

EXTREME LATERAL DISC HERNIATIONS AND PARALATERAL DECOMPRESSION

Mahir GÜLŞEN*

Gülşen BAYTOK*

Serdar ÖZBARLAS*

Recent advances in imaging techniques have made possible to diagnose extreme lateral disc herniations more frequently. Herniated disc material causes to compression to root in the foramen. Majority of these herniations are seen at the L4-5 level, and characterized by sudden onset of severe leg pain. Back pain is usually minor. Straight leg raising is mildly positive, but femoral stretch test is highly positive. Conservative treatment usually fails in these patients. Surgical decompression is difficult by using classical hemilaminectomy. Because of herniated material is in the "hidden zone of Macnab"; it is necessary to perform complete facetectomy which is undesirable. The paralateral muscle splitting approach enables surgeons to remove disc herniation without entering the spinal canal. It saves pars interarticularis and the inferior facet. In this paper, we would like to present two typical cases of extreme lateral disc herniations treated by paralateral approach.

Key Words: Extreme lateral disc herniation, paralateral approach

Foraminal and extraforaminal disc herniations are called extreme lateral disc herniations, their incidence is reported between 1-11.7% (1-5). Since the site of the compression is outside the confines of the subarachnoid space, myelography is not helpful in these cases. Recent advances in imaging techniques have made it possible to diagnose extreme lateral lumbar disc herniations more frequently. CT and MRI provides accurate means of diagnosis in extreme lateral disc herniations and guides the surgical approach. Conservative treatment usually fails in these patients. Surgical decompression is difficult by using classical hemilaminectomy. Because the herniated material is in the "hidden zone of Macnab"; it is usually necessary to perform complete facetectomy which may cause spinal instability (Figure 1, 2) (5, 7). The paralateral muscle splitting approach enables surgeons to remove disc herniation without entering spinal canal. It saves pars interarticularis and the inferior facet (5, 7,8).

In this paper we would like to present two typical cases of extreme lateral disc herniations treated by paralateral approach.

CASE REPORTS

Case 1: A 44 year-old woman described a long history of low-back pain and acute left thigh and leg pain for 1 month. She had difficulty bearing weight because of pain. The patient failed to improve with conservative treatment and she had been referred our clinic. On examination an antalgic gait on the left was noted. She was found to have a positive straight leg raising test of 40 degrees. Femoral stretching was extremely painful. There was decreased sensibility on

Figure 1. Hidden Zone

Figure 2. Complete facetectomy may be required for decompression

* Department of Orthopaedics and Traumatology, Faculty of Medicine, University of Çukurova, Adana, Turkey.

the anteromedial aspect of left leg. Motor powers and deep tendon reflexes were found to be normal in left lower extremity. There was decreased sensibility on the anteromedial aspect of left leg. Motor powers and deep tendon reflexes were found to be normal in left lower extremity. A CT study showed an extreme lateral disc herniation at the L3-L4 level on the left side (Figure 3). A left paralateral approach was used for decompression and, extruded disc material was removed. At the six-month follow-up, he was complaining of slight numbness on the anteromedial aspect of right leg.

erating microscope should be used. We use magnifying loupe and over head lamp. The standard marking of the level is used. A 3.5-5cm incision is made from the spinous process of one level above to the spinous process of one level below, 1.5-2 cm from the midline. After splitting the paraspinal muscles, the transverse processes of the disease level are palpated and self retaining retractors are positioned. The lateral border of the pars marks the medial border of the pedicle, and removing of the intertransverse ligament immediately exposes the nerve root and the disc herniation. The herniated fragment is easily removed. Sometimes, it may be necessary to remove a portion of the superior articular process to gain into the disc space.

DISCUSSION

Extreme lateral lumbar disc herniation is a specific clinical entity. It is mostly seen at L4-5 level and L4 root is affected (1-5). Clinical presentation varies greatly, often with negative neurologic findings. Thigh and leg pain is usually greater than back pain. Straight leg raising is mildly restricted due to less nerve root excursion at L4-5 level, but femoral stretch test is highly positive. The herniated material compress the nerve root at the exit zone and, the clinical findings may falsely localize the level. Because of the low incidence of disc herniation above the L4-5 level, it is possible that a patient may have an extreme lateral disk herniation when the clinical findings suggest L4 or higher level root involvement.

The myelogram is usually non diagnostic due to compression site is outside the confines of the subarachnoid space. The diagnosis is made with the CT or MRI. CT/myelogram or CT/discogram can be used in the suspected cases (2-5).

Extreme lateral disc herniations are usually sequestered or extruded and conservative treatment generally fails in these patients (5, 7). Surgical treatment is difficult by using standard hemilaminectomy and the facet joint is easily lost when trying to remove the herniated material. The best approach to the extreme lateral disc herniations is paralateral muscle splitting approach to the extreme lateral disc herniations is paralateral muscle splitting approach without entering the spinal canal (5, 6, 8). It saves pars interarticularis and inferior facet.

Although patients with extreme lateral disc herniation experience dramatic pain relief following surgical treatment, often have mild causalgia postoperatively

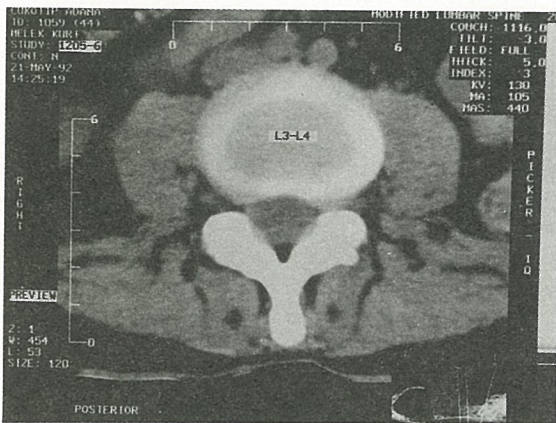
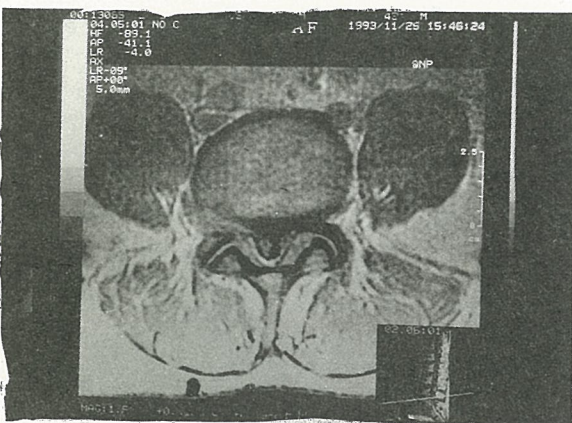


Figure 3. Case 1.



Surgical technique (5): The patient is the prone position (Figure 5). Magnifying loupe, preferably op-

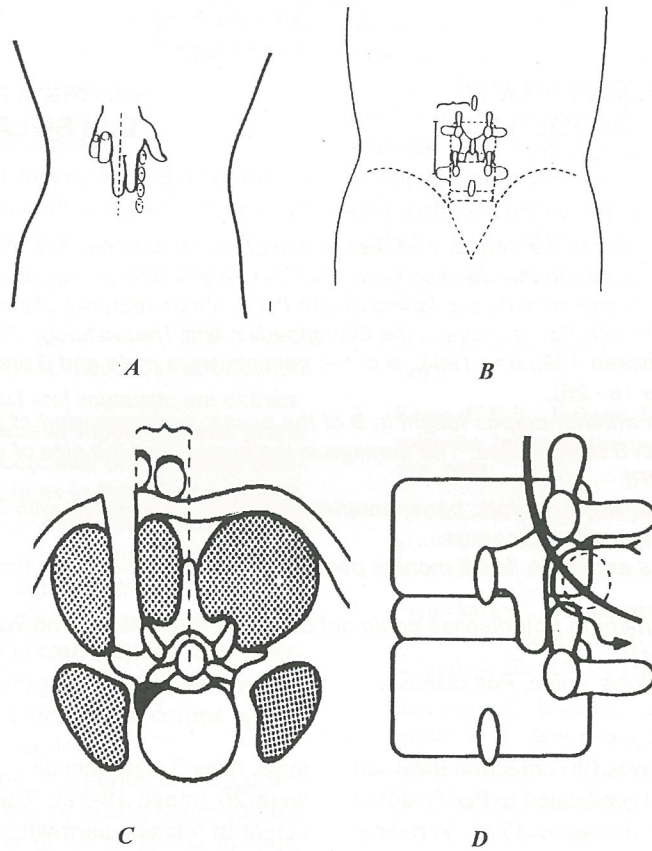


Figure 5. Paralateral approach

for several weeks. This symptoms may be related to direct compression of dorsal root ganglion by the herniation (7).

REFERENCES:

1. Abdullah AF, Ditto EW, Bryd EB, Williams R. Extreme-lateral lumbar disc herniations, clinical syndrome and special problems of diagnosis. *J Neurosurg* 1974; 41: 229-334.
2. Godersky JC, Erickson DL, Seljeskog EL. Extreme lateral disc herniation: Diagnosis by computed tomographic scanning. *Neurosurgery* 1984; 14: 549-552.
3. Jackson RP, Glah JJ. Foraminal and extraforaminal disc herniation: Diagnosis and treatment. *Spine* 1987; 12: 577-585.
4. Kornberg M. Extreme lateral lumbar disc herniations. Clinical syndrome and computed tomography recognition. *Spine* 1987, 12: 586-589.
5. Macnab I, Mc Culloch, J. *Backache*. 2nd ed. Baltimore: Williams & Wilkins, 1990, 335-362.
6. Ray CD. The paralateral approach to decompressions for lateral stenosis and far lateral lesions of the lumbar spine. In: Watkins RG, Collis JS, eds. *Lumbar discectomy and laminectomy*. Rockville: Aspen Publishers, 1987, 217-227.
7. Spencer DL. Lumbar intervertebral disc surgery. In: Bridwell KH, DeWald RL, eds. *The textbook of spinal surgery*. Philadelphia: JB Lippincott, 1991, 675-693.
8. Wiltse LL. The intervertebral foramina. In: Watkins RG, Collis JS, eds. *lumbar discectomy and laminectomy*. Rockville: Aspen Publishers, 1987, 203-216.