Case Report

Spontaneous Regression of an Extruded Lumbar Disc Herniation: A Case Report

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Abstract

A case of spontaneous regression of an extruded lumbar disc herniation at the L5-S1 level is presented. The regression of the disc herniation was documented on MRI studies. We discuss the possible underlying mechanisms of this process.

Keywords: Lumbar disc herniation, Spontaneous regression, Magnetic resonance imaging

INTRODUCTION

Spontaneous resolution of lumbar disc herniation was first documented by Teplick and Haksin in 1985(16). Since then, there have been some reports on spontaneous regression of lumbar disc herniation ascertained by magnetic resonance imaging (MRI) or computed tomography (CT)(8,12,17,13).

Some theories regarding the regression mechanism have been proposed; however, controversy remains. We discuss the possible underlying mechanisms of this process.

CASE PRESENTATION

A 25-year-old female presented to the Neurosurgery Department in June 2005 with a one-month history of low back and right leg pain. Neurological examination was normal, but straight-leg raising test was positive right. The patient was able to ambulate normally but required over-the-counter analgesics for pain control.

MRI of the lumbosacral spine obtained three months after her symptoms began indicated an extruded disc hernia at the right L5-S1 level compressing the spinal nerve and the dural sac (Figure 1).

Although several conservative treatment measures were used, the patient’s symptoms did not improve. Surgical intervention was offered in order to relieve the patient’s pain, but she refused the surgery and chose instead to proceed with physical therapy as long as no neurological deficit developed. Over the next eight months the patient’s symptoms improved significantly and she did not require any mediation.

A second lumbosacral MRI study was obtained eight months following the patient’s first neurological examination. It revealed complete regression of the extruded disc hernia at the L5-S1 level, which in the first MRI study had been observed to compress the spinal nerve and dural sac (Figure 2).
DISCUSSION

Regression of herniated discs has been described at different levels and with various clinical presentations, such as myelopathy, lumbar radiculopathy, and cervical discogenic radiculopathy. The level, type, and extent of disc herniation are easily ascertained by MRI scanning.

The literature contains several reports of gradual regression of herniated intervertebral discs without surgical intervention. Although the exact mechanisms causing the regression of the herniated disc are not known, three possible explanations exist, each of which may play a role. The first mechanism involves dehydration and shrinkage of the herniated nucleus pulposus, and its regression via tear in the annulus. According to the second mechanism, the herniated nucleus pulposus and annulus retract back into the intervertebral space in the flexed position of bed rest. This may occur if there is a protruded disc or bulge; however, it would be unlikely in the case of completely extruded or separated disc material. Other authors stress the importance of the exposure of the herniated material to the vascular environment of the epidural space and the
phagocytic cellular resorptive mechanism\(^\text{(6,7,14)}\). Histological studies of sequestrated and extruded disc hernias which show spontaneous regression have suggested the last theory\(^\text{(2,11,15)}\). Sequestrated hernias have been observed to regress faster than those in which the posterior longitudinal ligament remains intact. Sequestrated discs have been noted to generate more granulation tissue and a heavier chronic inflammatory cell infiltrate than other types of disc protrusion\(^\text{(1,8,9)}\). This condition correlates with faster rate of resorption\(^\text{(1,8,9,13)}\).

We think that inflammation-mediated resorption is the best explanation for the regression of the herniated disc in this case. However, it is possible that all three mechanisms may have been involved in the regression of the herniated disc tissue. Medical management may be the choice for patients with clinical symptoms who do not develop neurological deficit. Regression of the herniated disc may be observed by MRI scans.

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