study). T2-weighted axial view. Note right-sided L5-S1 HNP. This appears to be smaller than was seen in the 2006 study although still causing neurologic impact.