

20-Year-Old Patient Presents with Marked Motor Weakness, Referred for Surgery

A 20-year-old, white, single female was seen for the chief complaints of low back pain, but predominantly right anterior and posterior right leg pain. History shows that this pain had started approximately 5 years previously while she was in High School. She saw her medical doctor who had an MRI done in March 2005. He then referred her to a physiatrist who told her she had spinal stenosis. She had an epidural steroid injection, was sent for physical therapy and exercises, which she thinks, helped her some.

She has recently seen another physiatrist who immediately referred her to a neurosurgeon who suggested that she have spinal surgery to relieve her MRI proven spinal stenosis.

Examination reveals that this patient cannot walk on both heels nor on the left toes. The deep tendon reflexes are 0 at the patella and +2 at the ankle. Ranges of motion are 35 degrees flexion and zero extension due to pain in the low back, which radiates into the lower extremity. Flexion is accompanied by a marked right list of the thoraco lumbar spine. Hypesthesia of the left leg is noted on pinwheel examination. Marked pain at lumbar levels L2 through L5-S1 bilaterally. The straight leg raise is positive for low back and leg pain at 20 degrees. Motor examination reveals grade 3 of 5 extension power of the great toes, grade 2 of 5 gluteus maximus strength on the left, grade 3 of 5 left biceps femoris strength, grade 4 of 5 quadriceps strength on the left, and grade 4 of 5 strength bilaterally on dorsi and plantar flexion of the great toe and foot at the ankle.

The following MRI's with legends for description show the L3-L4 and L5-S1 herniated nucleus pulposus superimposed upon pedicogenic stenosis at the L2 through L5 spinal levels. You will note the marked spinal stenosis due to under developed pedicles which probably increases the compression effect of the L3 and L5 disc herniations. This is a case showing marked motor weakness and multilevel spinal stenosis.

This patient was referred, based upon the progressive neurological deficits, for decompressive surgery.

Respectfully submitted,
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Figure 1: Here is the L3-4 axial image showing bilateral foraminal stenosis due to underdeveloped pedicles. Note the stenotic vertebral canal housing the cauda equina.



Figure 2: Here is the L4-5 axial image. As in Figure 1, the congenitally short pedicles create vertebral canal and foraminal stenosis. Note the small area for the cauda equina and the broad based L4-5 disc bulge that markedly narrows the sagittal diameter of the vertebral canal. The lateral recesses and osseoligamentous canals are markedly narrowed and stenotic, creating nerve root and dorsal root ganglion compression.

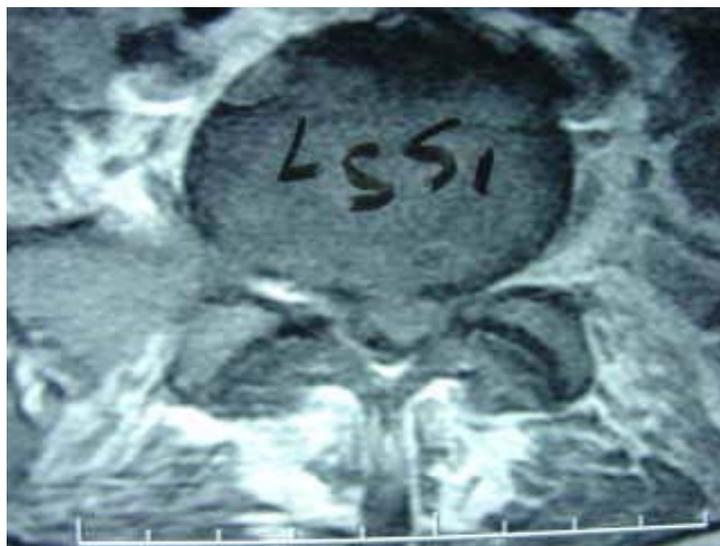


Figure 3: Here is the L5-S1 axial disc view showing the left paracentral free fragment of disc material that displaces the thecal sac. Again there is shortening of the sagittal length of the pedicles creating sagittal stenosis of the vertebral canal which increases the stenotic effect of the disc fragment.



Figure 4: This sagittal MRI shows the L3-4 and L5-S1 disc herniations that contact the thecal sac to create stenosis and cauda equina compression. Note carefully the indentation of the cauda equina by these disc herniations and fragments.



Figure 5: Here is the L2-3 disc level showing a central disc protrusion that contacts and displaces the thecal sac posteriorly. A high intensity zone is present in the central posterior disc space.