

## Extrude sequestrum spontaneous regression of lumbar disc hernia: case report

Hamza Karabag<sup>1\*</sup>, Mustafa Kilic<sup>1</sup>, Kadri Burak Ethemoglu<sup>1</sup>, Ahmet Celal Iplikcioglu<sup>1</sup>

### Abstract

The correct approach to the lumbar disc hernia is subject to debate. Although a rare case of lumbar disc herniation with spontaneous regression, to be seen and is a well-known phenomenon commonly reported. But the underlying mechanism has not been fully clarified. Proposed mechanisms are enzymatic degradation and phagocytosis, dehydration and the retraction of a herniated disc in the annulus fibrosus. Cauda equina syndrome, despite the progressive narcotic pain goes outside and progressive neurological deficits, conservative treatment should be given priority to patients. Think about the possibility that spontaneously regressed with medical treatment and follow-up of disc herniation, should not rush to surgery. In our case, the level of lumbar disc herniation was presented on spontaneously regressed patients. The patient's clinical condition is improved in accordance with the resolution of the disc herniation and this is confirmed by magnetic resonance imaging.

**Key words:** Disc herniation, Sequestration, Spontaneous Regression

### Introduction

Radicular ache was defined for the first time by Dandy due to extradural mass in 1929 (1). Mixter and Barr defined the way that extrude disc causes sciatica pain and the surgical approach to the problem in 1934 (2). Teplick and Haksin published the first paper by using spontaneous regression in lumbar disc hernia, using MRI. With the proliferation of MRI in clinic use and its increased accessibility, the spontaneous regression in lumbar disc hernia has been increasingly reported (3). The most important factor that affects the result and the success of disc surgery is the selection of the patient (4).

The minimal invasive methods that are developed in recent years are increasing the number of patients who have surgical operation. Therefore, the selection of the patient to go under surgery is very important. In this essay, a patient with radiculopathy whose symptoms were fully refined with the resolution of extrude-sequestrum disc part which caused radicular pain with a level of L4-5.

### Case

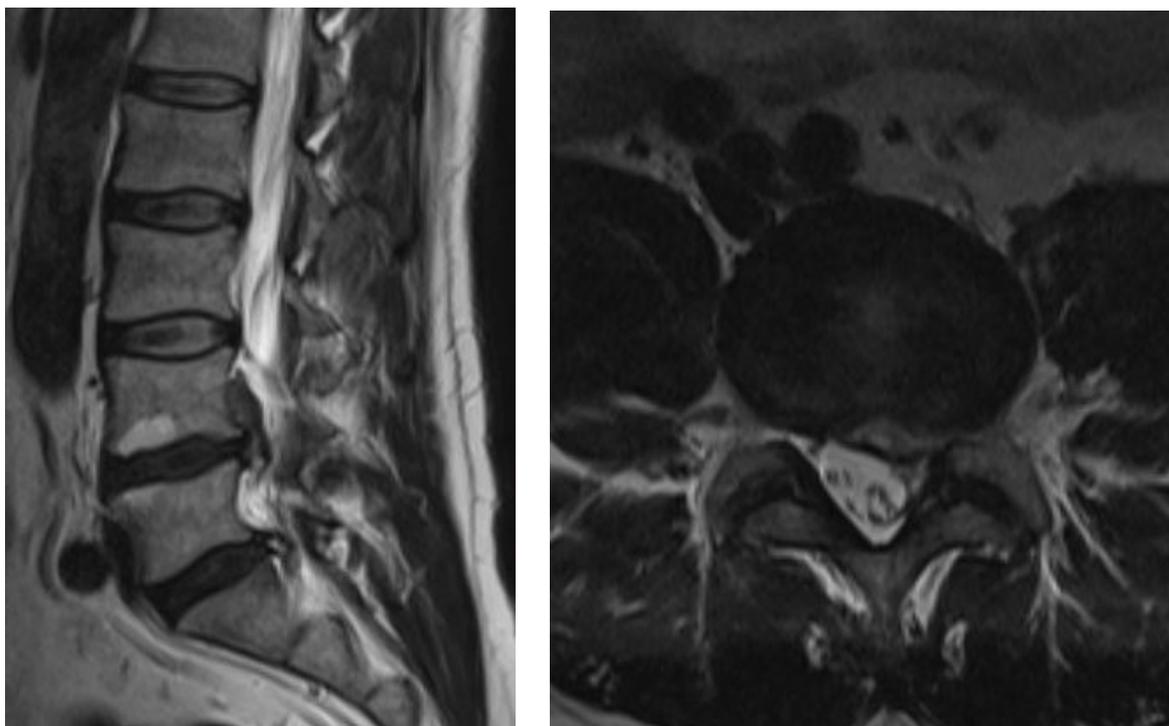
Forty nine years old male patient, has applied to our polyclinic in June, 2013, with a complain of a left leg pain, a pricking and tingle starting from his left calf and going down to his ankles, in the inspection,

There was 25 degrees positive laseque on the left leg, no motor deficit, L4-5 left dermatomal hypoesthesia and left achilles hypoactive reflex was found.

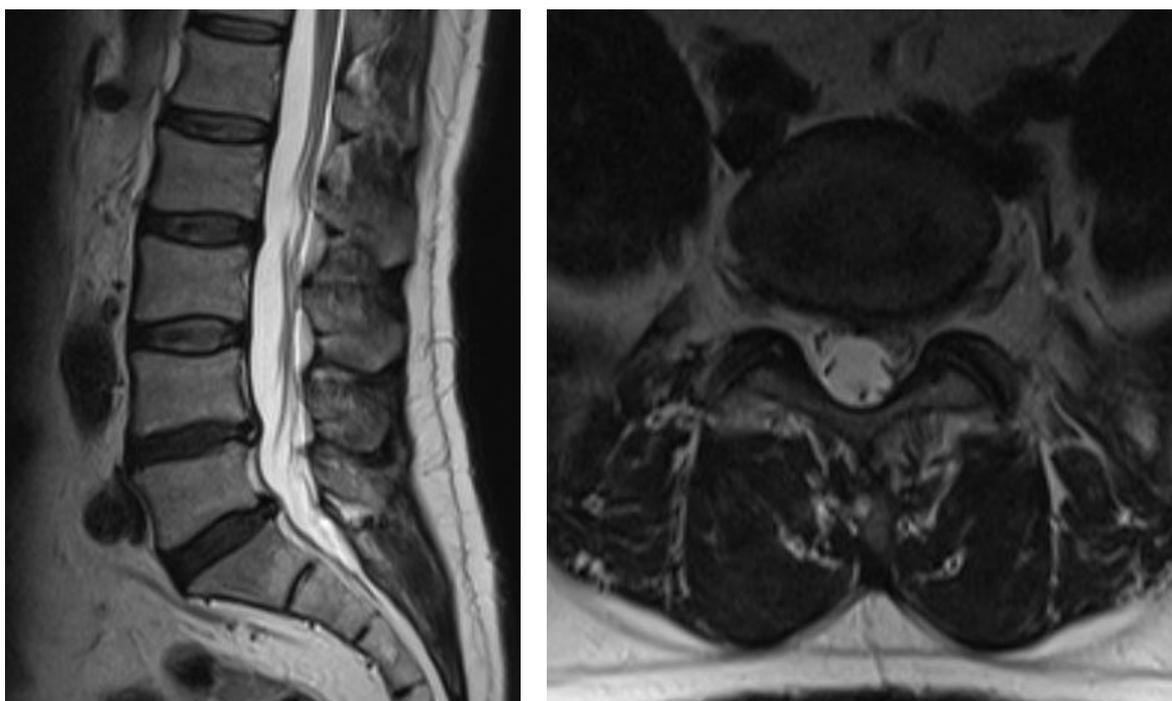
In the lumbar MRI inspection, in both sagittal sections (pic-1a) and axial sections (pic-1b) left L4-L5 sequestrum disc hernia was detected. With the present symptoms, the patient was recommended to have an operation.

However, the patient did not accept having an operation. As a medical treatment, methylprednisolone acetate 40 milligrams; intramuscular three days intermittently 3 units in total, asetacin 90 grams capsule; 1 in a day, chlorzoxazone 250 milligrams + a tablet which includes 300 milligrams of paracetamol ; 3 in every day started.

In the follow-ups, the pain complaints and radicular symptoms were mended but hypoesthesia continued. In terms of hypoesthesia, the patient was given 150 milligrams of pregabalin capsule, two times in a day. Spontaneous regression on the sagittal (pic-1a) and axial (pic-1b) left L4-L5 sequestrum disc hernia were observed in the lumber MRI inspection of the patient in March, 2014,



**Figure 1.** A) Disc in T2 weighted sagittal in MRI inspection, L5 level sequestrum herni is seen. B) Sequestrum in T2 weighted axial MRI inspection, left L4-L5 L4 herni is seen.



**Figure 2.** A) In the T2 weighted control MRI inspection, in sagittal section, L4-L5 level sequestrum disc fragment spontaneously regressed. B) In the T2 weighted control MRI inspection in axial section, L4-L5 level sequestrum disc fragment spontaneously regressed

### Discussion

Many essays were published about the spontaneous regression of lumbar disc hernia (5).

In the prospective MRI analysis they carried on, Bozzao et.al. showed that in %63 of the cases, the disc protrusion regressed more than %70 (6).

In their prospective studies carried on 21 cases, Ocak et.al., stated that after 1.5 months, a regression was seen in 4 cases (%16) but this was not statically meaningful (7). Takada et.al. reported that in their prospective studies carried on over 42 cases, there was regression in 8 cases after 3 months (8). Matsubara et. al. reported that the hernia size shrunk over %20 (9).

The mechanisms that affect the disc regression are not surely known. Three possible mechanisms are asserted (10). First one is the dehydration theory. It is the regression of disc hernia due to gradual dehydration and shrinking (11). The second is inflammatory reaction and neovascularization. The disc hernia is conceived as a foreign body in spinal epidural area and inflammatory reaction activates by the autoimmune system (12,13,14). The third one is retraction theory, it is the re retraction of the disc hernia to a distance of intervertebral (3). Henmi and et.al. have shown that in disc hernias, the ones with bigger sizes shrink more than the ones with smaller sizes. As the reason for this, they reported that especially in cases younger than 40 years old, the big disc hernias contain more water (14).

The patient presented in this case is an example for the total resolution of the sequestrum disc hernia by medical treatment without surgical operation. In this case, the disc regression may have resorption due to inflammatory or dehydration. The initial treatment of lumbar disc hernias is the conservative treatment. It includes exercise, analgesic use and psychotherapy (15). The lumbar disc hernias are treated conservatively apart from the cases where there is cauda equine syndrome or progressive motor loss. The surgical treatment, on the other hand, should be considered in the cases if the patient does not response to conservative treatment and/or there is persistent waist and leg pain, or in the case of a cauda equine syndrome development, or starting of neurological deficits (16).

### Conclusion

The spontaneous resolution of disc hernias should be considered and patients who would be taken to surgery should be selected properly. Especially in younger patients, apart from the situations that require urgent surgery, in the beginning treatment of lumbar disc hernia, conservative methods should be applied for 6 weeks. Except indications of urgent surgery, there is no need to rush for surgical treatment.

**Conflict of Interest:** The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

### References

1. Dandy WE. Loose cartilage from intervertebral disk simulating tumor of the spinal cord. By Walter E. Dandy, 1929. *Clin Orthop Relat Res* 1989;(238):4-8.
2. Mixter WJ, Barr JS. Rupture of the intervertebral disc with involvement of the spinal cord. *New Engl J Med* 1934;211:210-5.
3. Teplick JG, Haskin ME: Spontaneous Regression of herniated nucleous pulposus. *AJR* 145:371-375,1985
4. Finneson BE, Shmidek HH; Lumbar disc excision, Schimidek&Sweet, Operative neurosurgical techniques, Cilt 2, 4th ed. Philadelphia: WB Saunders; 2000. p.2219-31.
5. Sung-Joo Ryu, In Soo Kim. Spontaneous Regression of a Large Lumbar Disc Extrusion. *J Korean Neurosurg Soc* 2010;48(3):285-7.
6. Bozzao A, Gallucci M, Masciocchi C, Aprile I, Barile A, Passariello R. Lumbar disk herniation: MR imaging assessment of natural history in patients treated without surgery. *Radiology* 1992;185(1):135-41.
7. Ocak FDM, Karaaslan M, Tutar İ, Konuralp N, Güzelant AY, Özgüzel H: Lomber disk hernilerinde konservatif tedavi etkinliğinin klinik parametreler ve manyetik rezonans görüntüleme yöntemiyle değerlendirilmesi. *Türk Fiz Tıp Rehab Derg* 53: 108-112,2007
8. Takada E, Takahashi M, Shimada K: Natural history of lumbar disc hernia with radicular leg pain: Spontaneous MRI changes of the herniated mass and correlation with clinical outcome. *Journal of Orthopaedic Surgery* 9: 1-7,2001
9. Matsubara Y, Kato F, Mimatsu K, Kajino G, Nakamura S, Nitta H. Serial changes on MRI in lumbar disc herniations treated conservatively. *Neuroradiology* 1995;37(5):378-83
10. Slavin KV, Raja A, Thornton J, Wagner FC Jr. Spontaneous regression of a large lumbar disc herniation: report of an illustrative case. *Surg Neurol* 2001;56(5):333-6; discussion 337.
11. Saal JA. Natural history and nonoperative treatment of lumbar disc herniation. *Spine (Phila Pa 1976)*. 1996;15;21(24 Suppl):2S-9S.
12. Komori H, Shinomiya K, Nakai O, Yamaura I, Takeda S, Furuya K. The natural history of herniated nucleus pulposus with radiculopathy. *Spine (Phila Pa 1976)* 1996;15;21(2):225-9.
13. Haro H, Shinomiya K, Murakami S, Spengler DM. Up-regulated expression of matrixin and neutrophil collagenase in human herniated discs. *J Spinal Disord* 1999;12(3):245-9.
14. Henmi T, Sairyo K, Nakano S, Kanematsu Y, Kajikawa T, Katoh S, et al. Natural history of extruded lumbar intervertebral disc herniation. *J Med Invest* 2002;49(1-2):40-3