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Chiropractic management using Cox cervical flexion-distraction technique for a disk herniation with left foraminal narrowing in a 64-year-old man

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Abstract

Objective: The purpose of this case report is to describe chiropractic management of a patient with a C6/C7 left posteromedial disk herniation with foraminal narrowing and concomitant neurological compromise in the form of left upper extremity radiating pain and hypoesthesia/anesthesia using Cox flexion-distraction technique.

Clinical Features: A 64-year-old man presented to a chiropractic clinic with complaints of neck/left shoulder pain and hypoesthesia/anesthesia into the palmar side of his left hand. Magnetic resonance images of the cervical spine revealed a left posteromedial C6/C7 disk herniation along with foraminal narrowing. In addition, there were other levels of degeneration, most noted at the C3/C4 spinal level, which also had significant left-sided foraminal narrowing.

Intervention and Outcome: Treatment included Cox flexion-distraction protocols aimed to reduce nerve root compression along with supportive physiological therapeutic interventions to aid with pain reduction and functional improvement. The patient was treated a total of 10 times over a course of 4 weeks. The patient reported being pain-free and fully functional 8 months following the conclusion of care.

Conclusion: This case study demonstrated the use of Cox flexion-distraction for treatment of a patient with a cervical disk herniation, foraminal narrowing, and associated radiating pain and radiculopathy in the left upper extremity.

Introduction

Cervical radiculopathy is compression of exiting nerve root(s) by various tissues such as disk herniation or arthritic change, which usually presents as pain or abnormal sensations along a dermatomal distribu-

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tion. It peaks in the fourth and fifth decades of life and has an annual incidence of 2.1 per 1000.[1] Conservative treatment, including chiropractic, is used primarily[2,4-8,16,22,23]; but for those who do not respond, surgery is an option.[3]

Cox flexion-distraction is a chiropractic joint manipulation/mobilization technique that can be applied to patients with cervical radiculopathy. At this time, however, there are only 4 case studies and 1 retrospective study addressing Cox flexion-distraction and cervical spine disorders.[4-8] In contrast, Cox flexion-distraction has more extensive representation in the literature for the treatment of low back pain. One study compared the short-term results of Cox flexion-distraction and physical therapy, and 2 follow-up studies evaluated the long-term outcomes for low back pain.[9-11] The first study demonstrated improvement in chronic low back pain with the Cox flexion-distraction technic.[9] The 2 follow-up studies showed the following 1-year outcomes: (1) compared with the physical therapy group, the Cox flexion-distraction group required far fewer visits to health care providers[10]; and (2) Cox flexion-distraction was more effective than physical therapy in reducing pain.[11]

This case study describes the chiropractic management of a patient with cervical disk herniation with concomitant radiating pain in the left upper extremity and hypoesthesia/anesthesia in the palmar side of the left hand.

Case report

A 64-year-old African American presented on March 5, 2010, for evaluation of upper back and lower neck pain with left upper extremity radiating pain and hypoesthesia/anesthesia symptoms in the palmar side of the left hand. His pain began on October 7, 2009, when he was stretching, originating in the upper back and lower neck. Over the course of 2 months, the pain spread to his left shoulder and then began radiating down his left arm to the elbow. Below the elbow, he experienced at times both hypoesthesia and anesthesia into the median and ulnar nerve pathways of his left hand. The patient visited his primary care physician on November 12th and was prescribed analgesics and muscle relaxants, which did little to alleviate his symptoms. He was also referred to physical therapy, which he began on November 27th. He tried physical therapy for 4 weeks. He stated that it did not give him any relief and that he experienced increased pain. By this time, the patient was frustrated; and he began a course of acupuncture on December 12th. He also tried herbal therapy. Neither of these treatments helped him. The patient again visited his primary care physician (on December 30th) who ordered a shoulder radiograph and cervical spine magnetic resonance imaging (MRI). The shoulder radiograph revealed some degenerative changes, but the cervical spine MRI revealed degenerative changes and disk pathology that were consistent with the patient's symptoms.[12] He finished his course of acupuncture on February 16, 2010. Without relief for his condition, he returned one final time to his primary care physician (February 23rd); and it was at this time that he was referred for chiropractic care.

At the initial chiropractic visit on March 5, 2010, the patient reported the pain as 3 to 4 out of 10 (with 10 being the worst). He complained of pain in the left upper extremity, worst in the left shoulder blade and left lower cervical spine. He described the pain as dull; continuous; and, at times, throbbing. He complained of "tingling" and "numbness" in the palmar portion of his left hand. He stated that, many times, he was unable to get comfortable while at work and that his work involved sitting at his computer for long periods of time. Exacerbating factors included shoveling snow and poor postural patterns. Relieving factors included only lying on his back.

Examination and palpation revealed moderate spasm of the upper trapezius and levator scapulae musculature. The rhomboid muscles also exhibited some mild/moderate spasm. Moderate tenderness was elicited with palpation of the cervicothoracic junction bilaterally. Cervical spine ranges of motion revealed decreased left axial rotation (60°). Flexion, extension, bilateral lateral flexion, and right axial rotation were all within normal limits. Pain was produced in the left side cervical spine and left shoulder with flexion, right lateral flexion, and left lateral flexion. Neurological testing revealed intact and normal biceps, brachioradialis, and triceps reflexes. Muscle testing did not reveal any weaknesses. Orthopedic testing revealed a negative result in the foraminal compression test, and the Valsalva maneuver result was negative. Distraction test produced cervical spine pain, as did shoulder depression test on the left (pain was on the left).

The cervical spine MRI involved sagittal T1-weighted images, sagittal and axial T2-weighted images, and fat-saturated sagittal T2-weighted images. The images revealed a C6/C7 posteromedial (paracentral) disk herniation along with notable left foraminal narrowing. Level C3/C4 also demonstrated significant degenerative and arthritic changes that abut