CHIROPRACTIC MANAGEMENT OF CHRONIC LOW BACK PAIN: A REPORT OF POSITIVE OUTCOMES WITH PATIENT COMPLIANCE

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Paper submitted April 28, 2004; in revised form July 21, 2004,
November 22, 2004.
Sources of Support: none

ABSTRACT

Objective: The purpose of this case report is to demonstrate how focused encouragement and support helps ensure a patient's compliance to home protocols and recommended treatment plans with positive outcomes.

Clinical features: The patient was experiencing chronic low back pain complicated by diffuse annular bulging of a lumbar disc with radicular left leg pain and foot numbing. The numeric pain scale, positive orthopedic and neurological tests, and the length of time the patient had a chronic low back condition helped to determine when she could start rehabilitation exercises.

Intervention and outcome: The patient was treated using chiropractic adjustments and active and passive rehabilitation. As the pain scale value decreased and orthopedic tests became negative, more challenging spinal stabilization protocols were introduced.

Conclusion: A patient with a chronic condition may need extra encouragement along with positive support for a positive outcome to chiropractic care. The need for cooperation from the patient can often be overlooked in treating a chronic condition. Chiropractors should take extra steps to focus on the patient's compliance with the recommended treatment plan and home protocols. (J Chiropr Med 2005; 4:39-42)

Key Indexing Terms: Chiropractic; Rehabilitation; Low Back Pain; Intervertebral Disk Displacement; Patient Compliance

INTRODUCTION

The following case is an example of how a patient can overcome a common condition with the determination of the chiropractor and the cooperation of the patient. Although unremarkable in its condition, this case reinforces how chiropractic manipulation and rehabilitation protocols can improve a chronic condition without the use of medication or surgery.¹ A chronic low back pain condition may not only be complicated by lumbar disc involvement, but also delayed in progress by the patient's conception of a chronic low back condition. Successful treatment including chiropractic adjustments and spinal stabilization exercises may involve the deprogramming of a "chronic" perception.

CASE REPORT

A 60-year-old, overweight female experienced occasional, dull, aching, left anterior and lateral thigh pain with numbing into the left leg and foot. The pain was insidious and had been progressing for approximately 4 weeks. The patient also experienced bilateral dull, aching lower back pain. Standing more than 20 minutes increased the left leg pain. She was a nonsmoker, social drinker, and had been diagnosed previously with fibromyalgia. The patient consulted with a rheumatologist who prescribed medication and ordered a MRI study. She had been taking 3 800 mg tablets of ibuprofen and 3 cyclobenzaprine (Flexeril) each day with limited relief. She also was prescribed Prozac, Axid, Premarin, and thyroid medication. This patient lived with her husband and was not employed. Her daily activities included light labor, sitting, and leg stretches.

At the initial examination she rated her pain at a 0/10 on a numerical pain scale (NPS), with 10 being severe and 0 being no pain. Standing 20 minutes or greater increased the pain to an 8/10. A Revised Oswestry Chronic Low Back Pain Disability Questionnaire rated her at 38% (moderate) disability. A Health Appraisal Questionnaire provided by Nutrition Dynamics indicated this patient as a good can-

didate for UltraClear products also supplied by Nutrition Dynamics. UltraClear is a medical food formulated with specific vitamins, minerals, and other food factors that nutritionally support improved gastrointestinal function. She did not take the UltraClear products.

Lumbar ranges of motion as measured with a goniometer were: decreased flexion at 50 degrees; left lateral flexion at 23 degrees with tightness felt at the end range of flexion; extension 25 degrees; right lateral flexion 25 degrees. Upon palpation she experienced mild to moderate tenderness in the lumbo-sacral junction bilaterally and left piriformis muscle. She had tight erector spinae, quadratus lumborum, and hamstring muscles bilaterally. The patient had no difficulty with movement on the table during examination. Deep tendon reflexes were +2 bilaterally for the patellar reflex, and +1 bilaterally for the Achilles' reflex. Muscle strength testing was +5/5 (normal) for all major muscle groups in the lower extremities. Minor's Sign was positive on the right. The patient appeared to have low self-esteem.

Anterior to posterior, lateral lumbo-pelvic, and lateral lumbosacral-spot plain film radiographs were taken. With the patient's chronic low back pain, these x-ray views were utilized to help rule out any underlying pathology, and determine at what level a lumbar chiropractic subluxation may be provoking low back pain. The lateral lumbar and L5-S1 spot views revealed a mildly decreased lumbar lordotic curve, narrowed disc space height between the L4-S1 vertebrae, and apparent decreased articular facets between the L4-S1 vertebrae. The anterior to posterior view showed anterior/inferior translation of the L4 vertebra, and an internally rotated left ilium. No recent fracture or gross osteopathology was visualized. Based upon these findings, the diagnostic impression was degenerative disc disease at L4-L5 and a lumbar subluxation complex of L4.

The MRI study ordered by the patient's rheumatologist revealed mild and diffuse annular bulging at L3-L4, diffuse annular bulging with soft tissue neural foraminal stenosis (right greater than left), mild facet joint degeneration at the L4-L5 level, and left paracentral and foraminal disc degeneration at the L5-S1 level. A MRI study can help determine an underlying disc problem possibly breaking down a nerve root's structure and function not seen on plain x-ray films.²

The working diagnosis was a chronic lumbar strain with paralumbar muscle dysfunction, associated lumbar subluxation complex, and probable lumbar disc involvement with radiculopathy.

Treatment

The patient was treated 37 times for a 13-month period. The patient began a treatment plan of 3 treatments per week for 2 weeks. This treatment included chiropractic adjustments, interferential electrical muscle stimulation (EMS), and both piriformis muscles were stretched after adjustment with a postisometric relaxation (PIR) technique. Entrapment of the sciatic nerve by the piriformis muscle may mimic symptoms of a possible pseudosciatic condition or a piriformis syndrome.³ It was recommended that she begin home stretching of the lower extremities with emphasis on the iliotibial band muscles to decrease a "lower crossed syndrome".⁴ By the end of the initial 2-week treatment plan the patient reported a decreased pain level of 2/10 NPS with left lateral thigh pain felt greatest by the end of the day, and with increased activities of living (ADL).

With her condition beginning to improve, her treatment plan was decreased to once a week for 3 weeks. Orthotics were supplied to help improve her gait and paralumbar muscle function.³ During this time she reported a pain level of 0/10.

Treatments became sporadic for almost 6 weeks because the patient was on vacation. During this time she reported her pain level continued to be at 1/10. Occasional low back discomfort continued, but she felt she was still improving with chiropractic spinal adjustments and home stretching protocols. She also reported the improvement of no radicular pain in the lower extremities.

At the end of the 6 weeks of sporadic treatments the patient presented with an exacerbation of low back pain. Extended traveling including airplane flights and prolonged walking for more than 20 minutes increased the low back pain to 7-8/10 and she had a recurrence of left leg pain. Yeoman's test and Ely's tests were positive on the right. She was treated with EMS and an adjustment. A follow up treatment about 2 days later revealed about the same pain level but no positive orthopedic tests. Over the next 3 weeks the patient was treated once a week for 3 weeks with adjustments, EMS, and PIR of the

piriformis muscle bilaterally. During this time her pain level remained about 6/10, but no positive lumbar orthopedic tests were found. It was recommended that she begin a slow, progressive home treadmill regimen. This was recommended to discourage prolonged sitting, and to take pressure off the low back area and annular bulging at L3-L4. After the 3-week treatment plan, the patient again interrupted the treatment plan. Despite encouragement for the patient to continue on a treatment plan, she was again sporadic in her treatments and noncompliant to the recommended home protocols.

She was treated once a month for 4 months. During this time her pain level stayed about a 4/10. A positive double straight leg raise on the left greater than right with tight and tender paralumbar muscles, and a tender left piriformis and tensor fascia lata muscles were noted. She was noncompliant to the recommended home stretching for her hip flexors, tensor fascia lata, and hamstrings.

Eight months after her initial consultation with limited treatment plans, sporadic treatments, and no resolution of her low back pain, the patient took it upon herself to consult with a neurosurgeon. At one of her follow-up treatments with the chiropractor she reported that the neurosurgeon recommended a nerve block. Upon palpation she experienced tender and hypertonic erector spinae muscles and a tender left piriformis muscle. It was at this time the patient was encouraged to take a more active role in her treatment plan.

She was instructed to begin low back bracing, level one bridging for 1 minute, and stretching aimed at improving low back function. General aerobic activity of small periods of walking on her treadmill was again re-emphasized. She was encouraged to begin a personal notebook to chart her progress and bring it to each visit. With the new recommendations given, her treatment schedule was changed. She was treated 4 times a week to monitor her progress and compliance to the new recommendations. During the modified treatment plan, her compliance improved with the recommended stretching, aerobic activities including walking up to 10 minutes per day, and spinal stabilization exercises of bridging and level one dead bug exercises. EMS and adjustments were done each treatment. The patient felt she was improving overall with manipulation and the spinal stabilization exercises.

A brief exacerbation of increased low back pain occurred for about 10 days after she lifted a pot awkwardly. Her pain level increased to 7/10. Double straight leg raise and straight leg raise at 40 degrees were positive with hypertonic paralumbar muscles bilaterally upon palpation. She was treated with EMS and adjustments 5 times over a 2-week period. It was recommended that she use home cryotherapy, 5-minute walks, and low back brace only. Her pain level decreased from a 5/10 to 2-3/10 during this time and the double straight leg test was negative. She also reported a total loss of 9 pounds and increased stamina with her active role in her treatment plan. Gluteal muscle inhibition was found bilaterally and a one-leg stance for 10 seconds with eyes open was fair bilaterally. Her bridge and dead bug exercises were improving and becoming more stable. The patient also had a follow up with the neurosurgeon who recommended she continue with chiropractic care and the spinal stabilization protocols. She did not receive a nerve block. The treatment plan was again decreased to 1 time a week for 6 weeks.

In the middle of the treatment plan her pain level increased to a 5/10 with left thigh numbing after doing yard work. Yeoman's test was positive bilaterally but was negative by the end of the 6 weeks. Her pain was made worse with prolonged sitting. Her compliance throughout the 6 weeks to the treatment plan and spinal rehabilitation protocols was helping to improve her low back condition. Her stamina continued to improve during this time and she was able to increase her ADL. She was introduced to the quadruped exercise with one arm extended at a time to help improve spinal stability and function.

With her overall low back improvement, continuing progression of spinal rehabilitation exercises, decreased episodes of low back pain, increased ADL, increased spinal functional stability, and increased stamina and energy her frequency of treatments was decreased. She was treated with adjustments only an additional 3 times over a 2.5 month period. Although her low back discomfort did not completely resolve, it did remain centralized at her belt-line. During this time she was able to increase her walking to 15 minutes a day and begin level 3 bridge, level 3 dead bug, and level 3 quadruped spinal stabilization exercises. She was encouraged to follow up on an as needed basis.

DISCUSSION

Insidious low back pain is a common condition presenting to chiropractic and medical facilities on a daily basis. It is one of the most common health problems in the United States affecting up to 90% of adults.⁵ This accounts for about 74 million Americans a year.⁶ 40% of adults over the age of 40 are unaware they have a disc herniation.⁷ A disc herniation can irritate the nerve roots of the sciatic nerve.

The sciatic nerve is made up of the L4-S1 nerve roots. The L4 nerve root dermatome is tested on the medial side of the leg and foot. The L4 dermatome divides at the crest of the tibia medially. The motor aspect of the L4 nerve root is the tibialis anterior muscle and can be tested with a heel walk. The L4 nerve root reflex can be tested at the patellar tendon.⁶ The L5 nerve root dermatome is tested on the lateral aspect of the leg and dorsum of the foot. The L5 dermatome divides at the crest of the tibia laterally. The extensor hallucis longus and the extensor digitorum longus muscles can be tested to evaluate the L5 motor status, and can be tested with a heel walk.⁶ The S1 nerve root sensory status can be tested on the lateral aspect of the foot. The motor aspect of the S1 nerve root can be tested in the peroneus longus and brevis muscles. The toe walk test can evaluate the S1 motor status. The S1 nerve root reflex can be tested at the Achilles' tendon.⁶

To identify if a patient should be instructed to exercise, the Physical Activity Readiness Questionnaire can be used. This outcome measure has a sensitivity of essentially 100% and a specificity of 80% for detection of medical contraindications to exercise. A cardiac test and blood test may need to be considered to help rule out any underlying factors when beginning patients on an exercise regimen who have otherwise not had nor have a low exercise regimen.

This patient was pleased with her progress and encouraged with her outcomes, and also demonstrated increased self-esteem. She eventually joined the Curves for Women gym and continued her own home exercise program. Her prognosis was favorable when she became compliant with the treatment plan and home protocols. Complicating factors

included her obese body type, low self-esteem, initial low compliance to the treatment plan including extended time between treatments, paralumbar muscle dysfunction, and confirmed lower lumbar disc derangement and degeneration. Compliance to the treatment plan and home protocols were keys to this patient's decreased low back pain and improved function. As stated by Lawrence and Cassidy,⁸ "Current biological research shows the value of movement in maintaining the health and strength of collagenous, muscular, and bony tissues while emphasizing the need for joint movement and relatively high levels of activity throughout the life cycle."

CONCLUSION

Cases involving low back pain complicated by diffuse annular bulging of a lumbar disc have shown to increase low back pain with radiculopathy and lead to a chronic condition. The paralumbar musculature, however, should also be addressed for proper biomechanical function and long-term pain relief.⁴ This patient is a good example of how in some cases chiropractors could take an extra step to focus the patient's compliance on the recommended treatment plan. Additional encouragement and support helps the patient become a part of their own health care. Incorporation of active care allows the patient with or without pain to restore normal function.⁹ Thus, the patient can become more productive in their lifestyle and possibly avoid surgery.

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