Case Study

Resolution of Cervical Radiculopathy in a 61 Year Old Female Receiving Subluxation Based Chiropractic Care: A Case Report

Abstract

Objective: To describe a case in which cervical radiculopathy in a geriatric patient improved while they were receiving chiropractic care.

Clinical Features: This case report outlines the presentation and conservative management of a 61 year old New Zealand Samoan female with chronic progressive symptomatic radiculopathy. The working diagnosis was vertebral subluxation with C5 and C6 radiculopathy with moderate to severe degeneration. The patient history revealed chronic progressive cervical radiculopathy for two months prior to commencing chiropractic care. The patient had numbness and a burning sensation in the right arm and stiffness in the lower cervical spine.

Interventions and outcomes: The patient received chiropractic care using the Diversified protocol to adjust vertebral subluxations. After 11 visits the patient reported a significant improvement in numbness and tingling in her arm and improvement in quality of life as demonstrated by the RAND 36 health survey.

Conclusions: In this case cervical radiculopathy in a geriatric patient improved while she received chiropractic care. This case study adds to the existing body of evidence that suggests that chiropractic care may help patients with cervical radiculopathy.

Key words: Vertebral subluxation, paresthesia, chiropractic, cervical radiculopathy, conservative therapy, geriatric

Introduction

Cervical radiculopathy is a complaint prevalent in patients aged 40-60 years.¹ It has an annual incidence of 85 per 100,000 and is more common in men than women with a peak incidence in the sixth decade of life.² Diagnosis of cervical radiculopathy is largely based on standard clinical history and examination findings with radiographs. An MRI can be used for confirmation.¹

A common etiology in those over 60 years is degenerative changes in the cervical spine. The intervertebral foramen and disc can decrease in size and put pressure on the nerve roots that branch from the intervertebral foramen to the arms and hands.³ Patients present with numbness in their hands and arms with or without neck pain and clinical assessment can reveal some or all of the following: reduction in dermatomal sensation, reduction in deep tendon reflexes and myotomal weakness for the involved nerve root.

Conventional treatment commonly involves non-steroidal anti-inflammatory drugs (NSAIDs) and surgery. However, in older patients recovery from surgery takes longer and there are often worse surgical outcomes and longer hospital stays.⁴ Alternatively, conservative therapy can include chiropractic care, cervical traction, cranio-sacral therapy, soft tissue therapy and physiotherapy. In 2008 Whalen reported that 80-90% of radiculopathy resolves with conservative care.¹ It has been shown that a multimodal approach for geriatric patients with cervical radiculopathy is effective in reducing pain and increasing spinal function and motion.⁵ Roffers et al reported improvement in a young woman with traumatic
cervical radiculopathy following chiropractic care. Other studies have also shown improvement associated with chiropractic care in cervical radiculopathy caused by cervical disc herniations. The purpose of this case study is to add to the growing body of evidence that supports chiropractic as a care option for geriatric patients suffering from radiculopathy.

Case Report

History

A 61 year old New Zealand Samoan female presented for chiropractic care. She worked 40 hours per week as an administrative assistant, seated at a desk. She had mild hypertension rated bilaterally at 140/90 and was not taking any medication at the time of presentation.

The patient reported a two month history of numbness, tingling and a burning sensation in her right arm affecting her lateral arm at the deltoid tuberosity and right thenar eminence. She reported experiencing pain from the lateral forearm to dorsal hand, thumb and index finger. The pain was felt up to 12 times per day and lasted for a few minutes and was rated as 4-5/10 on a visual analogue pain scale and was progressing. The patient reported that stretching of the cervical spine muscles was not helpful.

The patient also complained of stiffness in her posterior neck, primarily on the right side of the C7/T1 spinous processes. This had started insidiously twenty years earlier. She first noticed this with restricted range of motion in the neck, rating it at a 1/10 on a visual analogue pain scale. The patient had not sought any previous care for her presenting condition.

Examination

Chiropractic, neurological and cardiovascular examinations were performed. Blood pressure was 140/90 bilaterally and the patient reported that this had been high for 12 months and her general practitioner had advised her to lose weight. Her body mass index (BMI) was recorded as 30.8 which is considered to be obese.

Neurological screening including myotome, dermatome, and reflex tests of the upper and lower extremities were performed. The biceps deep tendon reflex was reduced (+1) on the right. Range of motion of the cervical spine was reduced for lateral flexion and rotation bilaterally. Postural assessment revealed anterior head carriage, loss of the cervical lordosis, and elevation of the left shoulder. Vertebral subluxation findings at C2, T1, T8, right ilium, C1, C7, T9, T12 were noted upon spinal examination.

The working diagnosis was “C5/C6 cervical nerve root impingement and vertebral subluxation complex.” C5 radiculopathy presents with deltoid and bicep muscle weakness and a reduction in the C5 bicep tendon reflex. C6 radiculopathy presents with sensory changes in the lateral forearm to the dorsal surface of the hand, thumb and index finger and the brachioradialis reflex can be depressed. The muscles affected are bicep brachii, extensor carpi radialis longus and brevis.

Intervention

The patient presented twice a week for 6 weeks and was adjusted using the Diversified technique with a progress report on the 12th visit.

At the progress visit the patient reported greater ease with movement and reduction in numbness at the right C5 and C6 dermatome. She also mentioned an improvement in posture, an increase in flexibility, walking, standing, lying, sleeping, reduced stress, an increase in alertness and state of mind. RAND36 Health Survey scores showed an improvement in general health from 80 to 85 and physical function from 80 to 100. Her bicep tendon reflex returned to normal at +2. There was an increase in cervical rotation and visual analogue scores improved from 4-5/10 to a 0-1/10 pain. After 2 months of chiropractic care the sensory changes in the lateral forearm to the dorsal hand had completely resolved.

Discussion

The resolution of cervical radiculopathy in this case study contributes to the small body of evidence that suggests that older patients with degenerative conditions may benefit from receiving chiropractic care. There are many theories that may explain why chiropractic care may help patients suffering from nervous system dysfunction. Haavik et al proposed that vertebral subluxations may lead to altered sensorimotor integration and that the correction of the vertebral subluxation can result in improved functioning of the central nervous system.

The correction of the vertebral subluxation can improve radiculopathy and pain sensation, assist with balance, daily activities and movement in older patients. Studies show that after periods of prolonged sitting, longer healing time occurs and disc dehydration can lead to the incidence of disc degeneration disease. This is important especially as the population is ageing and there is increasing interest in alternative, conservative therapy. In New Zealand those over the age of 65 will double over the next 20 years to around 1.2 million in 2036.

It should be acknowledged that there are inherent limitations associated with the case study design such as the potential for natural progression and confounding variables being present that are associated with the uncontrolled nature of case studies. Little is known about the natural progression or duration of cervical radiculopathy. More research is vital to add to the limited body of knowledge concerning the relationship between chiropractic care and improvements in cervical radiculopathy.

Conclusion

This case reports a reduction in cervical radiculopathy in a geriatric patient receiving chiropractic care. It adds to the growing body of evidence that chiropractic care may be beneficial for some older patients suffering from degenerative conditions. More research is required to better understand the role chiropractors may play in caring for this patient population.
References


Cervical radiculopathy