

## LATERAL RECESS STENOSİS; SUPERİOR FACET SYNDROME

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**Summary:** Ten patients with painful radiculopathy of whom operation demonstrated entrapped nerve roots in the lateral recess were presented. The diagnosis was made with iohexol myelography and surgical findings. Surgical excision of the superior facet of the inferior vertebra that compressed the nerve root made nearly complete relief in all of the patients except one.

**Key words:** Pain, lateral recess, superior facet, myelography.

The lateral recess is the area bordered posteriorly by the superior articular facet, laterally by the pedicle and anteriorly by the posterior surface of the vertebral body (1, 3, 5). The narrowest part of the recess is at the superior border of the pedicle. Tickening of the facet is more likely to compress the nerve root at the narrowest part (4). The similiar symptoms and signs just as were seen in disc herniation may result from compression of the nerve root in the lateral recess. So this must be taken in consideration.

Myelography with non-ionic contrast media gives valuable information related to nerve roots in the lateral recess. But more information about the depth of lateral recess and pathological process in that area can be taken by CT (Computerized tomography) (2, 5, 6).

### MATERIALS AND METHODS

Ten patients; six women and four men ages range from 34 to 65 were evaluated with special reference to clinical pattern, radiological appearance and surgical results (Table I). All the patients complained of intense pain beginning in the lumbar area and radiating to one or both legs. Six patients presented with pain in one leg and the others in both legs. Laseque's sign was positive in seven patients. Only one patient had moderate motor deficit and three patients had mild sensorial deficit.

All the patients had plain radiographs of the lumbar spine and were subjected to iohexol myelography by lumbar route. Myelographic appearance demonstrated root compression and amputation images in all of the patients (Fig .1, 2, 3).

### RESULTS

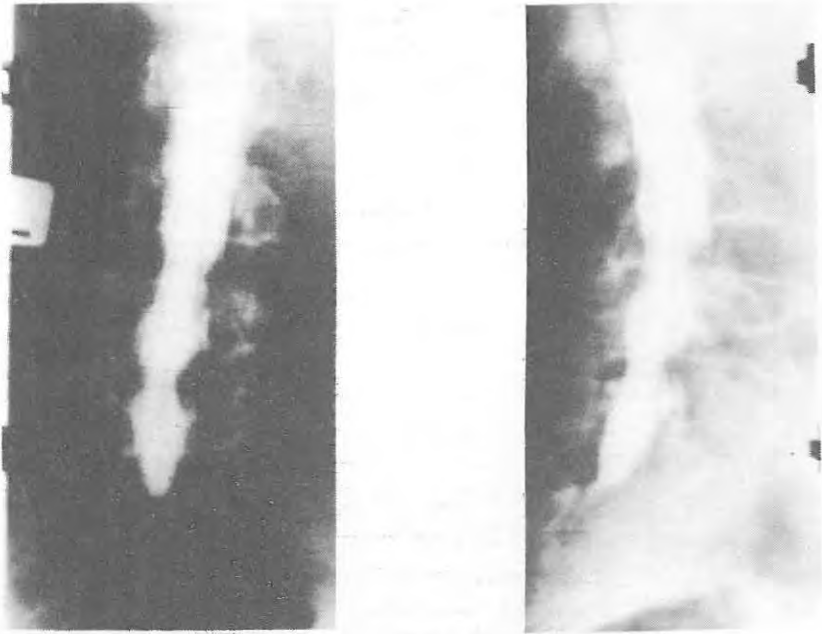
Surgery was performed on all of the patients revealing stenosis of lateral recess unilaterally in 7 and bilaterally in 3 cases. The operation consisted of complete laminectomy and partial facetectomy for bilateral lesions and only partial facetectomy for unilateral lesions. In the follow-up period the patients were evaluated under the following criteria;

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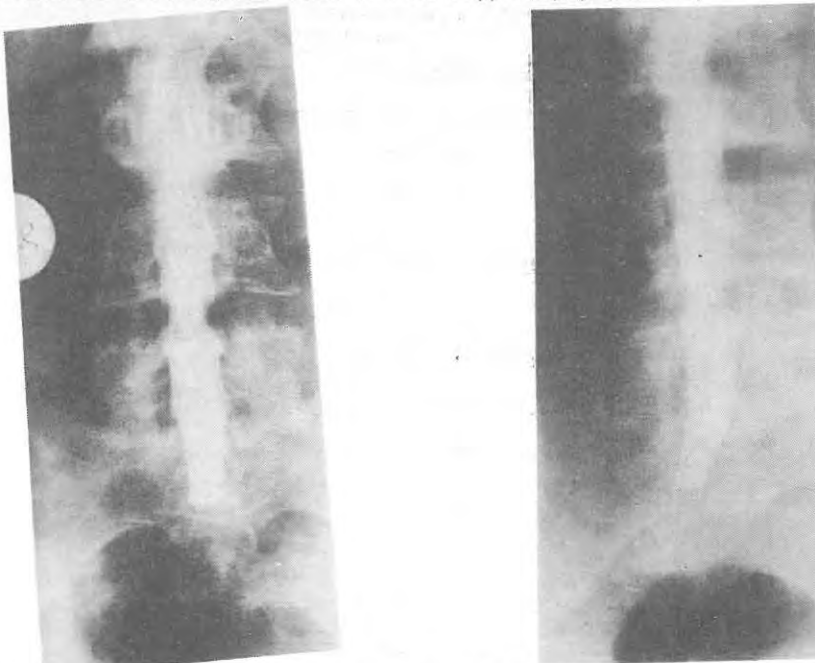
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Table I. Lateral Recess Stenosis

CASE NO	AGE YEAR	NEUROLOGICAL		MYELOGRAPHIC FINDINGS	OPERATION	RESULT	FOLLOW-UP
		DEFICIT					
1	34	--		Compression on left L4-5 Root	Left Partial Facetectomy at L4-5 Level	Excellent	3 Years
2	60	--		Amputation of both L3-4 and L4-5 roots bilaterally	Complete laminectomy at L4, partial laminectomy at L3 and L5 partial facetectomy at L3-4, L4-5 levels bilaterally	Excellent	3 Years
3	45	Mild sensorial deficit		Compression on left L4-5 root	Left partial facetectomy at L4-L5 level	Excellent	2 Years
4	45	--		Compression on both L5-S1 roots	Partial facetectomy at L5-S1 level bilaterally	Poor	2 Years
5	65	--		Amputation of right L4-5 root	Right partial facetectomy at L4-5 level	Excellent	2 Years
6	60	Mild sensorial deficit		Compression on L4, L5, S1 roots and dural sac	Left partial facetectomy at L3-4 and L4-5 level	Good	1 Year
7	38	--		Amputation of right L5-S1 root	Right partial facetectomy at L4-5 level	Excellent	1 Year
8	32	Moderate motor defisit, sensorial deficit		Compression on left L4-5	Left partial facetectomy at L4-5 level	Good	1 Year
9	60	--		Compression on L3-4, L4-5 L5-S1 roots bilaterally and dural sac compression at L5-S1 level	Complete laminectomy and partial facetectomy at at L3-4-5 levels	Good	1 Year
10	30	--		Amputation of right L5-S1 root	Right partial facetectomy at L5-S1 level	Excellent	5 Months



**Figur 1.** AP and right oblique myelographic view of the lumbar spine. Compression on L4, L5, S1 roots and dural sac due to right L3-4 and L4-5 facet hypertrophy. (Case 6.)



**Figur 2.** AP and left oblique myelographic appearance of the lumbar spine. L5 superior facet compression on the left L4-5 root. (Case 8).



**Figur 3.** Iohexol myelography. AP and lateral view demonstrates root amputation images bilaterally at L3-4, L4-5, L5-S1 levels and dural sac compression at L5-S1 level (Case 9).

**Excellent:** The patient is able to do work, no complaints or occasionally mild discomfort.

**Good:** The patients is able to do work, mild remaining back or leg pain.

**Fair:** The patient has to change work, partial pain relief. **Poor:** Unable to do work, worsening of the condition.

The patients were followed-up for 4 months to 3 years. The results of the surgery were excellent in 6 cases, good in 3 poor in 1 case. 6 cases regained previous activities without discomfort and 3 complained occasionally of mild back and leg pain.

## **DISCUSSION**

The pathological findings mostly seen in spinal stenosis are; shallowness of the lateral recess and a decrease in the dorso ventral diameter of the spinal canal (7). Both lateral

recess stenosis and foraminal stenosis are gathered under the heading of lateral spinal stenosis.

The most frequent cause of lateral spinal stenosis is the facet tropism that is hypertrophic arthrosis or inversion of the facet joint. Tropism results from abnormal external or static stress on the facet related to motion (4).

Despite so many reports described spinal stenosis in detail (8, 9, 10), up to Epstein's work including 15 cases related to painful radiculopathy due to lateral recess stenosis, this nerve root entrapment syndrome hasn't gained so much description as an isolated pathology.

Its clinical symptoms and signs are similar to the disc herniation. Pain is the most prominent finding first at lowback area, then it radiates to one or both legs. It is aggravated by

standing, walking and is relieved by rest. Coughing, sneezing and straining rarely aggravated pain. Neurological alterations are almost minimal. Although direct radiographs and myelography were reported as unremarkable in diagnosis (3), non-ionic contrast media demonstrates nerve root course in the lateral recess since root sleeve fills with the contrast media up to the point that leaves the intervertebral foramen (5). Myelographic appearance was accepted helpful in diagnosis in all of the patients.

Magnified CT examination (1, 2, 5, 6) and polytomography (4) reported remarkable in determining the depth of the lateral recess and was found under 4 mm in symptomatic patients (2, 10). The superior articular facet of the vertebra has two curves; the upper part in the vertical direction and inferior segment that forms the roof of the lateral recess lies in the horizontal plane. Thickening of this part causes stenosis and compression on the nerve root.

Decompression of the nerve root in the lateral recess requires hemilaminectomy and partial facetectomy including removal of the medial horizontally oriented portion of the superior facet (3).

The patients who were subjected to operation were in almost satisfactory condition except one the patient who had done poorly had a ten year history of lowback pain and sciatica in both legs. At operation in addition to superior facets compression, there was L5 instability that required fusion.

No instability was observed in any patients in the following period related with to operative procedure.

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