



Degenerative Disc Disease Of The Cervical
Spine With Radicular Pain Treated
With Cox® Decompression Adjusting.

By
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The proper diagnosis of a patient's condition is paramount to developing an effective treatment plan. This was a case where a patient presented with severe acute upper thoracic spinal pain which radiated into the right upper extremity and down into the right hand. Unfortunately, this patient was experiencing all the negative ramifications associated with severe pain such as sleeplessness, inability to work and elevated anxiety. This patient had, in my opinion, a common clinical presentation for a cervical discogenic radiculopathy which subjectively appeared to originate from the upper thoracic spine, but in reality stemmed from the mid to lower cervical spine which referred significant pain into the upper thorax while radiating pain into the upper extremity down to the hand. Trying to explain the origin of pain to a patient with this type of condition upon initial and subsequent examinations can be challenging and sometimes met with confusion. Fortunately, we know that there are structures within the cervical spine that can be responsible for referred pain into the upper thorax as well as radicular pain into the upper extremity.

CASE HISTORY:

On March 24, 2009, a 55 year old male patient presented with the chief complaint of "right shoulder blade pain" which radiated into the right triceps area and down the right arm to the right hand. This condition began suddenly 5 days earlier which initially started as pain in the right shoulder blade area and progressively increased. There was not a specific event or history of trauma to initiate the condition. This patient had previously been evaluated by an orthopedic surgeon a few days earlier, who prescribed medications which had been ineffective in reducing this patient's pain to date. Since I had treated this patient in the several years prior, the patient presented to me for an evaluation and treatment of his condition with Cox® Decompression Adjusting (CDA) of the cervical and thoracic spine.

HEALTH HISTORY:

This patient has a past health history of high blood pressure which is controlled by medication, occasional spinal pain, bouts of anxiety with tachycardia and does not have a history of prior surgeries or allergies.



INITIAL COMPLAINTS:

Initially, this patient complained of right shoulder “blade” pain which radiated into the right arm to the right hand. He described it as sharp, shooting and "sore." It began suddenly and has been progressive in intensity. The patient has been experiencing this pain for 5 days and was not initiated by trauma. The patient related that the pain worsened upon sitting, walking, sleeping and lying down while standing give some mild relief. The patient rated this pain at an 8 (10 being worse 1 being least) and constant (76% to 100% of the day). The patient has also been experiencing bouts of anxiety, “heart flutters,” tachycardia and pain at night while trying to sleep.

PHYSICAL EXAMINATION:

The patient is a 55 year old male, who is 5’10” tall and weighting 260 pounds. The patient was observed to be in severe distress and was holding his right arm to try to get relief from his pain. Peripheral pulses of the upper extremities were equal bilaterally and testing for V.A.S. was within normal limits. Palpation for muscle spasms, pain and tenderness in the cervical and upper thoracic spine revealed tenderness at the right upper thoracic paraspinal musculature at the T2 through the T7 levels.

SPINAL RANGES OF MOTION: Cervical spine ranges of motion were measured to be 40 degrees with pain in flexion, 20 degrees with pain in extension, 20 degrees with pain in right lateral bending, 20 degrees with pain in left lateral bending, 60 with pain in right rotation and 55 degrees with pain in left rotation. The pain that this patient experienced while measuring the cervical spine ROM was primarily in the right upper thoracic spine. The ranges of motion of the shoulders were within normal limits, bilaterally.

ORTHOPEDIC EXAMINATION: Cervical Compression, Maximum Cervical Compression, Cervical Distraction, Soto-Hall, Valsalva, Tinel’s and Phalens tests were all within normal limits. Allen’s, Adson’s and Wright’s tests were also within normal limits.

MUSCLE STRENGTH EXAMINATION: Deltoid, Biceps, Triceps, Interossei, Wrist Extensors and Wrist Extensors were noted to 5 of 5 bilaterally. Right hand grip strength measured 60 p.s.i. and the left hand grip strength measured 60 p.s.i..

NEUROLOGICAL EXAMINATION: Bicep, Triceps and Brachioradialis deep tendon reflexes were a +2, bilaterally. Light touch sensation was noted to be within normal limits in the upper extremities, bilaterally.



CERVICAL SPINE IMAGING:

X-ray of the cervical spine dated 3-25-2009 revealed:

The vertebral body heights are within normal limits. There is disc space narrowing of C5-C6 with anterior osteophyte formation. No prevertebral soft tissue swelling is identified. The neural foramina appear relatively unremarkable. Straightening of the normal cervical lordosis may be secondary to spasm or positioning.

Impression:

1. Straightening of the normal cervical lordosis may be secondary to spasm or position.
2. Disc space narrowing at C5-C6 with anterior osteophyte formation. For further evaluation of disc pathology, an MRI may be beneficial.



Figure 1: Neutral lateral x-ray of cervical spine.



Figure 2: Left cervical spine oblique x-ray.



Figure 3: Right cervical spine oblique x-ray.



MRI of the cervical spine dated 4-10-2009 revealed:

At C5-C6, there is a posterior projecting disc and osteophyte that causes epidural compression and slightly impinges upon the cord but does not flatten it. There is bilateral neural foraminal stenosis secondary to osteophyte formation and disc bulging.

At C6-C7, again, there is posterior projecting osteophyte and disc material causing epidural compression. This slightly abuts but does not flatten the cord. There does not appear to be significant neural foraminal stenosis at this level.

IMPRESSION:

Degenerative changes of the cervical spine with combination of bulging discs and osteophyte formation causing some canal stenosis at C5-C6 and C6-C7. There is neural foraminal stenosis at C5-C6 as well.



Figure 4: Cervical spine MRI, sagittal view. Please note the C5-C6 and C6-C7 discs.

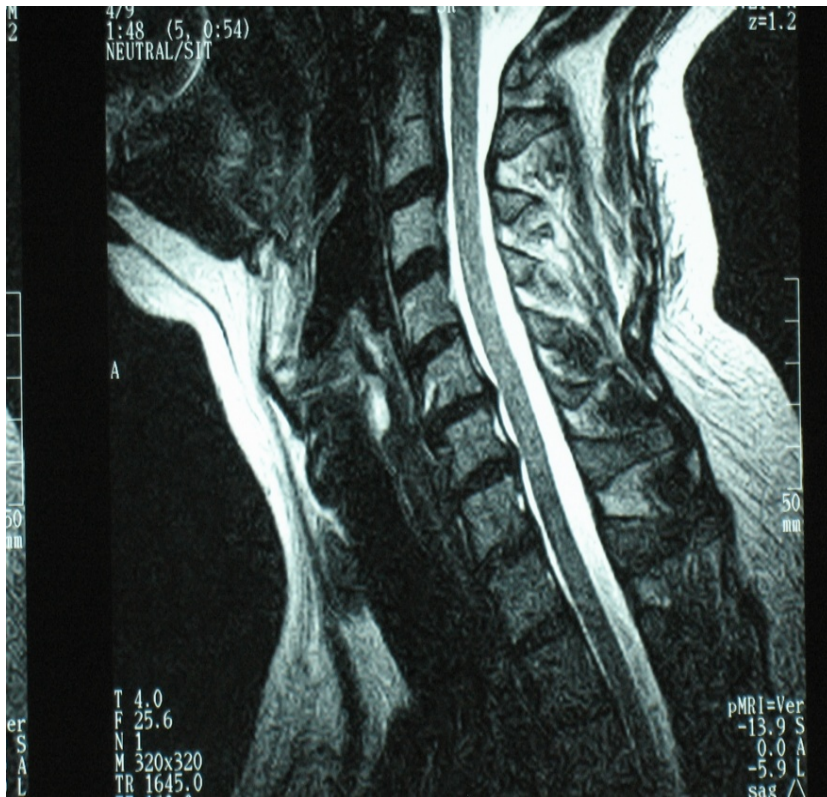


Figure 5: Cervical spine MRI, sagittal view. Note possible extruded disc material at C6-C7.

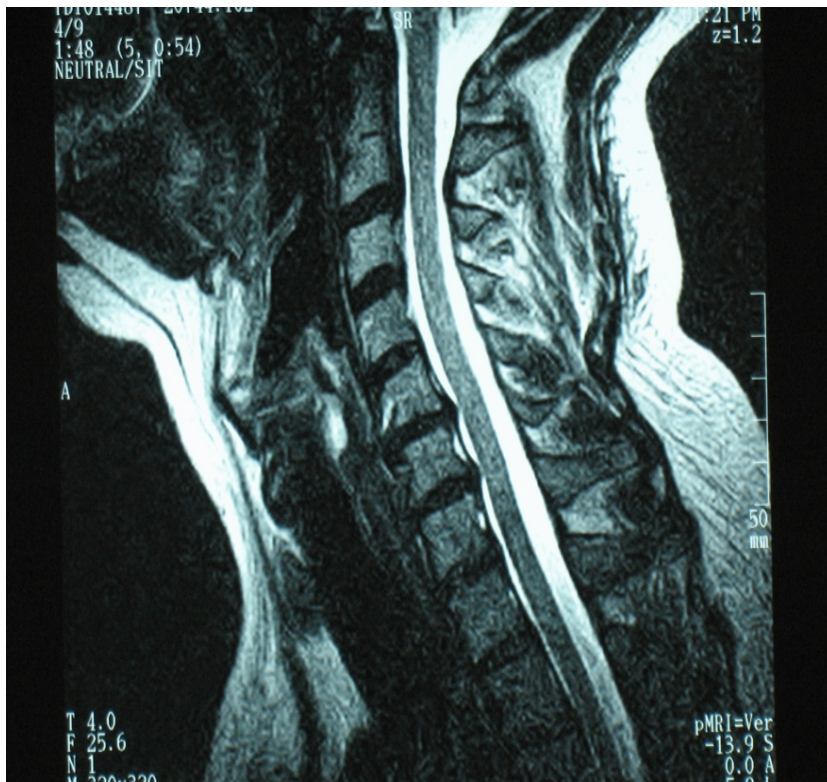


Figure 6: Cervical spine MRI, sagittal view.

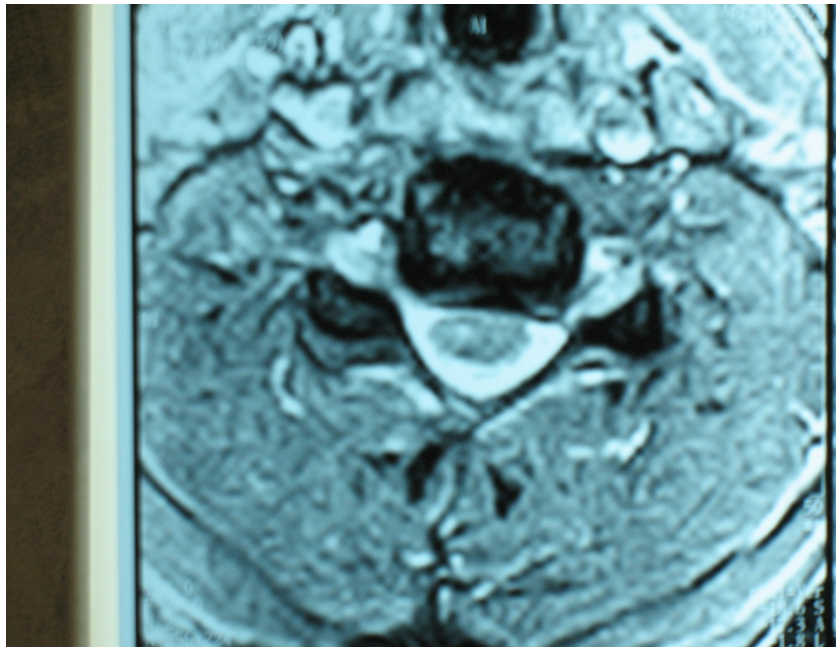


Figure 7: Cervical spine MRI, axial view. C5-C6 level.

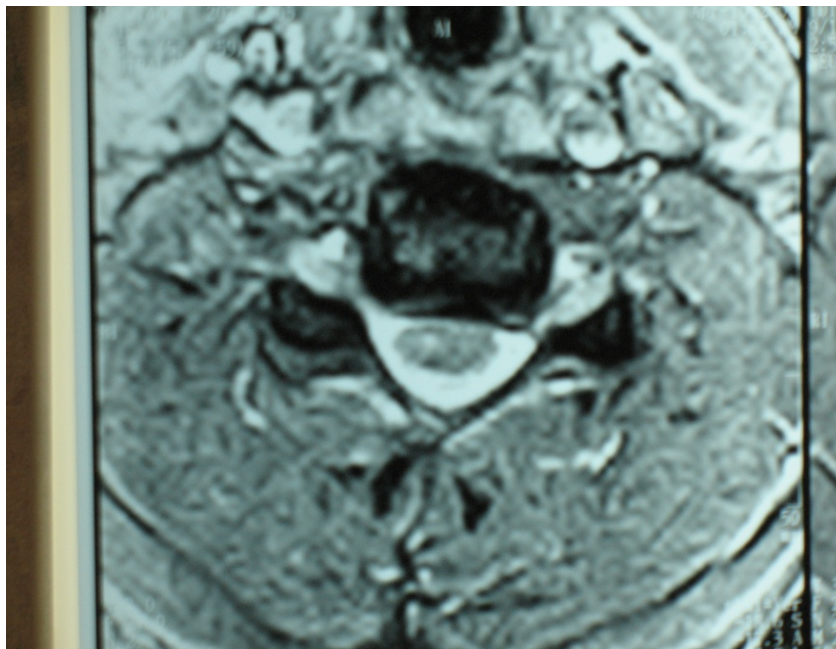


Figure 8: Cervical spine MRI, axial view. C5-C6 level.

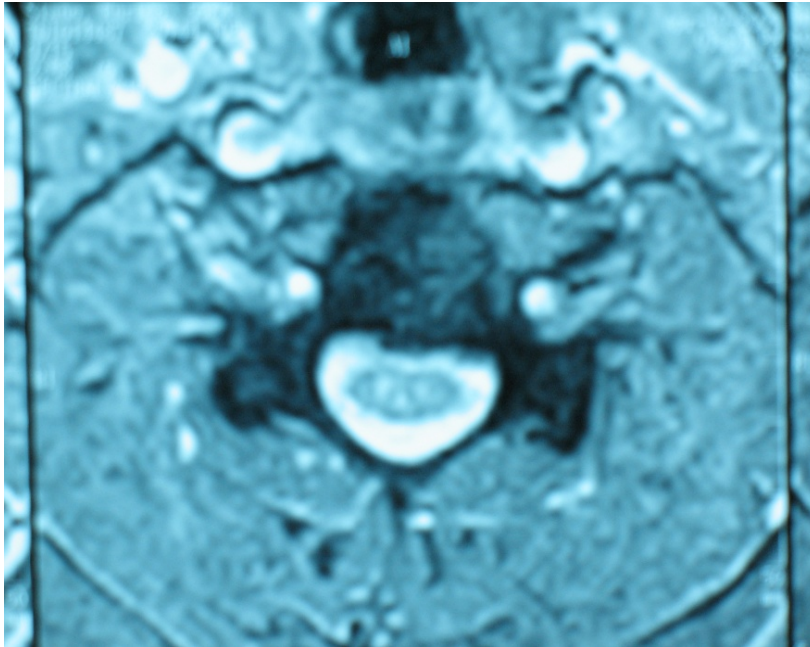


Figure 9: Cervical spine MRI, axial view, C6-C7.

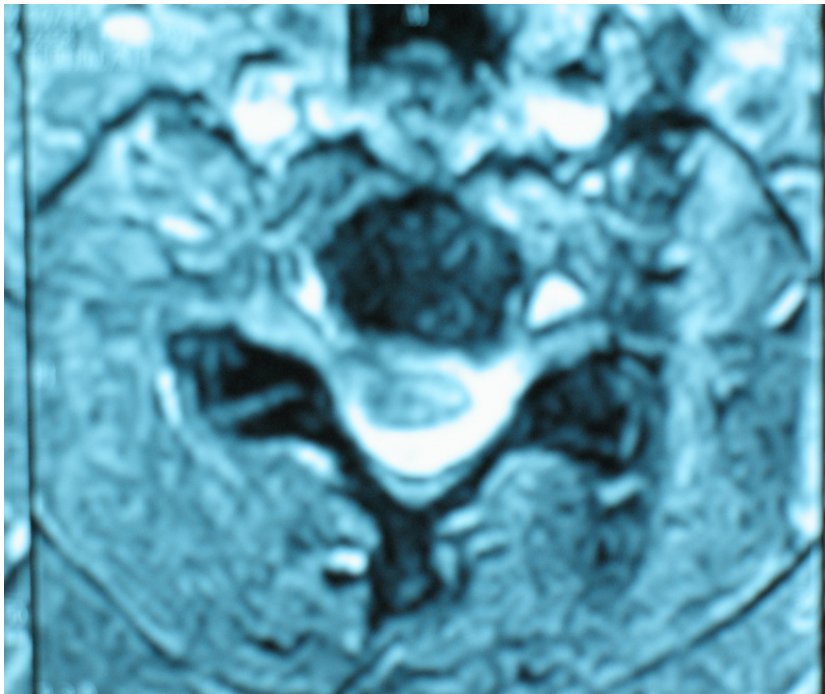


Figure 10: Cervical spine MRI, axial view, C6-C7.

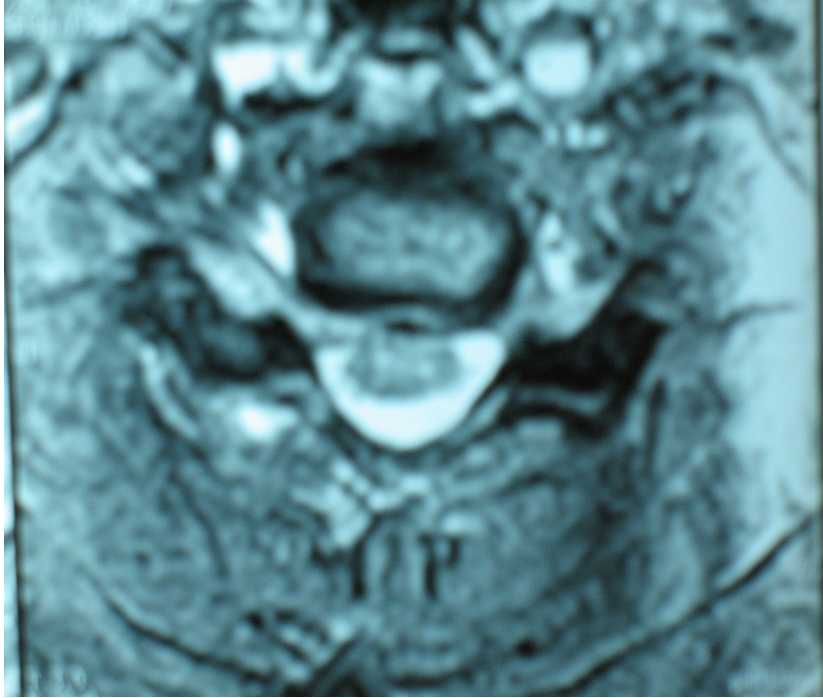


Figure 11: Cervical spine MRI, axial view, C6-C7.

TREATMENT PLAN:

This patient was given a treatment plan consisting of Cox® Decompression Adjusting (CDA) of the cervical spine, electrical muscle stimulation, Infrared Light Therapy and a home icing schedule. This treatment plan was to be administered three times per week for a four week period with an anticipated 50% subjective and objective clinical improvement at the end of this initial plan. Glucosamine sulfate and Chondroitin Sulfate were also recommended, however the patient expressed concerned over a possible allergic reaction that could exacerbate his tachycardia, so GS/CS therapy was not instituted. On the first treatment session, the patient was tolerance tested (1) and protocol 1 (1) was instituted. The Infrared Light Therapy was also administered after each treatment session at a dosage of 12 joules per treatment. Since this patient was husky in stature and held his head in forward translation, I elected to use a variation to Cox cervical spine decompression adjusting, Protocol 1 (1). The rationale for this variation was to reduce the patient's forward translation while increasing the cervical lordotic curve which for me afforded a better adjusting contact on the cervical spine. This simple variation is performed by placing the superior adjusting hand under the patient's forehead while contacting the cervical spine with the inferior adjusting hand in order to apply long Y axis distraction. This position seems to reduce the forward translation of the cervical spine and gives the adjuster an increased sensitivity while performing tolerance testing and Protocol 1 (1) on a patient with a very large neck. This variation was used only when performing long Y axis distraction and not with Protocol 2. Lastly, the patient was continually instructed in life style modification in order to increase his activities of daily living, i.e. reducing



prolonged neck flexion and was given a neck and upper back stretching and strengthening program.



Figure 12: Patient lying supine in neutral position on The Cox®7 Table adjusting instrument.



Figure 13: Patient is tolerance tested.



Figure 14: Superior adjusting, hand is placed under the patient's forehead.



Figure 15: Superior adjusting, hand is placed under the patient's forehead.



Figure 16: The head piece is unlocked to allow for long Y axis distraction and the inferior adjusting hand makes proper contact to the cervical spine then Protocol 1 is initiated. The instrument should be placed at the maximum height level so the adjuster is not bent over the patient.

DISCUSSION:

From a clinical standpoint, this patient presented with a minimal subjective complaint of pain in the cervical spine; however, he did not present objective clinical findings to indicate that the cervical spine was the origin of pain. A clinical presentation of severe upper thoracic pain which radiates into an upper extremity should give some consideration to possible cervical spine facet joint irritation or cervical nerve root compression. Dwyer et al demonstrated that upper thoracic spine pain can originate from the zygapophyseal joints of the cervical spine (2). Additionally, we must also give consideration to Tanaka, et al, who showed that pain in the superscapular, interscapular, or scapular regions can originate directly from a compressed cervical nerve root (3). This patient had a classic clinical presentation, one which I believe all chiropractors see in their offices everyday. In the acute stage or early in a treatment plan, some patients find it difficult to realize that the pain in their upper thorax can be a potentially serious condition emanating from the cervical spine. As a CDA treatment plan begins to relieve pain and/or the condition is confirmed with a cervical spine MRI, patient skepticism will start to diminish. Actually, Cox® decompression adjusting is a viable conservative non-surgical treatment for cervical spine degenerative disc disease and/or cervical disc condition as the axial distraction component of CDA has been shown to decrease cervical spine annulus and nucleus stresses, fiber stresses, annulus radial bulging and nucleus radial displacement. (4)

CONCLUSION:

This patient tolerated CDA of the cervical spine very well and started to experience slight reduction of his upper thorax pain after four treatments. As this treatment plan progressed the patient did experience exacerbations of his condition however these episodes usually occurred when the patient worked long hours or performed some other type of extreme activities of daily living. After receiving twelve treatments, the patient rated his pain as a 4 of 10 with



increased cervical spine mobility and flexibility thus achieving 50% clinical improvement. At this juncture, the treatment frequency was reduced and after receiving an additional ten treatments the patient's pain was reduced to a 1 without arm pain. This patient had a significant increase in his activities of daily living and has renewed his membership to the local health club where he performs cardio-vascular exercise and lifts weight. This patient was very satisfied with the result from his CDA of the cervical spine treatment plan and presently still receives chiropractic care when needed.

Respectfully submitted,
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3. Tanaka, Y; Kokubum, S; Sato, T; Ozawa, H. Cervical roots as origin of pain in the neck or scapular regions. *SPINE* 31 (17). AUG 1 2006. p.E568-E573.
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