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Case Report

Chiropractic Care of Postlaminectomy Syndrome: A Report of 2 Cases

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ABSTRACT

Herein, the author presents two cases where chiropractic techniques appear to have been successful in alleviating post-laminectomy syndrome (PLS). PLS is a condition characterized by persistent back pain or leg pain after spine surgeries. Nerves can get damaged or inflamed due to various (preexisting, intra- or postoperative) conditions, resulting in continued low back pain. These cases are notable because the precise cause of this condition remains unclear and, currently, effective strategies for patients with this painful syndrome have not been established.

KEYWORDS: Chiropractic; Post-laminectomy syndrome; Posterior.

INTRODUCTION

Post-laminectomy syndrome (PLS) is a nonspecific term describing chronic pain syndromes after back surgery. Causes of PLS appear to be multifactorial and effective strategies have not been well-implemented. Patients with PLS often live with continued pain and disability [1], which can cause frustration and despair.

CASE REPORTS

CASE: 1

A 44-year-old wheelchair-dependent woman had been troubled by aching in right low back for 4 months, after bending over to pick up a stack of papers. The patient had posterior decompression (L4/5 and L5/S1) for disc herniation 10 years earlier. Her pain, being rated as 8/10 on the pain scale, travelled down the right buttock and right calf. It was provoked with prolonged sitting, bending and straining. Relief was achieved with getting up to stretch or with lying down.

She denied saddle anesthesia, bowel or urinary changes. The patient had returned to her former surgeon but refused further surgery. Baclofen (a muscle relaxant) and tramadol (a pain reliever) were prescribed, which did not help. During that time physiotherapy, acupuncture, traditional Chinese therapy and alternative medicines were also tried to no avail. She was restricted by her ability to maintain lifestyle, and unable to commute to work by herself.

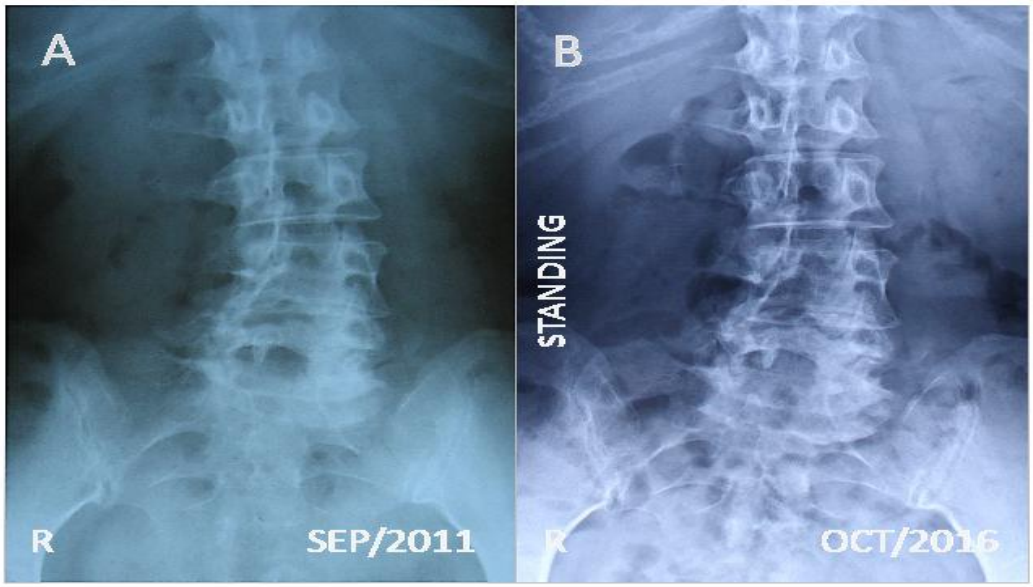
The patient presented with an antalgic and altered gait, and could not rise up from sitting position. She was too weak to perform toe-walking. Joint stiffness and painful symptoms were noted in the lower lumbar spine, with hypertonicity and tenderness palpable in the paraspinal muscles. Hypoesthesia was noted along the right lateral leg and foot. There was no evidence of muscular atrophy or fasciculation. Lumbar MRI demonstrated disc protrusions at L4/5 and L5/S1, resulting in a spinal stenosis, partial effacement of exit foramina, and impingement of the L5 nerve root. She was diagnosed with post-laminectomy syndrome.

Chiropractic therapy was selected to reduce swelling, stretch and relax the tight muscles, restore the motion of restricted spine, and re-educate the sensory motor system through proprioceptive exercises. Techniques involved CSMT (diversified chiropractic adjustments), FD (flexion-distraction mobilization) and ultrasound vibration. The initial programme frequency was 5 applications weekly for the first two week; and then shifted to three times weekly over the next three months. Noting an improvement in her lifestyle, she reported that her pain gradually lessened and medication reliance was reduced. She was then able to complete activities of daily living.

The second phase of treatment was performed twice a week for another six months, focusing on improving muscle strength and joint functions in the lower extremity and thoracolumbar area. Subsequently the patient had been receiving maintenance treatment of the whole spine on a weekly basis. Over the past 5 years, the patient had a significant functional improvements and an increased

tolerance to walking for 30 minutes with no pain, but occasionally took painkillers to maintain her daily activity. Follow-up radiographs revealed an improvement of her lumbar curvature, compared to the initial findings (Fig. 1).

Figure 1. A. Lumbar radiograph showed intervertebral space narrowing at L1/L2, L2/L3, L4/L5 and L5/S1 levels, L4/L5 posterior disc bulging, L5/S1 spondylolysis, s/p L4/L5 and L5/S1 laminectomy, B. Follow-up radiograph revealed an improvement of her lumbar scoliosis, in comparison to the initial image.

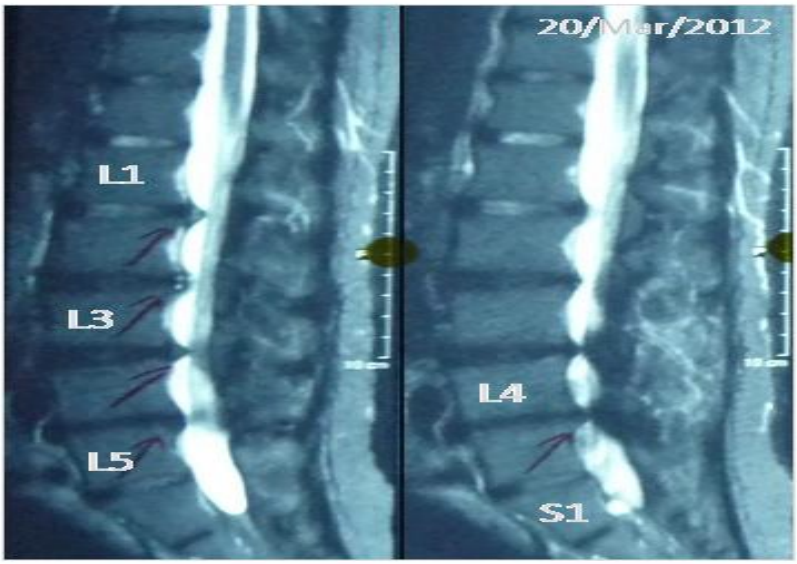


CASE: 2

A 44-year-old woman presented for evaluation of low back pain and limping. She had a L3/4 and L4/5 laminectomy for traumatic disc herniation 26 years earlier. However, chronic pain persisted after surgery. Her low back pain exacerbated after cleaning house 3 months ago. She described the pain as stabbing and radiating to the left anterior thigh, and rated as 8-10/10 on pain scale. The pain aggravated on sitting more than 5 minutes, and was brought on by motion, sneezing and straining at stool. She ambulated with an antalgic gait using a walker and was mostly homebound. For the acute symptomatic period, she had tried etoricoxib 90 mg (NSAID) once daily, electrotherapy and acupuncture, which could not sufficiently eliminate her pain.

Examination revealed a global reduced lumbar range of motion (ROM) at all motions. Her straight-leg-raising was positive at 35° on the left and negative on the right, and light touch sensation was intact in bilateral lower extremities. Palpation revealed joint stiffness in the lower thoracic and all lumbar segments, tenderness with spasm of the paraspinal and quadratus lumborum muscles. Lumbar MRI also revealed posterior disc bulge at L1/L2, L2/L3, L3/L4 and L4/L5 levels, s/p right L4/L5 laminectomy (Fig. 2). She was given a diagnosis of post-laminectomy syndrome.

Figure 2. Sagittal T2 weighted MRI revealed s/p right L4/L5 laminectomy, straightening of the lumbar spine, posterior disc bulge at L1/L2, L2/L3, L3/L4 and L4/L5 levels (arrows), and narrowing of L4/L5 intervertebral space.



The chiropractic protocol started with 5 times weekly for the first week with CSMT (aimed at reducing pain and regional stiffness), and then shifted to 3 times weekly for the next two weeks with FD (aimed at analgesia and improving segmental range of motion). She reported a centralization of her symptoms within two weeks. Six months after the commencement of chiropractic care, the patient was nearly relieved of her painful syndromes, and able to walk unaided. Reevaluation demonstrated that her lumbar range of motion had improved and tenderness along the quadratus lumborum had decreased.

DISCUSSION

Lack of pain relief after spinal surgery is called post-laminectomy syndrome (PLS), or failed back surgery syndrome (FBSS). A laminectomy procedure is done to relieve pressure on the spinal nerves. In many cases, the spinal nerve root does not fully recover from its prior trauma, and spinal articulation may be irritated and inflamed, resulting in persistent back pain or leg pain. Inflammatory mediators are thought to contribute to neuropathic pain of nerve roots. In order to analyze the relationship between site of annular tear and side of radiating leg pain, 42 patients with discogenic low back pain at a single disc level with radiating leg pain were studied [2]. The results indicated that leakage of chemical mediators or inflammatory cytokines, which are produced in the painful disc, into epidural space through annular tear could cause damage to the adjacent nerve roots [2]. Such a chemical inflammation is often blamed for neuritic pain postoperatively. Another common occurrence is the presence of structural changes, including recurrent disc herniation and nerve root compression, pseudarthrosis, pelvic ligament instability and myofascial pain.

Treatment of PLS depends on the cause and the severity of back pain. Conservative options, appropriate for those who are not experiencing neurological deficit, include medications, physical therapy and stretching [3]. Various interventional techniques may also be recommended as ways to manage PLS. To evaluate clinical efficacy of alleviating chronic spinal pain, researchers found moderate evidence for pain relief of most interventional techniques [4], including intraarticular facet injection, sacroiliac intraarticular injection, epidural steroid injection, intradiscal electrothermal annuloplasty, percutaneous disc decompression, and vertebral augmentation procedures. For spinal cord electrical stimulation, implantable intrathecal infusion and percutaneous epidural adhesiolysis, the evidence is strong for short-term relief and moderate for long-term relief [4].

In a retrospective analysis of treatment outcomes in 32 patients with postsurgical lumbar spine pain, therapeutic effects were found in all who had been managed with chiropractic care. The pretreatment vs. post-treatment pain scores decreased significantly from a mean of 6.4 to 2.3, a reduction of 4.1 of 10 on numeric rating scale. No adverse events were reported for any of these postsurgical patients [3, 5]. A literature review of 887 source documents, researchers found that exercise therapy in conjunction with chiropractic management of low back pain is likely to speed and improve outcomes as well as minimize episodic recurrence [6]. The physiological mechanisms behind the effects of spinal manipulation are still unclear [7]. Main suppositions include reducing muscle hypertonicity via stretching, disruption of articular or periarticular restrictions, release of entrapped synovial folds, and hypoalgesia of the dorsal horn of the manipulated segment [3, 7]. This is done using a variety of different manipulative techniques and exercises.

CONCLUSION

This represents two cases of post-laminectomy syndrome where chiropractic techniques appear to have been successful in alleviating chronic back pain after surgery.

Conflicts of interest: There are no conflicts of interest

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