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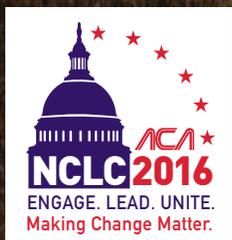
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Case Report: Tying Research to Clinical Application**Relief of C6-7 Disc Herniation With Radiculopathy, Muscle Weakness and Hypoesthesia**

By Joseph C. D'Angiolillo, DC

Introduction

Cervical radiculopathy is managed beneficially nonsurgically. Systematic reviews of complementary and alternative medicine approaches reveal potential advantages for those suffering with neck pain due to cervical radiculopathy.¹ Manual therapy and exercise are often combined for effective reduction in pain and functional limitations related to cervical radiculopathy.² Studies of patients with cervical radiculopathy show immediate effectiveness of cervical spine manipulation.³ And specifically, grip strength is increased in those receiving spinal manipulative therapy.⁴ In this case report, you'll note grip strength improves with chiropractic care following Cox® Technic protocols for this case of a patient with a right posterolateral disc herniation at C6-C7 resulting in cervical radiculopathy, muscular weakness and hypoesthesia.

History

On March 13, 2015, the patient presented herself to the office for examination and treatment. She is a well-nourished, 34-year-old, Caucasian female who was cooperative and alert to time and place. She relates that approximately a week and a half ago, for no apparent reason, she developed right subscapular pain. The pain varies from a sharp pain that stops her in her tracks to a constant deep ache. She rates this pain as ranging from a 4/10 to a 9/10. When making a presentation during a recent business trip, the patient was interrupted several times by twinges of pain in her upper back that forced her to momentarily stop speaking. The neck is primarily tense on right rotation.

Four days prior to entering the office, the patient developed weakness in her right arm. She primarily notices the weakness when she is dressing and undressing and that she lacks strength to pull her shirt up and over her head and shoulders. She feels she has lost about 50 percent of her arm strength and that her grasp is affected. She experiences intermittent numbness in the right hand.

A few months ago, she had lower back pain and saw a doctor in an urgent care cen-

ter because she had an upper respiratory tract infection. The doctor gave her antibiotics, and she claims to have been doing better since then. Initially, she thought that the upper back pain may have been a delayed side effect from the upper respiratory infection.

The patient relates that she experienced neck pain when she was in college, and she saw a chiropractor for one adjustment.

The patient's past health history includes chronic digestive issues and chronic constipation treated by taking Linzess®. Her surgical history reveals a C-section and abdominoplasty.

Her family history is noncontributory.

Examination

Examination revealed that the patient guards her neck from motion. Her posture is altered with a lower right occipital head tilt, a lower right shoulder and a lower right hip. Palpation reveals tenderness at right C4-7, T1-8; bilaterally at the shoulders. Muscle spasm was found at the right of T3-8; bilateral Occiput, C1-7, T1-2, shoulders. Motion palpable fixation was found on the right at Occiput, C1-3; bilateral C4-7. Valsalva is negative. Dejerine's Triad is negative. Balance Test is positive bilaterally. Foramina Compression is negative. Maximal Cervical Compression is positive bilaterally, producing posterior cervical spine and right upper thoracic spine pain. Shoulder Depressor is positive bilaterally, producing posterior cervical spine and right upper thoracic spine pain. Seated Dorsolumbar Circumduction Test is negative bilaterally. Bechterew's is negative bilaterally.

Muscle Strength Exam

Biceps (C5-6) were 5/5 (R), deltoid (C5) was 4/5 (R). Latissimus dorsi was 4/5 (R). Using a dynamometer to assess grip strength, the left hand squeezed 90/85/75 pounds per square inch; the right hand squeezed 55/55/55 pounds per square inch. The patient reports to be right-handed.

Reflexes

Reflexes are normal and graded equal bilaterally.

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Range of Motion (ROM)

Cervical ROM: Flexion ROM is 55 degrees, producing right parascapular pain. Extension ROM is 20 degrees, producing right parascapular pain. Left Lateral Flexion ROM is 25 degrees, producing right parascapular pain. Right Lateral Flexion ROM is 15 degrees, producing right arm pain. Left Rotation ROM is 45 degrees. Right Rotation ROM is 40 degrees, producing right parascapular pain.

Sensation

Right C5 and right C6 dermatomes were decreased; Left C5, left C6, bilateral C7 and bilateral C8 and bilateral T1 dermatomes were WNL.

Vital Signs

Blood Pressure (BP) = 98/52 (left arm); Height = 5'5"; Weight = 145 lbs; Heart rate = 82; Body Mass Index (BMI) = 24.1.

Imaging

Radiographic Examination

On March 13, 2015, the patient had two cervical films taken. Analysis of these films reveals the following: essentially negative for evidence of recent fracture as visualized. Spondylosis is noted at the C6-C7 joint level with an anterior bridging spur formation as well as posterior spur formation. The disc spaces appear to be well-maintained. The lateral film reveals a reversal of the normal cervical lordosis. The A-P film reveals a mild left lateral lean to the upper thoracic and cervical spine.

Cervical Spine MRI Findings

I referred the patient out for an MRI of the cervical spine, which was performed on March 18, 2015. From C3-4 to C6-7, there are disc osteophyte complexes with the most significant findings located at the C6-7 joint level. There is a disc osteophyte complex greater on the right than on the left with a broad-based right posterolateral disc herniation associated with effacement of much of the right lateral recess of the spinal canal, with possible impingement of the adjacent nerve root. The disc herniation and Luschka's joint hypertrophy at this level result in a mild to moderate right and mild left neural foraminal narrowing. (See Figures 1 and 2.)

Diagnosis

A herniated nucleus pulposus of C6-C7 resulting in a right-sided cervicoradiculopathy, hypoesthesia, paravertebral muscle spasms and weakness of the right upper extremity.

Treatment

Cox® Decompression Spinal Adjustments along with trigger-point ultrasound, electrical-muscle stimulation and ice packs/hot packs as needed. An initial course of care is three times per week for four weeks or until pain reduction of 50 percent is achieved, followed by a reevaluation at the conclusion of this trial of care to determine the patient's future needs. The patient was also given and instructed on the use of a soft cervical collar and an over-the-door cervical traction unit.

FIGURE 1.



Figure 1. Note the large C6-C7 disc herniation on sagittal view. (See arrow.)

FIGURE 2.

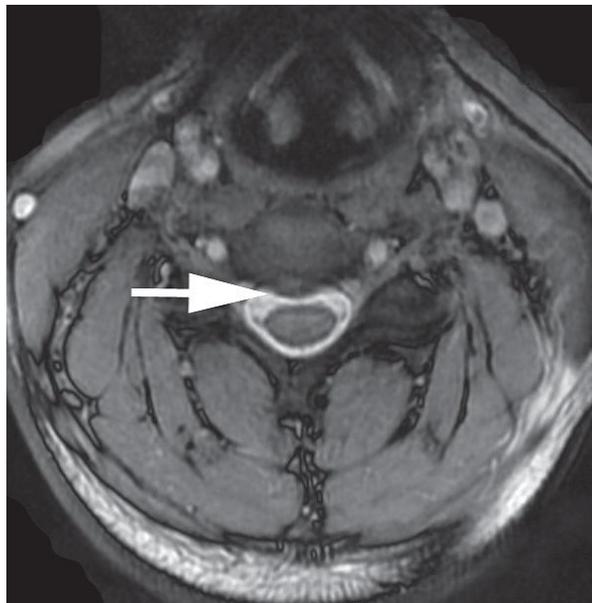


Figure 2. Note the C6-C7 broad-based disc herniation. (See arrow.)

Treatment Goals

Following the Cox® Technic System, the goal is to reduce the patient's pain level by 50 percent within one month of care. If the patient does not improve during this trial of care, I may consider referring the patient for a consultation with a neurosurgeon.

Discussion and Outcome

What motivated this patient to seek care was the progression of her symptoms to include the lack of strength that made it difficult for her to dress and undress. Upper thoracic pain, and pain that a patient describes as being underneath the shoulder blades, many times originate from the cervical spine, as the posterior rami of the cervical nerves innervate this region. Performing a seated Dorso-lumbar Circumduction Test, which places compression and rotation into the thoracic and lumbar spine, did not elicit a pain response. Compression to the cervical nerve roots did replicate pain into the upper thoracic spine. Her examination also revealed reduced dermatomal sensation, cervico-thoracic paravertebral muscle spasms, restricted and painful cervical ranges of motion and muscular weakness. The irritations spanned levels from the C5 to C8 nerve roots with the radiographs revealing significant degenerative changes at the C6-C7 joint level, as well as a reversal of the normal cervical lordosis.

My initial impression was that there was the potential for a herniated nucleus pulposus of the cervical spine.

After informing the patient of the possible complications to manual manipulation of the spine, as well as instructing her that she will need to give feedback to determine her tolerance to a Cox® cervical spine adjustment, she gave consent to initiate care. Treatment began using Protocol 1 (i.e., segment-specific five 4-second pumps repeated three times with trigger point between each set), which she tolerated well, along with electrical-muscle stimulation and ice packs. A prescription for a cervical spine MRI was given to the patient, and she was fitted with a soft cervical collar to support her neck.

The patient was able to obtain an appointment for an MRI five days after her initial visit. On March 21, 2015, after receiving the report for the MRI, the patient was given a prescription for a neurosurgical consult for a second opinion in the event she does not progress in a positive fashion.

On March 25, 2015, the patient reported that her arm pain had reduced to a 3/10 and her upper back pain had reduced to a 4/10.

On March 28, 2015, the patient reported that on March 26, 2015, she saw the neurosurgeon who gave

her a prescription for prednisone and told her that her options for pain relief were epidural injections or surgery to remove the herniated disc.

On March 30, 2015, the patient reported that she had no arm pain with her spinal adjustment progressing to Cox® Technic Protocol 2 (all ranges of motion to all spinal segments) for the cervical spine.

On April 17, 2015, the patient had a reexamination with her relating that she had no arm pain, that her neck and upper back pain was rated at a 2/10, and she felt 80 percent improved from her initial complaints. The only orthopedic test that was positive was the right Maximal Cervical Compression Test, which produced pain at the top of the right shoulder. She still had reduced dermatomal sensation at the right C5 level. Her grip strength increased in her right hand to an average of 8 pounds, with the left hand averaging 73 pounds. The cervical ranges of motion increased 45 degrees in extension, 10 degrees in left lateral flexion, 20 degrees in right lateral flexion, 25 degrees in left rotation and 15 degrees in right rotation.

This patient had demonstrable improvements in objective as well as subjective findings after one month of care. She reported having 0/10 for her arm and a 2/10 for her neck and upper back pain, where initially she reported having pain at a level of a 9/10.

Closing Comments

This case outlines how effective conservative chiropractic care utilizing the Cox7® Table's cervical spine headpiece may be for patients with cervical spine disc herniations resulting in a radiculopathy. A practitioner using the Cox® Technic protocols can have the confidence to handle such cases, thereby assisting patients with a nonsurgical resolution to their pain and dysfunction as researchers note in their publications about the effectiveness of nonsurgical care of cervical radiculopathy. ■

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