



FIRST OF TWO CASES: Non-Specific Back Pain, Degenerative Disc Disease, Endplate Modic Changes treated with Cox® Flexion/Distraktion Decompression

Paul L. Vanier, DC

Contact Information:

Paul L. Vanier, DC
19 North Broad St. PO Box 149
Carthage, NY 13619
Phone: 315-493-4544 Fax: 315-493-7360
paul@vanierchiropractic.com

Submitted January 27, 2014



INTRODUCTION

This report discusses two different patients, now in their middle age, who both have had recurrent low back pain since their teenage years. One patient is a farmer, the other patient a construction worker. Both have injured their spines over the years, through hard work, over-utilizing bending, lifting and twisting, most of the time, ignoring the severity of their symptoms and gravity of their problem. Both have received chiropractic care from this office since the onset of their trouble in their teenage years. They both would have an acute episode once every three to five years. Both had good results from 3 – 6 adjustments and would end care when their symptoms were gone. In recent years, both decided to be more regular with their adjustments coming 1x/1-2 months, but last year 2013, both had severe acute back pain, that did not respond to the usual chiropractic adjustments. Due to the reoccurrence and severity of their back pain with little or no improvement, an MRI was ordered, which shed more light on why their back pain was so severe. It wasn't until an MRI was taken and shown to both patient's that they came to realize the degree of degeneration and severity of their back pain condition. Both patients had excellent outcomes from the utilization of Cox® Flexion Distraction decompression technique.

These cases will be presented individually: One in May 2014 and the second in July 2014.

Editor comment by James M. Cox, DC, DACBR

These two cases are patients who were initially treated with classic high velocity low amplitude spinal adjusting. With no relief, the treatment was changed to Cox® F/D distraction spinal manipulation. My point is WHY WAIT trying other older forms of spinal manipulation. If Cox F/D can get the difficult failed cases well, it will get the less severe pain patients well with even greater ease. Therefore, use it on all spine conditions initially and then thrust high velocity low amplitude if it Cox F/D fails. Guaranteed that patient tolerance will be greater with Cox F/D.

PATIENT #1: MR. PAUL

CHIEF COMPLAINT:

This is a 47 year old male dairy farmer who has had a chronic history of recurrent low back pain since his teenage years, and has received chiropractic care in this office since he was 18 years old with good results. Typically, he received an adjustment every two months, more for "maintenance". Once every three to five years, he would enter this office in severe acute pain, analgic, and in spasm that would resolve in 2-3 adjustments. Usually, he would come with either mild or no back pain at all. This is a hard working dairy farmer that works 16-18 hour days, very athletic, I am told by family members that he literally runs during his work, rarely slows down to take a break, except to sleep at night.

On January 29, 2013 two months after having a maintenance adjustment, Mr. Paul entered this office complaining of severe LBP which he stated, started suddenly 4 days prior. He described his low back pain as sharp and severe with a VAS- 10. His pain would worsen as the day progressed with his farm work, with moderate relief with rest laying down. The frequency of pain was constant, coughing and sneezing would aggravate the pain. There was no noticeable difference between sitting and standing, Walking and running would worsen his symptoms. He denied any lower extremity pain radiation, numbness or weakness, he denied as well any GI nor GU symptoms. He now has difficulty doing his farm work.

**OBJECTIVE FINDINGS:**

- Patient points to the pain across mid to lower lumbar region, and SI joints.
- Posture: Slight anterior and right antalgia, minors sign is positive. Dorso-lumbar range of motion WNL, without pain increase except Flexion restricted at 40 degrees with increase of pain. Palpation of the lumbar region revealed mild spasm bilaterally, active trigger points, spinous tenderness L2-L5, bilateral upper SI tenderness.
- Ortho/Neuro tests: Lower extremity muscle strength 5/5 bilaterally, DTRs patellar and achilles + 2 bilaterally, heel/toe normal, pinwheel revealed normal sensation on dermatomes L4-S1. Straight leg raiser was negative. Bilateral leg raiser and leg lower were positive and intolerable.
- Motion palpation revealed fixations: L3/L4, L4/L5, Lt. upper SI, Rt. Lower SI.
- Subluxation listings: Lt. upper SI, L5, L4.

ASSESSMENT:

- Patient has a history of back pain due largely to the nature and intensity of his work.
- He has always responded well to prior chiropractic care in this office.
- He now has severe low back pain. He has no radicular symptom. I suspect lumbar disc disease.
- DJD is possible; there is joint dysfunction and subluxation present in the lumbo pelvic spine.
- Some protective spasm is present in the lumbar paraspinal musculature.

WORKING DIAGNOSIS:

739.3 Lumbar subluxation, 724.2 Low back Pain

PLAN:

Adjustments to the lumbar spine and posterior pelvic regions, treat ATPs, if not at least 50% better within the next week to return for follow-up.

TREATMENT:

Consisted of Palmer diversified and Thompson adjustments. Patient advised to apply ice 5-10 minutes every half hour at home.

PROGRESS:

2/14/13 – Patient returned stating he had slight relief from prior treatment. The pain went down to an 8/10, but now is back at 10/10. Pain is sharp, constant, especially to the right hip. He has difficulty bending forward and can't run. I suggest to the patient that x-rays of the lumbar spine should be taken, but the patient declines, opting to "wait and see."

4/11/13- Patient returned stating that he has improved. The low back pain "comes and goes." There are periods when he has no pain, and at other times the pain is an 8/10. He states he still can't run. He has difficulty bending forward. He is only doing the essential work on the farm.

6/6/13- Patient returned stating that his condition "has not improved and has stayed the same." His pain range is from 0/10 to 8/10. He still can't run. His pain worsens with coughing/sneezing, bending forward, lifting, and driving tractor. Rest does relieve the pain. Because more limitations in his ADL's are worse this time, the patient feels he may be getting worse. Exam findings remain the same. Adjustment given.

The patient is sent to the hospital for lumbosacral x-rays.

6/11/13- Complete lumbar x-rays are taken, read by the radiologist, and myself.

Findings: Mild spondylosis L2-L3, L5 transitional segment noted. Impression: no acute disease.

Not satisfied with the patient's findings, I sent this patient back to hospital for an MRI of the Lumbar Spine. I am concerned of possible malignancy.

6/24/13- MRI of the Lumbar Spine w/o contrast is performed and read by the same radiologist.

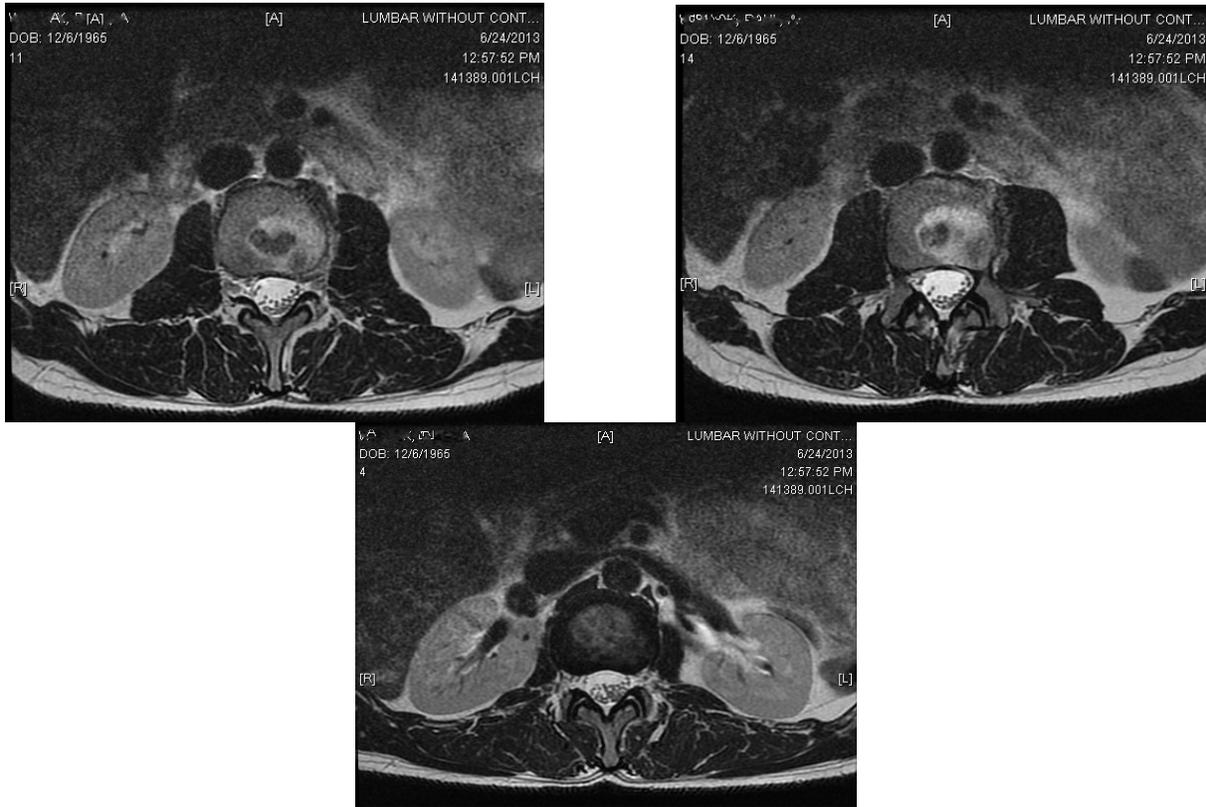
Impression: Multiple levels of mild disc bulging, mild spondylosis.

Type 1 Modic endplate changes L2-L3 in keeping with marrow edema. This finding is potentially due to acute or subacute protrusion of the L2 disc into the inferior endplate of L2 and superior endplate of L3 Schmorl's nodes. The differential diagnosis includes sequelae of microtrauma, or degenerative disease.

There are five lumbar vertebrae, and a transitional vertebra caudal to L5. Mild osteophytic changes are identified through the lumbar spine. There are mild type 2 Modic endplate changes in keeping with fatty marrow at L3-L4. Small Schmorl's nodes also identified at levels T11-T12, L1-L2.

IMAGING





CONSULTATION WITH DR. JAMES COX

6/26/13

It was decided after consulting with Dr. Cox (via Julie, Thank you, Julie!) for his thoughts on this case that we would proceed with Cox Flexion Distraction Decompression Technique using Protocol II.

TREATMENT

Cox Flexion Distraction Decompression Technique Protocol II.

PROGRESS

7/1/13 1st Cox treatment

Patient returns to this office stating no improvement or change in his symptoms. Patient states he cannot make quick movements, and coughing and sneezing increases his pain. Sitting now causes him more pain. He cannot play, i.e. baseball with his three boys which he misses very much. He is in constant pain, day and night, sharp in character and at no time does he have relief. The pain is non-responsive to Ibuprofen. Pain ranges from PR-8/10 to 10/10.

OBJECTIVE- Patient is visibly uncomfortable. Posture, mild anterior, and right antalgic posture. + Minor's sign. Some difficulty walking with caution and guarding. Dorsolumbar ROM- Pain increase on flexion, flexion limited at 20 degrees. Other ranges normal is also pain increase on extension and left lateral flexion. SLR Negative, Pheasant's Sign Positive. No other positive ortho/neuro signs. No presence of muscle spasms.



Review of X-rays and MRI findings with the patient

ASSESSMENT

Acute moderate to severe LBP, progressively worsening. No radicular symptoms

Non responsive to chiropractic adjustments

Lumbar X-rays, mild DJD, Spondylosis

MRI L-spine – Type 1 Modic endplate changes L2-L3

WORKING DIAGNOSIS:

739.3 Lumbar Subluxation 722.52 Lumbar Disc Disease 721.3 Lumbar spondylosis

TREATMENT PLAN/GOALS

Cox Flexion Distraction Decompression, Protocol II to reduce intradiscal pressure and mobilize sub end-plate intraosseous edema. Adjustments to fixation subluxations as needed. Manual treatment of trigger points, acupuncture point paraspinal, quadratus lumborum, iliolumbar, and gluteal muscles.

3x/ week 1st 3 weeks then reevaluate. Must have 50% reduction in VAS, and improvement of ADL'S

Long range goal: reduce PR to < 2. Findings and treatment plan explained to patient. Patient consents to treatment.

Patient is tolerance tested with long y-axis only, first without hand contact which was tolerated, then with hand contact on L1 which was tolerated.

Patient is given 3 series of 5 1-2 seconds of long y-axis distractions to the point of perceived tension on L1 inferior spinous process then released.

The patient tolerated treatment well and had improved posture after the first treatment with Cox.

PROGRESS

Mr. Paul felt marked improvement after **4 visits in 10 days**. His pain has decreased from constant PR 8/10 -10/10 to intermittent with PR range of 2/8 to 8/10. His lower back is "tired and sore" but no longer has spasms. His workload has increased to include "haymaking."

7/18/13 visit.

Treatment is upgraded to include 3 series of 5 1 second distractions to include long y-axis, flexion, lateral flexion, extension, and circumduction in Protocol II at levels L1/L2, L4/L5. SI adjustments are also given.

7/25/13-

Mr. Paul reports that the day before was his "1st good day" meaning that he was able to put in a full day of work with mild discomfort pain <2. Today he is as bad as it could be: "probably did too much yesterday."

8/1/13

Patient states pain rating averages 4-5, but his level of work is intense on the farm. He has occasional severe pain but less often. Treatment plan changed to once per week. Patient is fitted with Cox® Lumbar support from Dee Cee Labs. Patient feels "stronger" with the support.



9/3/13 13th Cox treatment

Patient stated "having a great week" "best week all year". Mild intermittent pain at times no pain to mild pain PR – 0 to PR- 2. He can play football with his boys, and can run without pain.

OBJECTIVE: Flexion to 45degrees w/o pain. Milgram test, Pheasant test negative, Hyperextension test negative. Slight anterior and right antalgic lean. No spasms. No positive findings in the lower extremities. Treatment plan changed to 1x/2wks.

10/21/13 20th Cox treatment

Patient stated he can do most of his work pain free. He cannot lift over 50 lbs or there is a sudden increase of pain. Patient is stiff in the morning, but stiffness reduces with activity and as the day goes on.

12/16/13

23rd Cox treatment

Patient states overall improvement. He is now pain free most of the time with occasional pain at a 4/10

OBJECTIVE: No pos. finds. Posture. WNL no antalgia.

Treatment plan changed to 1x/month.

1/16/14

24th Cox treatment

Patient reports "I feel the best I have felt in three years" his PR ranges from 0-1. Most of the time no pain.

He can lift and throw 50 lb bales with no pain provocation.

OBJECTIVE: no positive findings, D-L ROM WNL. No antalgia present.

Treatment: Continue with spinal adjustments for presence of fixation subluxations, SI joints in particular.

Cox F/D Protocol II continues at 1x/month.

I instructed the patient to continue with Cox® exercises 2x/day faithfully.

DISCUSSION:

In both of these cases (the second case is being presented in July 2014), the patients have had chronic low back pain with exacerbations that became more frequent, more severe, and more debilitating. These are both "hard working" patients that have pushed their spines "to the limit." In both of these cases, as their condition worsened, the results with strictly chiropractic adjustments produce no marked improvement. X-ray results did not yield much information vis-a-vis the severity of their pain. MRI imaging was more definitive in identifying degenerative changes within the discs, and sub endplate changes in the related vertebral bodies. With the endplate changes, particularly with the presence of sub end-plate edema due to the body's response, and an abundance of pain sensory fibers in that vicinity, together can explain why in these patients the back pain is constant and severe. This is especially true in patients with Modic 1 changes. With that said, it is reasonable to conclude that there is concomitant increase in intradiscal pressure that probably extends into the sub end-plate defects.

Cox® Technic Flexion Distraction Decompression has been shown to be effective in the management of low back pain when there is the presence acute and chronic intervertebral disc conditions; bulging discs, herniated disc, and degenerative disc disease, by increasing intervertebral disc space height, lower intradiscal pressure, increase intervertebral foraminal height, adjust facet joints to improve and restore physiological ranges of motion. The application of specific distraction forces with range of motion



encourage nutrition to disc and vertebral body as well as dissipate edema. This appears to be the case as well with the application of specific distractive forces utilizing the Cox Technic can reduce the sub end plate pressure created by the presence of edema with decompressive forces.

With the successful outcomes of these two cases, it appears that the use of Cox Flexion Distraction Decompression may also be a more effective way of conservatively managing severe low back pain in patients with severe spinal degeneration inclusive of not only the disc but the pain sensitive vertebral endplate.

Case presented by Paul L. Vanier, D.C
1/27/14

REFERENCES

1. De Roos A, Kressel H, Spritzer C, Dalinka M. "MR imaging of marrow changes adjacent to end plates in degenerative disc disease". The American Journal of Roentgenology. 1987;149 (3):531-534. PubMed.
2. Modic MT, Steinberg PM, Ross JS, et al. : "Degenerative disk disease: assessment of changes in vertebral body marrow with MR imaging". I Radiology 1988;166(1 Pt 1):193-9.
3. Modic MT, Masaryk TJ, Ross JS, Carter JR. : "Imaging of degenerative disk disease". I Radiology 1988;168:177-86.
4. Cox JM: Low Back Pain: Mechanism, Diagnosis, Treatment, 6th edition. Baltimore: Williams & Wilkins, 1999: chapter 2 pp. 105-107, chapter 10 413-414.
5. Albert HB, Manniche C. : "Modic changes following lumbar disc herniation.". I Eur Spine J. 2007 Jul;16(7):977-82. Epub 2007 Mar 3
6. Albert HB, Kjaer P, Jensen TS, Sorensen JS, Bendix T, Manniche C : "Modic changes, possible causes and relation to low back pain.". I Med Hypotheses. 2008;70(2):361-8. Epub 2007 Jul 10
7. Cao P, Jiang L, Zhuang C, Yang Y, Zhang Z, Chen W, Zheng T. : "Intradiscal injection therapy for degenerative chronic discogenic low back pain with end plate Modic changes". Spine J. 2011 Feb;11(2): 100-6. Doi: 10.16/j. spinee.2010.07.001 Epub 2010 Sep 20.
8. Esser O et al, "Dynamic Stabilization in the Treatment of Degenerative Disc Disease with Modic Changes". Advances in Orthopedics. 2013;3013: 806267. Epub 2013 May 20. Doi: 10.1155/2013/806267