A neurosurgical approach to far-lateral disc herniation

Technical note

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A technique for exposing far-lateral intervertebral disc herniations without disrupting the facet is described. This technique is a simple modification of the standard neurosurgical approach.

KEY WORDS □ lumbar spine □ herniated nucleus pulposis □ intervertebral disc herniation □ operative approach

The existence of lumbar disc herniations lateral to the facet has long been known, but the consistent demonstration of these lesions has depended upon the development of computerized tomography scanning. These lesions can be removed through the usual laminectomy, but then it is often necessary to remove the inferior facet of the superior lamina, as well as the more medial portion of the superior facet of the inferior lamina. Although this is probably acceptable when performed on only one side, it nonetheless disrupts a normal articulation. Abdullah, et al., have advocated an extensive intraspinal approach which also saves the facet, and muscle-splitting approaches to these lesions have been described by others; however, these latter techniques are somewhat foreign to the neurosurgical mind. The following method is easier, a more natural outgrowth of the usual approach, and does not disrupt the facets.

Operative Technique

After infiltration with 1% Marcaine (bupivacaine), a skin incision is made and carried down to the lumbodorsal fascia. The lumbodorsal fascia is opened in a gentle arc away from the insertion upon the spinous processes (Fig. 1A). Then, with scissors and forceps, the muscles are cut away from the spinous processes and lamina and are retracted further laterally over the facet, but not beyond it (Fig. 1A and B). It is convenient to use the Gelpi retractors to maintain retraction. The

Fig. 1. Operative drawings. A: The curved incision is made in the fascia and the paraspinal musculature is retracted. B: Representation of the normal anatomy. C: An opening has been made in the ligamentum flavum, and a small hemilaminectomy is made in the lamina of L-3. D: Removal of the lateral and inferior portions of the superior facet of the inferior lamina. The dotted line shows how much was actually removed. In addition, the intertransversarius muscle is seen.
Approach to far-lateral disc herniation

The laminectomy can be enlarged (Fig. 2B) and both fragments removed through the extraforaminal route, combined with the usual intraspinal technique. At the end of the procedure, the foramen can be explored both inside and out to make sure that all disc fragments have been removed (Fig. 2C). Finally, a fat graft is placed in the extraforaminal and intraspinal defects (Fig. 2D).

Comment

This technique is easy to learn, requiring little modification from the traditional neurosurgical approach. The paraspinal musculature must be brought to the edge of the facet, although not beyond. Then, after identification of the proper space, the lateral and inferior portions of the superior facet of the inferior vertebral body can be removed. This exposes the intertransversarius muscle which, when removed, reveals the nerve root and herniated disc. If the operator is not confident that the disc has been entirely removed, an intraspinal approach can easily be made and the foramen probed both inside and out.

This simple technique has proved successful for approaching far-lateral discs without rupturing the articulation.

References


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