

Spontaneous regression of a herniated cervical disc

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Since its first description by Key in 1945, spontaneous regression of herniated disc material was described by other authors at different levels of the spine, especially in the lumbar slab.¹⁻³ However, very few cases of spontaneous resolution of cervical disc herniation have been reported in the literature.^{4,7} Most cases are confined to disc herniation associated with radiculopathy.⁵ We report a particular case of spontaneous resorption of symptomatic cervical disc herniation without surgical treatment.

CASE

Our patient was a 48-year-old sportsman, operated on in 1988 for a thyroid nodule, who presented at our institution for a sudden severe pain on the left C6 level. He described acute cervical pain and paresthesia in his left upper limb. There was no history of trauma. His neurological examination revealed no motor or senso-

ry deficits. All reflexes were brisk and symmetric. The basic x-rays of the cervical spine showed no particular signs. Whereas MRI showed a large disc herniation at the C5-C6 level, that was eccentric to the left side and which encroached the subarachnoid space and the left C6 root. The other intervertebral spaces were normal (Figure 1). We recommended that the patient undergo an anterior discectomy. However, the patient refused the operation because of his history of thyroid surgery. He then received analgesics, non-steroidal anti-inflammatory drugs and a muscle relaxant during four weeks with immobilization by cervical collar. In the meantime, he reported spectacular improvement of his symptoms. Three months later, the follow-up MRI showed a complete regression of the extruded disc (Figure 2).

DISCUSSION

The spontaneous resolution of herniated lumbar discs

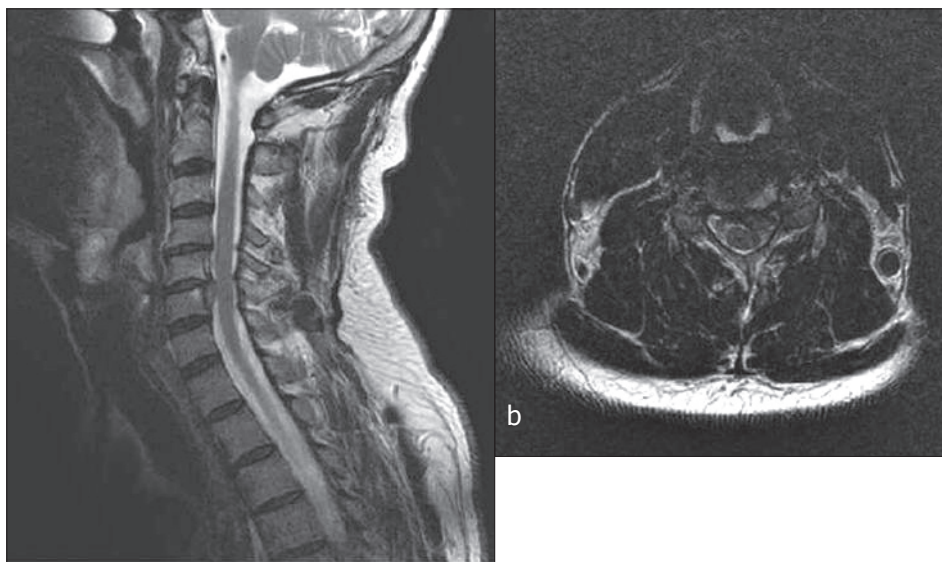


Figure 1. Magnetic resonance images in sagittal (a) and axial (b) T2-weighted views revealing large C5-C6 disc extrusion, through a disruption of the anulus fibrosus, eccentric to the left side and compressing the anterior aspect of the spinal cord.



Figure 2. Follow-up MRI in sagittal (a) and axial (b) T2-weighted images showing that the herniated disc completely vanished.

is a well-established phenomenon.^{3,8-11} Thus, the disappearance of disc compression has been reported occasionally in the cervical spine^{7,12} and rarely in the thoracic region.¹³ Most cases of disappearing herniation of the cervical disc reported in the literature were diagnosed using computed tomography. Only 40 or so cases were followed using MRI.^{4-6,10,13-15}

Cervical disc herniation typically manifests with radiculopathy caused by compression of the cervical root and/or myelopathy due to spinal cord compression. Radiographic studies would allow the final diagnosis, and show evidences of the magnitude and level of the herniation. In neurosurgical practice, most surgeons that have documented cervical disc extrusion using MRI, support surgical treatment of patients with intractable radiculopathy and/or cervical myelopathy. The operation for cervical disc disease is a relatively safe procedure and surgical management might have resulted in more rapid and complete improvement of symptoms.⁵ Nevertheless, the potential tendency of regression of the disc herniation has suggested that many cervical discs could be successfully managed without any surgical care.^{7,12,16,17} Maigne et al¹⁷ reported a decreasing size or disappearing herniated cervical soft-disc in 20 of 21 patients with cervical radiculopathy followed by computed tomography. In agreement with the reported approach, our case demonstrated extrusion of the nucleus pulposus through a disruption of the anulus fibrosus and posterior longitudinal ligament (Figure 1b). Furthermore, this regression tendency is based on the anatomic position of the extruded disc material.^{4,14} Since cervical disc herniation was classified as migration-type on sagittal view and lateral-type on axial view, it exhibited frequently a regression, and our case corroborates this condition. Moreover, Matsumoto et al showed in a recent retrospective study of conservatively treated patients with cervical myelopathy caused by cervical soft disc herniation¹⁴ that the type and level of herniation on MRI have prognostic value. They concluded that patients with median-type herniations on axial images and those with herniations at more rostral intervertebral levels obtained favorable outcomes after conservative treatment.

Herniated disc regression detected on MR images might show expanded dehydration of the pulposus nucleus and resorption of hematoma, which subsequently occur after anulus rupture.¹⁷ In an experimental study performed on rabbits, Minamide et al¹⁸ demonstrated that the proteoglycan chains of the herniated fragments undergo autolysis with loss of their hydrophilic capacity. Some reports have studied the mechanism and factors affecting such regression. It has been suggested that

once herniated disc material is exposed to the vascular environment of the epidural space, the herniated fragment is then treated as a foreign body undergoing inflammatory reaction, neovascularization and phagocytosis, yielding a decreasing size of this fragment.⁶

To hope for a spontaneous resorption of symptom-

atic cervical disc herniation, opting for a non-surgical treatment is a very courageous choice. It which should be established on good symptomatic analysis of MRI findings. This kind of decision should be case-based taking into account the high potential risk of neurological deterioration.

REFERENCES

1. Komori H, Okawwa A, Haro H, et al; Contrast-enhanced magnetic resonance imaging in conservative management of lumbar disc herniation. *Spine* 23: 67-73, 1998.
2. Komori H, Shinomiya K, Nakai O, et al; The natural history of herniated nucleus pulposus with radiculopathy. *Spine* 21: 225-229, 1996.
3. Teplick Jg, Haskin ME; Spontaneous regression of herniated nucleus pulposus. *AJR* 145: 371-375, 1985.
4. Mochida K, Komori H, Okawa A, et al; Regression of cervical disc herniation observed on magnetic resonance images. *Spine* 1998; 23: 990-7.
5. Song JH, Park HK, Shin KM; Spontaneous regression of a herniated cervical disc in a patient with myelopathy. Case report. *J Neurosurg (spine 1)*: 90; 138-140, 1999.
6. Vinas FC, Wilner H, Rengachary S; The spontaneous resorption of herniated cervical discs. *Journal of Clinical Neuroscience* 2001.
7. Westmark RM, Westmark KD, Sonntag VK; Disappearing cervical disc. Case report. *Journal of neurosurgery* 86 (2): 289-290, 1997.
8. Didry C, Lopez P, Baixas P, et al; Hernies discales lombaires non opérées. Evolution clinique et tomodensitométrie. *Presse Med* 20 : 299-302, 1991.
9. Hernandez Conesa S; Tratamiento actual y recuperación espontanea de la hernia discal. *Anal Real Acad Nacion Med* 108: 227-244, 1991.
10. Lapuyade G, Loustau JM; Régression spontanée des hernies discales. A propos de 7 observations. *J Radiol* 70 : 697-702, 1989.
11. Sei A, Nakamura T, Fukuyama S, et al; Régression spontanée des hernies du nucleus pulposus au niveau lombaire. 4 cas suivis par IRM répétées. *Rev Chir Orthop Reparatrice Appar Mot* 80 : 144-149, 1994.
12. Saal JS, Saal JA, Yurth EF; Non operative management of herniated cervical intervertebral disc with radiculopathy. *Spine* 21: 1877-1883, 1996.
13. Coevoet V, Benoubida F, Lignieres C, et al; Spontaneous and complete regression in MRI of thoracic disc herniation. *J Radiol* 78: 149-151, 1997.
14. Matsumoto M, Chiba K, Ishikawa M, Maruiwa H, Fujimura Y, Toyama Y; Relationships between outcomes of conservative treatment and magnetic resonance imaging findings in patients with mild cervical myelopathy caused by soft disc herniations. *Spine* 2001; 26 (14): 1592-8.
15. Reddy PK, Sathyanarayana S, Nanda A; MRI-documented spontaneous regression of cervical disc herniation: a case report and review of the literature. *J La State Med Soc.* 2003; 155 (2): 97-8.
16. Bush K, Chaudhuri R, Hillier S, Penny J; The pathomorphologic changes that accompany the resolution of cervical radiculopathy. *Spine* 1997; 22: 183-7.
17. Maigne JY, Deligne L; Computed tomographic follow-up study of 21 cases of non-operatively treated cervical intervertebral soft disc herniation. *Spine* 1994; 19: 189-91.
18. Minamide A, Tamaki T, Hashizume H, Yoshida M, Kawakami M, Hayashi N; Effects of steroid and lipopolysaccharide on spontaneous resorption of herniated intervertebral discs. An experimental study in the rabbit. *Spine* 1998; 23 (8): 870-876.