Journal of Chiropractic Medicine (2014) 13, 116–120

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JOURNAL of CHIROPRACTIC MEDICINE

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Chiropractic Management of an 81-Year-Old Man With Parkinson Disease Signs and Symptoms

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Received 13 August 2013; received in revised form 13 January 2014; accepted 14 January 2014

Key indexing terms:
Parkinson disease;
Tremor;
Gait disorder;
Chiropractic

Abstract
Objective: The purpose of this case report is to describe the chiropractic management of a patient with Parkinson disease.
Clinical features: An 81-year-old male with a 12-year history of Parkinson disease sought chiropractic care. He had a stooped posture and a shuffling gait. He was not able to ambulate comfortably without the guidance of his walker. The patient had a resting tremor, most notably in his right hand. Outcome measures were documented using the Parkinson's Disease Questionaire-39 (PDQ-39) and patient subjective reports.
Intervention and outcome: The patient was treated with blue-lensed glasses, vibration stimulation therapy, spinal manipulation, and eye-movement exercises. Within the first week of treatment, there was a reduction in symptoms, improvement in ambulation, and tremor.
Conclusion: For this particular patient, the use of alternative treatment procedures appeared to help his Parkinson disease signs and symptoms.
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Introduction

Parkinson disease (PD) is a neurodegenerative brain disorder that progresses slowly in most patients.[1] When approximately 60% to 80% of the dopamine producing cells are damaged, cardinal motor symptoms such as akinesia, rigidity, and tremor begin to appear.[1] A small number of patients have a direct mutation that causes it, but genetic predisposition and environmental factors are most commonly the cause.[1] PD is a central nervous system disorder resulting from destruction of the substantia nigra, which initiates dopamine release, an inhibitory transmitter.[2–4] The lack of dopamine causes a continuous excitatory signal to be sent to the corticospinal tract of the spinal cord, causing over-excitation of the motor cortex; this over-excitation creates the typical PD symptoms.[2–4]

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http://dx.doi.org/10.1016/j.jcm.2014.06.002
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PD is diagnosed clinically, based on the presence of resting tremors involving a thumb or few fingers, rigidity, bradykinesia, gait and balance problems, often in the sixth or seventh decade of life.[3] A diagnosis of PD is not made from magnetic resonance imaging (MRI), but this imaging can help in determining some of the portions of the brain that are effected.[5] Regular MRI imaging in the early stages of PD is mostly ineffective; however, late stage PD shows marked cortical atrophy.[6]

PD is typically treated with dopaminergic replacement therapy, monoamine oxidase inhibitors, amantadine, or dopamine agonists.[7] This treatment tends to be effective in the beginning but as tolerance to medications grows the effectiveness is lessened.[7] In late stage PD when medication is no longer effective, deep brain stimulation is currently used which may also decrease the progression of cognitive and motor decline in early stages of PD.[7]

There are a variety of conservative, non-pharmaceutical treatments for PD including exercise, physical, occupational, speech therapies, and chiropractic manipulation.[8–10] There are 2 case reports that suggest that chiropractic treatments may decrease essential tremors in patients.[8,10] Various complementary and alternative medicine (CAM) therapies have reported to improve activities of daily living and function, and when used in conjunction with medical management or neurosurgical treatment, a PD patient might be able to maximize functional ability and minimize secondary complications.[8–11]

At present, there is little published in the chiropractic literature that describes the chiropractic management of patients with PD and no known case reports that include the inclusion of functional neurology. Therefore, the purpose of this case report is to describe the chiropractic management of a patient with PD.

Case Report

An 81-year-old man with a 12-year history of PD presented for a general health checkup to a chiropractic clinic. He used a walker and had short, abrupt steps that shortened progressively as he fatigued. He would stop abruptly at intervals due to his inability to coordinate movement. While standing, he had severe anterior head carriage, as well as excessive kyphotic posturing (~20°-25°) which he was unable to straighten.

Passive ranges of motion of his extremities showed rigidity with movement. It was difficult for him to extend his arms. His cervical musculature was rigid when lying supine; it took 3 to 5 seconds for his head to relax onto the exam table. When asked questions, he had difficulty responding due to stuttering pauses, which were frequent. His past medical history revealed hypertension controlled with lisinopril, hypothyroidism controlled with levo thyroxine and PD being treated with amantadine and ropinirole.

As part of the examination, he was asked to wear a pair of blue-lensed glasses. He subjectively reported a favorable response to the blue glasses which he said created a slowed tremor; however, there was not a change in visualization of the tremor. On visual examination there was a noticeable leftward lean. When asked about the leaning, he responded that he did not realize he was leaning toward the left.

He performed a finger-to-nose test with both eyes opened then closed, which resulted in a tremor bilaterally at the initiation of movement which subsided throughout the movement, and returned upon ending the test with the finger at his nose. When examining fluidity of eye movement pursuits, there was disruption upon leftward movement. He then followed a moving target to the left of his visual field. When examining the motion of his eyes, there were abrupt pauses in movement. He demonstrated a resting tremor of his right hand that was continuous throughout the entire examination.

Treatment visits consisted of wearing blue lensed glasses, vibration therapy, mirror imaging and cross-crawl exercises, and chiropractic manipulation. During all visits the patient was given blue lensed glasses to wear. He was also asked to wear these blue lensed glasses while at home and as often as possible. Vibration therapy in the form of a VibraCussor was performed on the right side of his body, it was placed on his right wrist, elbow, knee, and ankle for 5 to 15 seconds at each location then repeated. While performing mirror imaging exercises, he would stand laterally with his right side against a mirror in order to inhibit the view of his right side. He was instructed to only observe his left hand, through the reflection in the mirror while performing rapid alternating motions of the left fingers. He would alternate finger movements with palmer flexion and extension exercises. This was performed for no longer than 1 minute, at 2 separate times. During cross-crawl exercises, he would alternate contra lateral arm and leg swings. The patient would perform 10 to 15 repetitions, while lying in a supine position. A long-axis standing thoracic chiropractic manipulation would be performed at every visit focusing on the middle thoracic area.

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