Case Study

Long Term Chiropractic Care and Parkinson’s Disease in a 73 Year Old Male: A Case Report

Abstract

Objective: To present the case of a 73 year old patient with Parkinson’s disease with concomitant vertebral subluxations.

Clinical Features: The patient presented to a chiropractor at age 63 seeking relief for chronic lower back pain. He had been experiencing a resting tremor in his right arm since 2000 and was diagnosed with Parkinson’s disease in 2003 at which time he was prescribed Disipal (50 mg, once daily). His main complaints at the time of presentation were loss of balance, trouble initiating gait, and foot drop in the left leg.

Interventions and Outcomes: Chiropractic adjustments were delivered using Diversified technique at a frequency of three times per week for four weeks, then decreased to once a week for the next ten years. After 10 years of chiropractic care and medical therapy the patient is now experiencing fewer symptoms than when he was first diagnosed with Parkinson’s disease and is still able to have an active lifestyle caring for himself and playing sports several times per week.

Conclusion: It is possible that this patient benefited by adding chiropractic care to his existing drug treatment for Parkinsonian symptoms. Further research is needed to investigate the potential role chiropractors may play in providing care to people with Parkinson’s disease.

Key Words: Chiropractic, vertebral subluxation, adjustment, spinal manipulation, Parkinson’s

Introduction

Parkinson’s disease (PD) is a progressive movement disorder marked by tremors, rigidity, bradykinesia, and postural instability. It is thought that neurodegeneration is a result of the aggregation of alpha-synuclein proteins, believed to occur at least a decade before the onset of symptoms. PD has a major effect on the quality of life of patients, who gradually lose autonomy and cognitive function. The decline in quality of life proceeds at a rate that is five to seven times faster than the average yearly decline caused by normal aging in individuals without the disease. Parkinson’s disease mainly affects older people, affecting around one percent of the population over sixty and the disease burden in developed nations is expected to increase as the population ages. The relationship between chiropractic and PD has been reported in only a few case studies and mainly with the use of upper cervical chiropractic techniques as the intervention. For example, in a case study by Chung and Brown, it was found that self-reported measures of weakness, tremors, rigidity and overall mobility improved in a 67 year old female after six months of chiropractic care.

In terms of PD, proprioceptive insult may explain how Parkinsonism is influenced by subluxation. Proprioception facilitates the awareness of relative body position, movement and acceleration. However, in PD there are severe deficits in

Intestine

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propriocceptive capacity contributing to freezing, postural abnormalities, gait dysfunction and problems of balance.\textsuperscript{8}

In this case study we will add to the small but growing body of evidence that reports on the association between chiropractic care and PD.

Case Report

History

The patient in this case study, a 73 year old male, presented to the chiropractor ten years ago in 2005. He had lower back and pelvic pain, which had been present for 2 years. He had also been diagnosed with PD two years prior and was prescribed disipal (orphenadrine) (50 mg/day) at that time. He had Parkinsonian symptoms for five years prior to presenting to the chiropractor. His main complaints were tremor in the right hand, gait disturbance in the left leg, mainly caused by foot drop and trouble initiating gait, accompanied by loss of balance. Since the clinical onset of PD, the patient’s condition had worsened with respect to overall mobility and tremor. Before the onset of symptoms, the patient was active playing badminton, netball and walking several times a week. The main goal of care for the patient was to continue to play badminton for as long as possible.

Examination

The patient, retired and living alone, seemed happy and interested in preserving his health when he presented for chiropractic care. He was trying to lose weight and played badminton and walked several times a week. He had slightly reduced facial expression globally. Orthopedic examination was normal. Neurological examination showed decreased sensation in the C8 and T1 dermatomes on the right and marked tongue fasciculation’s as well as numbness in his left big toe. All other areas of the neurological exam were within normal limits. There was nothing to note in the regional examinations. Range of motion was slightly decreased in the lumbar spine bilaterally. Objective vertebral subluxation indicators were found at multiple levels throughout the spine and pelvis. X-rays were taken and showed calcification of the abdominal aorta, osteoporosis and mild degenerative and postural changes.

Interventions

The patient was checked by the chiropractor three times per week for the first 4 weeks. After the first 12 visits, the frequency of his care was reduced to once per week. He continued to be seen once a week for the next ten years. Besides receiving chiropractic care, Disipal medication was utilized for the treatment of Parkinson’s symptoms during this ten year period. Over the 10 year period adjustments were performed using Diversified technique in various areas of the spine from upper cervical to the pelvis. Over the past two years the most common areas of subluxation in this patient were the cervico-thoracic junction, the ilium and sacrum and the upper cervical spine. The left tibia was also adjusted fairly often. Diversified technique is the most commonly used of all chiropractic techniques and is the one most familiar to patients. The diversified adjustment entails a high-velocity, low-amplitude thrust that usually results in a cavitation of a joint.\textsuperscript{9} Home advice was given to the patient to stay active.

Outcomes

Ten years on from his initial visit, the patient’s symptoms had not progressed and subjectively he reported they had improved since the introduction of chiropractic care to his lifestyle. The tremor in the right hand was not present as often and the tremors had not spread to any other parts of his body. The patient noticed improvements in his balance following the first 12 adjustments. He was able to play badminton with more ease due to improvements in balance and greater range of motion. There were fewer subluxation indicators throughout the spine with a decrease in pain levels and increased general range of motion.

Discussion

The aim of chiropractic care is to enhance nervous system function so the body is better able to heal itself. In contrast, the medical treatment of Parkinson’s relies on external input. Levodopa and bromocriptine are the most common medical treatments for PD. In the study by Hely et al. 149 patients with PD were followed for 10 years while taking bromocriptine to see how the disease progressed. Of the 129 who were followed up after 10 years, 50 were deceased, one quarter were in nursing homes and only 4 were still employed.\textsuperscript{10} While they provide symptomatic relief, this study shows drug therapies for PD do not appear to slow overall progression.\textsuperscript{10}

The findings in our case study support previous literature which has examined the symptomatic progression, quality of life and neurological function of PD patients under chiropractic care. A pair of studies by Elster found that there was an improvement in the unified Parkinson’s disease rating scale (UPDRS) score of PD patients receiving chiropractic care. Following an International Upper Cervical Chiropractic Association (IUCCA) intervention period of three months in 10 patients there was an improvement of 25 percent in UPDRS score.\textsuperscript{5}

This was followed up by an in depth case-study of a single patient whose cervical spinal subluxation findings were closely monitored using thermography and paraspinal infrared imaging for nine months.\textsuperscript{5} This patient had a 43% improvement in UPDRS score during the study.\textsuperscript{5}

In a larger retrospective cohort study which sampled 37 patients with PD, 92% showed improvement in a subjective disease rating scale, with 43% showing ‘substantial’ improvement.\textsuperscript{9}

Bolstering the theory that chiropractic care may improve Parkinsonian symptoms, a pair of case studies found that there were improvements in PD symptoms as measured by the PD questionnaire-39\textsuperscript{11}, and a range of functional tests.\textsuperscript{12} While these positive results are interesting, the lack of controlled studies means there is a gap in the literature which requires further study.

The patient in this case study was taking Disipal, the active compound in which is orphenadrine. Orphenadrine is an anticholinergic with a predominantly central effect and only a weak peripheral effect.\textsuperscript{13} The motor symptoms of PD are the consequence of a disturbed balance between cholinergic and
dopaminergic neurotransmission due to loss of areas in the basal ganglia leading to a decreased dopamine production. Orphenadrine restores the balance between cholinergic and dopaminergic neurotransmission, and in a systematic review, was found to have significant benefit compared to placebo in four of five studies. All studies except one found a significant improvement from baseline in at least one outcome measure. Outcome measures in the five studies were too different for a combined meta-analysis and results varied greatly. Thus, it is likely that the drug had a mild or moderate effect on the patient’s Parkinsonism. It is also important to note that the patient’s symptoms had still progressed after two years of Disipal treatment (prior to the initiation of chiropractic care), and improvement only occurred following chiropractic intervention. It is possible that, in combination with Disipal treatment, chiropractic care helped to slow the progression of PD symptoms in this patient.

It should be acknowledged that there are inherent limitations of the case study design. Natural progression cannot be ruled out and the uncontrolled environment means confounding variables may be present. The other issue with this case report is that there are few objective measures for PD and predominantly patient reported measures. However it is possible that chiropractic care was beneficial for this patient. Further research is warranted to determine whether patients suffering from PD will benefit from chiropractic care and to compare the outcomes of chiropractic care with the outcomes of medical interventions, or in combination with it.

Conclusions

Chiropractic care may have helped to slow the progression of PD symptoms in this patient in combination with drug therapy. Further research is required to better understand the role that chiropractors may play in caring for patients with PD.

References

Figure 1: Changes in patient cervical range of motion before care and ten years following care.

Figure 2: Changes in patient lumbar range of motion before care and ten years following care.
RAND36 Quality of Life Scores

![Graph showing RAND36 Quality of Life Scores]

- Physical functioning
- Emotional wellbeing

Years:
- 2009
- 2013
- 2014

Score range:
- 0 to 120

June 1, 2015