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CASE

The patient is a left-handed, 65-year-old Hispanic man, who was referred for consultation by his occupational health clinic after a slip and fall at work. He was complaining of persistent low back and bilateral leg pain. The pain radiated from the low back into the left buttock and down the posterior aspect of the left thigh and calf into the left foot. Two weeks after the accident, he developed similar pain in his right leg. He also reported numbness in the entire aspects of both legs and both arms. He felt his left leg to be weaker than his right leg. The pain was exacerbated with walking and bending and relieved by rest.

Physical examination The patient's gait was spastic and impaired without his walker. He had diminished range of motion in both his cervical and lumbar spine in all planes. He was unable to toe, heel, or tandem walk. Strength in the upper and lower extremities was diminished in all muscle groups. Sensation was diminished in response to pinprick in the arms, torso, and neck, but it was preserved in the lower extremities. Vibratory sensation was preserved. Reflexes in the upper and lower extremities were increased bilaterally. Findings were positive bilaterally for both straight leg testing and Hoffmann's sign.

Imaging The patient brought to the visit an MRI scan of his lumbar spine, which showed degenerative changes throughout with severe spinal stenosis at the L4 to L5 level. A grade I spondylolisthesis was also present at this level. MRI of the cervical spine was ordered, and it revealed a broad-based posterior vertebral osteophyte and posterior element hypertrophy causing compression on the spinal cord. In addition, there was increased signal in the spinal cord at this level consistent with myelomalacia.

WHAT IS YOUR DIAGNOSIS?

- Herniated cervical disk
- Multiple sclerosis
- Peripheral neuropathy
- Cervical myelopathy

DISCUSSION

The patient has cervical myelopathy from his cervical spondylosis and resultant stenosis. His spastic gait, muscle weakness, and positive Hoffmann's signs all are classic findings of myelopathy. A herniated cervical disk generally manifests with symptoms in only one extremity and spares the torso. Multiple sclerosis is unlikely because of the patient's age and history,

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and the cervical MRI did not show any demyelinating plaques other than at the level of the severe cervical stenosis. The patient's spastic gait is not caused by peripheral neuropathy, which eliminates this as a possible diagnosis. He did have some symptoms that are referable to neurogenic claudication from the severe lumbar stenosis at the L4 to L5 level.

Treatment Because the cervical MRI demonstrated spinal cord compression, the only treatment that can halt the progression of symptoms, and possibly alleviate those symptoms, is surgical decompression. Physical therapy could worsen the damage to the spinal cord seen as myelomalacia on the MRI. Epidural corticosteroid injections would also be inappropriate in this setting because of the reduced space in the spinal canal from the compression; such injections could worsen the compression and produce neurologic deterioration.

The patient underwent a cervical laminectomy after which he did very well. His pain level, walking, and sensation all improved dramatically in the first few weeks. He was placed in a postoperative physical therapy program for several months, and his strength gradually returned to normal. After a few months, he still had neurogenic claudication from the lumbar stenosis. He elected to undergo surgery and had a lumbar laminectomy with in-situ fusion at the L4 to L5 level. Following the second surgery, he improved and was able to walk for 6 to 8 blocks without pain, but he still had a spastic gait and some hand clumsiness. He decided to retire from his job as a general laborer. Films taken 9 months after the first surgery showed that the lumbar fusion had healed.

Comment Cervical myelopathy is a common condition that primarily affects people older than 55 years.¹ Many patients downplay symptoms or attribute them to other causes. Furthermore, because myelopathy results from compression of the spinal cord, not spinal nerve roots, it is typically less painful. The onset of symptoms is usually slow in the absence of a sudden event, such as the trauma that this patient sustained.

It is important to diagnose and treat cervical myelopathy as early as possible because the postoperative prognosis is closely associated with the duration of symptoms. Diagnosis is usually based on a careful neurologic examination and review of imaging studies. If untreated, the condition will gradually progress over a period of years until the patient is functionally unable to walk or use his or her hands because of increasing clumsiness. At that stage, even with surgical treatment, patients do less well following decompression. In general, with this condition, patients often do not make a complete recovery from their symptoms. Surgery is designed to halt the progression of the condition rather than "cure" patients of the disease. In this case, the patient made an excellent recovery, given the severity of his symptoms at presentation. □

REFERENCE

1. Greenberg MS. *Handbook of Neurosurgery*. 5th ed. New York, NY: Thieme Medical Publishers; 2001.