Improvement in Mobility, Emotional Wellbeing & Quality of Life in an Older Adult Following Subluxation Based Chiropractic Care: A Case Report

Abstract

Objective: To describe the changes in mobility, emotional status, and quality of life in an 82 year old female with bilateral osteoarthritis of the knees who was receiving chiropractic care.

Clinical Features: An 82 year old female presented to a chiropractor with lack of mobility and function due to chronic osteoarthritis of the knees bilaterally, and degenerative disc disease and postural alterations through the lumbar spine. Associated emotional stress was also of concern as a contributor to impaired quality of life.

Intervention & Outcome: Chiropractic care using Activator Methods Chiropractic Technique was provided for the correction of vertebral and extremity subluxations. The patient demonstrated physical improvements in mobility and RAND36 assessment revealed an improvement in her Physical Component Summary score of 11.65. Emotional wellbeing improvements were also found by using both RAND36 and PHQ-4 assessments.

Conclusion: Chiropractic care was associated with improvements in the patient’s presenting complaints and quality of life. More research is needed to investigate the role chiropractors may play in helping older adults with conditions associated with aging.

Key words: Aging, chiropractic, stress, psychological, emotions, knee, mental health, osteoarthritis, Activator Methods, vertebral subluxation

Introduction

Older adult populations suffer from a wide range of health conditions, one of which is osteoarthritis (OA). OA is the most common of 140 different types of arthritis and is a degenerative condition involving the cartilage.1-3 This condition generally involves weight bearing joints such as feet, knees, hips and the spine. There are several contributing factors towards the development of osteoarthritis which include age, exercise, gender, heredity and trauma of the joint.2,3

OA causes pain and often results in restricted movement and swelling with stiffness at the area involved.1-3 While the condition is not curable, traditional approaches to manage OA involve medications (painkillers, NSAIDS and steroidal injections to the joint), exercise (stretches and aerobics), heat or cold application, and surgery (replacement or repair).1-3 Prognosis is dependent upon severity of the degenerative process and the patient’s management choices. There is some evidence to suggest chiropractic management of an older adult with OA of the hip is also beneficial. Benefits include improved mobility, balance and gait.4 Limitations in activities of daily living caused by the physical effects of OA can have a dramatic effect on the emotional status in older people which can lead to further compromised health.5-7

The purpose of this paper is to report on an older person with OA who experienced positive changes to her restricted mobility and quality of life while receiving chiropractic care.
Case Study

History

An 82 year old female presented to a chiropractor with a main concern of pain and swelling in her knee joints causing decreased mobility. This included difficulty walking, climbing stairs and steps and a slow gait, often requiring use of a walking stick. Tricompartmental OA in the knees had been clinically diagnosed by a radiologist. The pain, ranging from 5/10 at best to 8/10 at worst, had been present for 5 years with constant discomfort and fluctuating severity of pain. The patient also suffered from a considerable amount of emotional stress.

Examination

During her chiropractic examination Derifield leg checks and sacral restriction assessment could not be assessed due to pain and discomfort. Gait assessment showed a waddling gait with bilateral foot flare. Tandem and toe walking were unable to be performed due to apprehension of loss of balance. Lower extremity examination revealed swelling of the knees bilaterally with tenderness upon palpation. Range of motion at the knees was decreased due to pain. Patella tracking produced mild pain at the knees upon testing. Thomas, McMurray’s, Apley’s compression and distraction tests were unable to be performed due to pain at the knees. Cervical range of motion in extension was restricted at 65° and lumbar spinal ranges of motion were restricted in extension at 30° and lateral flexion bilaterally at 20°.

Radiographic imaging of the lumbopelvic spine showed degenerative disc disease at L1 and L4/L5, a lumbosacral transitional segment at L5 (functionally sacral), mild osteoporosis and a convexity to the right with an apex at L3 and a reduction of lordosis.

RAND36 scores were assessed and can be found alongside physical and mental component summary scores in tables 1 and 2. The PHQ-4 questionnaire to assess emotional health and stress was also used and results are shown in table 3.

Intervention

Over a period of five and a half months the patient was checked and adjusted where necessary twice a week for 34 visits using full spine Activator Methods Chiropractic Technique (AMCT). The most commonly adjusted segments were L4 (64.7%), T12 (55.9%), T8 (38.2%) and C7 (44.1%) with an average of 3-4 levels being adjusted at each visit using a low ring setting due to the patient’s osteoporosis. AMCT uses a hand-held instrument with a blunt stylus to deliver a specific, high velocity, low amplitude thrust for the correction of vertebral subluxation.

Outcomes

Over the course of care the patient subjectively noted improvements in mobility with increased willingness to exercise in the form of walking. Other areas of her health, including digestion, sleep, wellbeing, eating habits, toilet habits and stamina, were also reported to have improved at progress visits. Initial complaints of knee pain were not completely resolved, however improvements to pain levels, with reduction to 5/10 at worst (previously 8/10), and increased mobility were reported. At the third progress evaluation, carried out 15 weeks into care, the patient’s spinal subluxation findings had also decreased. Lumbar range of motion was assessed using visual estimates and improved by the third progress evaluation with extension increasing from 30° to 35° and lateral flexion increasing from 20° bilaterally to 25°.

Rand36 scores changed over time as seen in Table 1. There was an overall improvement in her Physical Component Summary score of 11.65 at the time of the third progress evaluation. The Mental Component Summary scores showed an initial increase of 9.3, however due to a family crisis the scores dropped by the second progress evaluation, carried out at 11 weeks into care, and had returned to approximately the original score by the third progress evaluation. Improvements of 2-5 points in RAND36 component summary scores are thought to be clinically significant. Further summary trends are shown in Table 2. PHQ-4 results were reassessed after the 34 visits and showed a 33.3% overall improvement as seen in Table 3.

At the second and third progress evaluations the patient wanted to attempt tandem and toe walking. At the second progress evaluation she was able to take one step with both forms of walking and by the third progress she was able to take two steps in each case.

Discussion

OA can have a substantial effect on an individual’s health and wellbeing and can cause a considerable amount of stress upon the body both physically and emotionally. As this is a prolonged condition, once diagnosed it is important to incorporate methods of management with minimal side effects and which, in the older adult population in particular, are easily accessible and do not require much extra effort.

Emotional stresses can play a major role in an individual’s wellbeing and the body’s ability to function and adapt to its environment. During the course of chiropractic care the patient showed improvements in mental and emotional health status as she subjectively noted that attention received at regular visits was a great contributor towards her feeling cared for. This demonstrates the impact a chiropractic visit can have on an individual. Apart from the chiropractic adjustment the patient also receives care and attention as their general health and wellbeing is taken into account.

Chiropractic aims to optimize nervous system function thereby improving overall function of the body in response to internal and external factors. By removing interference to the nervous system via adjustments of vertebral subluxation the brain and body are able to communicate better allowing for an increase in health and wellbeing including increased movement and improved lifestyle. This is important in all age groups but is particularly important in older people as the body’s susceptibility to impaired function increases.
While there is some evidence to support chiropractic care helping patients with OA, the majority of previous research has focused on OA of the hip. There is a lack of literature which focuses on vertebral subluxation based chiropractic care in older adults. There is limited literature on chiropractic care and its beneficial effects on emotional wellbeing.

The patient in this case study reported improvements in her health while she was under care, however it should be acknowledged that there are inherent limitations in the case study design which means conclusions cannot be made about causality. Besides the inherent limitations of the case study design further limitations of this study include potential issues with the accuracy of range of motion documentation as well as reliability of RAND36 scores. Range of motion was visualized by the Chiropractic Intern therefore limit accuracy due to lack of precision. RAND36 scores may be biased as the questionnaire had to be translated to the patient therefore a potential lack of understanding limits the validity of the scores. A randomized controlled trial with a population of older adults with OA undergoing chiropractic care is required to better understand the role chiropractors may play in caring for older adults with OA and related disorders associated with aging.

Conclusion

Chiropractic care may help older adults with OA. Further research is required to better understand the role chiropractors may play in caring for older people with OA and other health and wellbeing issues associated with aging.

References


Table 1 - RAND36 Scores over the course of care

<table>
<thead>
<tr>
<th>Scale</th>
<th>Score</th>
<th>1st progress</th>
<th>2nd progress</th>
<th>3rd progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Functioning</td>
<td>25</td>
<td>30</td>
<td>15</td>
<td>30</td>
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<tr>
<td>Role Limitations due to physical health</td>
<td>0</td>
<td>100</td>
<td>75</td>
<td>75</td>
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<tr>
<td>Role limitations due to emotional health</td>
<td>65</td>
<td>86</td>
<td>18</td>
<td>61</td>
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<tr>
<td>Energy/fatigue</td>
<td>50</td>
<td>65</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>Emotional wellbeing</td>
<td>64</td>
<td>80</td>
<td>56</td>
<td>72</td>
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<tr>
<td>Social functioning</td>
<td>75</td>
<td>87.5</td>
<td>75</td>
<td>75</td>
</tr>
<tr>
<td>Pain</td>
<td>67.5</td>
<td>77.5</td>
<td>67.5</td>
<td>67.5</td>
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<tr>
<td>General health</td>
<td>70</td>
<td>70</td>
<td>70</td>
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</table>

Table 2 - RAND36 Summary Scores

<table>
<thead>
<tr>
<th></th>
<th>Physical Component Summary Scores</th>
<th>Mental Component Summary Scores</th>
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<tbody>
<tr>
<td>Initial</td>
<td>30.16</td>
<td>42.73</td>
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<tr>
<td>1st progress</td>
<td></td>
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<tr>
<td>(at 8 weeks)</td>
<td>42.40</td>
<td>52.02</td>
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<tr>
<td>2nd progress</td>
<td></td>
<td></td>
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<tr>
<td>(at 11 weeks)</td>
<td>47.08</td>
<td>24.54</td>
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<tr>
<td>3rd progress</td>
<td></td>
<td></td>
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<tr>
<td>(at 15 weeks)</td>
<td>41.81</td>
<td>41.25</td>
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### Table 3 - PHQ-4 Assessment Results

<table>
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<tr>
<th>Feeling described</th>
<th>Not at all</th>
<th>Several Days</th>
<th>More than half the days</th>
<th>Nearly everyday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feeling nervous, anxious or on edge</td>
<td>Pre-care</td>
<td></td>
<td>●</td>
<td>Post-care</td>
</tr>
<tr>
<td>Not being able to stop or control worrying</td>
<td>Pre-care</td>
<td></td>
<td>●</td>
<td>Post-care</td>
</tr>
<tr>
<td>Little interest or pleasure in doing things</td>
<td>Pre-care</td>
<td></td>
<td>●</td>
<td>Post-care</td>
</tr>
<tr>
<td>Feeling down, depressed or hopeless</td>
<td>Pre-care</td>
<td></td>
<td>●</td>
<td>Post-care</td>
</tr>
</tbody>
</table>