



Paper Accepted*

ISSN Online 2406-0895

Case Report / Приказ случаја

Danilo Radulović^{1,2,†}, Ljiljana Vujotić^{1,2}, Irena Cvrkota^{1,2},
Vojislav Bogosavljević^{1,2}, Igor Jovanović^{1,2}

**Spontaneous regression of cervical disc herniation in a patient with
myelopathy**

Спонтана регресија цервикалне дискус херније код болесника са
мијелопатијом

¹ Faculty of medicine, University of Belgrade, Belgrade, Serbia;

² Clinic for neurosurgery, Clinical center of Serbia, Belgrade, Serbia

Received: May 4, 2017

Accepted: March 6, 2018

Online First: March 13, 2018

DOI: <https://doi.org/10.2298/SARH170504023R>

* **Accepted papers** are articles in press that have gone through due peer review process and have been accepted for publication by the Editorial Board of the *Serbian Archives of Medicine*. They have not yet been copy edited and/or formatted in the publication house style, and the text may be changed before the final publication.

Although accepted papers do not yet have all the accompanying bibliographic details available, they can already be cited using the year of online publication and the DOI, as follows: the author's last name and initial of the first name, article title, journal title, online first publication month and year, and the DOI; e.g.: Petrović P, Jovanović J. The title of the article. *Srp Arh Celok Lek*. Online First, February 2017.

When the final article is assigned to volumes/issues of the journal, the Article in Press version will be removed and the final version will appear in the associated published volumes/issues of the journal. The date the article was made available online first will be carried over.

† **Correspondence to:**

Danilo RADULOVIĆ

Clinic for neurosurgery, 4 Koste Todorovića Street, Belgrade, Serbia

E-mail: danilo_radulovic@yahoo.com

Spontaneous regression of cervical disc herniation in a patient with myelopathy

Спонтана регресија цервикалне дискус херније код болесника са мијелопатијом

SUMMARY

Introduction The aim of this work was to present rarely spontaneous regression of herniated cervical disc in patient with myelopathy.

Case outline A 31 year-old women presented with 2 weeks history of neck pain associated with numbness in her body and all four extremities. The MRI of the cervical spine showed a large posterior medial disc extrusion at the C5-C6 causing myelopathy. The patient refused discectomy that was recommended. She received symptomatic treatment in the form of analgesics, muscle relaxant, and hard cervical collar. Follow-up MRI of the cervical spine, that was done after 11 months, revealed almost complete regression of the disc herniation. The patients symptoms had subsided completely after one year.

Conclusion In some cases of cervical disc herniation with myelopathy, , especially in patients with mild neurological deficit, symptomatic therapy should be considered.

Keywords: cervical disc; herniation; regression; myelopathy

САЖЕТАК

Увод Циљ овог рада је био да прикаже редак случај спонтане регресије цервикалне дискус-херније код болеснице са мијелопатијом.

Приказ болесника Жена, 31 година, јавила се на преглед због болова у врату и трњења у телу и сва четири екстремитета у трајању од две недеље. МР вратне кичме је показала изражену медијалну екструзију дискуса на нивоу C5-C6 која је довела до мијелопатије. Болесница је одбила предложену дисектомију. Спроведено је симптоматско лечење (аналгетика, мишићни релаксанти и тврди оковратник). Контролна МР вратне кичме после 11 месеци показала је скоро комплетну регресију дискалне хернијације. Симптоми су се потпуно повукли после годину дана.

Закључак У појединим случајевима цервикалне дискус-херније са мијелопатијом, нарочито код пацијената са благим неуролошким дефицитом, треба размотрити могућност симптоматске терапије.

Кључне речи: цервикални дискус; хернијација; регресија; мијелопатија

INTRODUCTION

Spontaneous regression of disc herniation without any surgical treatment has been reported to occur in the cervical region. Most such cases are confined to disc herniation that are associated with radiculopathy [1-8]. We present a very rare case of spontaneous regression of cervical disc herniation in patient with myelopathy, that was demonstrated by MRI.

CASE REPORT

A 31 year-old women, with an unremarkable past medical history, presented with 2 weeks history of neck pain associated with numbness in her body and all four extremities. Neurological examination showed C7 hypoesthesia level, without motor deficit. The MRI of the cervical spine showed a large posterior medial disc herniation (extrusion) at the C5/6 level with increased signal intensities of compressed spinal cord. The other intervertebral disc spaces were normal (Figure 1). We recommended that she undergo an anterior discectomy. The patient refused surgical treatment. She received symptomatic treatment in the form of analgesics, muscle relaxant, and hard cervical collar. The patient reported significant improvement in her symptoms after 2 months. Follow-up MRI of the cervical spine, that was done after 11 months, revealed almost complete regression of the disc herniation and resolution of increased cord signal at the level C5/6 (Figure 2). The patients symptoms had subsided completely after one year.



Figure 1. Initial sagittal (a) ant axial (b) T2-weighted MRI of cervical spine revealed large disc herniation with increased signal intensities of spinal cord at the level C5/6.

Figure 2. Follow-up sagittal (a) ant axial (b) T2-weighted MRI of cervical spine revealed almost complete regression of herniated cervical disc and resolution of increased cord signal at the level C5/6.

DISCUSSION

Son et al. [9] first reported a case of spontaneous regression of herniated disc in patient with myelopathy. They reported a case of 37-year old women who developed sudden C-7 sensory level quadriparesis (motor Grade 4+) caused by C5/6 disc herniation and subsequent myelopathy, that was seen on MRI of cervical spine. The patient refused cervical discectomy, that was recommended. Follow-up MRI, that was done after 28 months, showed complete regression of the disc herniation and abnormal cord signal. The patients symptoms had subsided almost totally.

We surveyed the literature and identified only one more reported case on this subject. Stavrinou et al. [10] reported 46-year old women with three weeks history of neck pain and right brachialgia, associated with hand numbness and mild grasping weakness. MRI of the cervical spine showed C5/6 disc herniation causing myelopathy. The patient was offered surgery, which she denied. Within 7 weeks, the patient had significant clinical improvement. A subsequent MRI showed almost complete regression of the disc herniation and myelopathy.

To our knowledge, the patient from our report is the third MRI documented case of spontaneous regression of cervical disc herniation in a patient with myelopathy.

The exact mechanism of spontaneous regression of herniated disc is still unclear. Regression of herniated disc detected on MRI might represent in part dehydration of the herniated nucleus pulposus. Histological studies have shown evidence for inflammatory reaction in the herniated disc material, subsequent angiogenesis, and macrophage infiltration that are playing an essential role in phagocytosis and regression of the herniated disc [11,12].

Some authors have suggested that some characteristics of herniated disc determine its likelihood to regress spontaneously. Spontaneous regression of sequestration was seen more frequently when compared to protruding herniation. Also, large sized disc herniation has been reported to regress more than smaller one [8].

As a rule, surgical therapy of cervical disc herniation associated with myelopathy is strongly recommended. Morbidity and mortality are low in this surgical procedure, with good outcome. It

would be inappropriate, to give some general treatment guidelines from the results in single patient from this report and previously reported two patients. However, the knowledge of possibility of spontaneous regression of herniated disc is important in considering treatment options, especially in patients with mild neurological deficit. In some cases of cervical disc herniation with myelopathy, nonsurgical symptomatic therapy should be considered as an option for treatment.

REFERENCES

1. Kobayashi N, Asamoto S, Doi H, Ikeda Y, Matusmoto K. Spontaneous regression of herniated cervical disc. *Spine J.* 2003; 3(2): 171–3.
2. Gurkanlar D, Yucel E, Er U, Keskil S. Spontaneous regression of cervical disc herniations. *Minim Invasive Neurosurg.* 2006; 49(3): 179–83.
3. 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.
4. Kobayashi N, Asamoto S, Doi H, Ikeda Y, Matusmoto K. Spontaneous regression of herniated cervical disc. *Spine J.* 2003; 3(2): 171–3.
5. Kocyigit F, Kocyigit A, Manisali M, Akalin E. Resorption of a sequestered cervical disc confirmed by magnetic resonance imaging: long term follow-up. Case report. *Eur J Phys Rehabil Med.* 2011; 47(1): 53–6.
6. Han SR, Choi CY. Spontaneous regression of cervical disc herniation: a case report. *Korean J Spine.* 2014; 11(4): 235–7.
7. Mahajan PS, Al Moosawi NM, Hasan IA. A Rare Case of Near Complete Regression of a Large Cervical Disc Herniation without Any Intervention Demonstrated on MRI. *Case Rep Radiol.* 2014; 2014: 832765.
8. Orief T, Orz Y, Attia W, Almusrea K. Spontaneous resorption of sequestered intervertebral disc herniation. *World Neurosurg.* 2012; 77(1): 146–52.
9. Song JH, Park HK, Shin KM. Spontaneous regression of a herniated cervical disc in a patient with myelopathy. Case report. *J Neurosurg.* 1999; 90(1 Suppl): 138–40.
10. Stavrinou LC, Stranjalis G, Maratheftis N, Bouras T, Sakas DE. Cervical disc, mimicking nerve sheath tumor, with rapid spontaneous recovery: a case report. *Eur Spine J.* 2009; 18 Suppl 2: 176–8.
11. Doita M, Kanatani T, Ozaki T, Matsui N, Kurosaka M, Yoshiya S. Influence of macrophage infiltration of herniated disc tissue on the production of matrix metalloproteinases leading to disc resorption. *Spine (Phila Pa 1976).* 2001; 26(14): 1522–7.
12. Kawaguchi S, Yamashita T, Katahira G, Yokozawa H, Torigoe T, Sato N. Chemokine profile of herniated intervertebral discs infiltrated with monocytes and macrophages. *Spine (Phila Pa 1976).* 2002; 27(14): 1511–6.