

## Spondylolisthesis with Spinal Stenosis

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*Editor's note: "Case Studies in Review" is a new column this year. Dr. Molina graduated from Los Angeles College of Chiropractic in 1994. Dr. Molina has a background in EMS and forensic pathology. She was an EMS trauma coordinator for special events in Las Vegas and the paramedic lead for the Department of Energy at the Nevada Test Site and at Los Alamos, New Mexico. She was also the forensic pathology assistant to the associate chief medical examiner in Las Vegas. Dr. Molina has received training in surface EMG and chiropractic rehabilitation and is a certified accident reconstructionist. She maintains a busy private practice in San Juan Capistrano, California.*

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### Case History

B.M. is a 64-year-old woman with a two-year history of increasing left lower extremity pain. There was a vague history of trauma reported as a fall onto her buttocks from a standing position, and her symptoms of left buttock and leg pain have been increasing in intensity thereafter. Walking and standing cause her pain to increase, while sitting and assuming a recumbent position decrease the pain. She is intolerant to left lateral lying. There is no loss of bowel, bladder or sexual function. She works as a travel agent and does a lot of sitting.

The patient's medical history is remarkable for endocrinopathy. Her medications include daily premarin, synthroid and ibuprofen.

On physical examination, she is a well-developed, well-nourished woman, alert and in no apparent distress when sitting in a chair. She has some discomfort in her left buttock and leg when transferring to the examining table and exhibits Minor's sign. She can forward flex 60°, then has some increase in pain in her left leg and exhibits dural tension. She can hyperextend some, but not without localized low back pain. Motor examination of the lower extremities shows mild weakness in the tibialis anterior and extensor hallucis longus on the left, otherwise the motor examination in both lower extremities is normal. The sensory and deep tendon reflex examinations are normal.

Range of motion of her hips and joints in the lower extremities does not reproduce her pain. The distal vascular exam is normal.

Chiropractic assessment yields joint fixation of the L4-L5 vertebrae and pelvis. The lumbar paraspinals and gluteals have an inelastic quality with areas of firmer, knot-like masses that demonstrate purposeful withdrawal on digital examination.

Radiographic weightbearing imaging studies were performed to evaluate her spine. A lateral view of the lumbar spine shows a grade I spondylolisthesis of L4 on L5. There is IVF encroachment and disc space is narrowing. There are end-plate changes at the vertebral level of L4-5 with suspect L4 nerve root compression in the foramen. An MRI of the lumbar spine was obtained.

Discussion: Isthmic Spondylolisthesis

This case illustrates the typical clinical and radiographic findings of isthmic spondylolisthesis associated with spinal stenosis. Although the patient has mild mechanical low back pain, presumably related to the unstable spondylolisthetic segment and its degenerative disc, her major symptoms are related to the nerve root compression. Physical examination confirms both L4 and L5 neurologic deficits on the left with a positive tension sign consistent with long-standing compressive radiculopathy at the L4-L5 level. The MRI reveals what appears to be a lateral disc protrusion at L4-5, creating foraminal stenosis and a desiccated disc at the same level on the T2 weighted images, with normal-appearing discs above and below. The midline sagittal MRI also shows moderate central canal stenosis at the L4-L5 level. Flexion-extension lateral radiographs of the lumbar spine would have been helpful in evaluating the presence of translational instability of L4 on L5.

I offered the patient a pain management referral to a pain interventional anesthesiologist who would be more likely to offer this patient a trial session of outpatient management, as opposed to an immediate combined L4-L5 decompression and fusion. In the interim, she agreed to conservative chiropractic management for her unilateral symptoms. Chondroprotective nutrients were recommended: glycosaminoglycans or mucopolysaccharides support, including magnesium citrate, chondroitin sulfate and glucosamine sulfate. After six sessions of chiropractic and physiotherapy care, and limited crisis prescription management with the outpatient pain center, this patient began requesting a home exercise program because her limb pain had abated.

If nonoperative treatment has not helped this patient, she probably had a poor likelihood of improvement with surgical intervention due to her age and general health status. If decompression alone is performed in adults with isthmic spondylolisthesis, even at a level with significant disc degeneration, further translation can occur, producing recurrent radicular symptoms and new axial complaints. This is especially true at the L4-L5 level, where progression even without surgery has not uncommonly been seen in adults.

Spinal manipulation offers rapid symptomatic relief to many patients with associated spondylolisthesis. Specific adjusting should be directed at the dysfunctional joints above and/or below the defect to reduce the pain and disability in chronic low back patients with spondylolisthesis. There is no evidence that a translation can be reduced by an adjustment.

Even if possible (Cassidy et al.), the normal loading elements of the vertebral motion segment would not be able to maintain the reduction. One year after her initial chiropractic consultation, the patient is back to all of her normal activities and is asymptomatic with regard to back or leg pain.

Happy New Year, chiropractic!

### *References*

1. Jorgenson SS, Lowe TG. A prospective analysis of autograft versus allograft in posterolateral lumbar fusion in the same patient. *Spine* Sept 15, 1994;19(18):2048-2053.
2. Gatterman MI. *Disorders of the Lumbar Spine. Chiropractic Management of Spine-Related Disorders*. Baltimore: Williams & Wilkins, 1990, pp. 8,156-157.
3. Osterman K, Lindholm TS. Late results of removal of the posterior element in the treatment of lytic spondylolisthesis. *Clin Ortho* 1976;117:121-128.

4. Cassidy JD, McGregor M, Kirkaldy-Willis WH. A comparison of the effectiveness of special manipulative therapy for low back pain patients with or without spondylolisthesis. *JMPT* 1987;2:49-55.

5. Werbach MR. *Nutritional Influences on Illness*. New Canaan, CT: Keats Publishing Co., 1988.

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