

SIMULTANEOUS DISC HERNIATION IN PATIENTS WITH MULTIPLE SCLEROSIS

Kalina V. Drenska¹, Ara G. Kaprelyan¹, Alexandra J. Tzoukeva¹, Radoslav Georgiev², Iliya T. Todorov³.

1) Department of Neurology,

2) MRI Sector, Department of Radiology,

3) Clinic of Physical therapy and Balneology,
Medical University of Varna, Bulgaria.

ABSTARCT

Background: Multiple sclerosis (MS) is a chronic autoimmune, inflammatory demyelinating disease of the central nervous system. Commonly, MS patients present with accompanying degenerative vertebral disc diseases. Simultaneous disc herniations situated in the cervical or lumbosacral spine can mimic the clinical symptoms of MS and worsen patients' quality of life.

Objective: to investigate the incidence rate and clinical impact of accompanying disc herniations in patients with MS.

Material and methods: Our study covered 330 patients (220 females and 110 males, mean age 40.5±12.4 years) with clinically definite MS, according to McDonald's criteria. Comprehensive neurological examinations, EDSS (Expanded Disability Status Scale) assessments, and MRI neuroimaging were carried out. Statistical data processing was performed by using the method of variation analysis.

Results: Relapsing-remitting MS (RRMS) was diagnosed in 280 patients while 50 patients presented with secondary progressive MS (SPMS). Disc herniation was found in 64 (19.4%) of our patients. Cervical disc pathology was detected in 38 patients (11.5% of the cases) and lumbosacral - in 26 (7.9% of the cases). EDSS scores ranged from 2.5 to 5.5. EDSS evaluation showed statistically significantly worse scores in MS patients with disc herniation comorbidity ($p < 0, 05$).

Conclusion: Our own data confirm the assumption that MS patients often present with accompanying degenerative disc pathology. We suggest that comorbidity of disc herniation and MS exert an additional unfavorable effect on patient's disability and individual quality of life.

Key words: Multiple sclerosis, disc herniation, comorbidity

INTRODUCTION

Multiple sclerosis (MS) is a chronic autoimmune, inflammatory demyelinating disease of the central nervous

system. It is one of the most often causes of neurological disability affecting young adults (7). Commonly, MS patients present with accompanying degenerative vertebral disc diseases. Simultaneous disc herniations situated in the cervical or lumbosacral spine can mimic the clinical symptoms of MS and worsen patients' quality of life (8). K. Jaracz et al. (2010) examined disease severity in 210 MS patients aged between 21 and 59 years by using EDSS. It was mild (EDSS < 4) in 85% of the cases.

Compression of cervical spinal cord secondary to cervical spondylosis or disc herniation can result in acute or chronic myelopathy. This may go unnoticed in MS patients frequently presenting with similar symptoms (8, 14). Appropriate use of neuroimaging studies assist in the differentiation of these two disorders (2). Many neurological symptoms in MS patients are identical to those experienced by patients with disc herniations (14).

The objective of our study was to investigate the incidence rate and clinical impact of accompanying disc herniation in patients with MS.

MATERIALAND METHODS

The study covered 330 patients (220 females and 110 males, mean age 40.5±12.4 years) with clinically definite MS according to McDonald's criteria (Table 1.). All cases were hospitalized in the First Clinic of Neurology at St. Marina University Hospital of Varna during the period from January 2005 to March 2012. Comprehensive neurological examinations, EDSS (Expanded Disability Status Scale) assessments, and MRI neuroimaging were carried out. Statistical data processing was performed by using the method of variation analysis.

Table 1. Patients' distribution according to gender.

Sex	Males	Females	Total
Number	110	220	330
%	33,4	66,6	100

RESULTS

RRMS was diagnosed in 280 patients, while 50 patients presented with SPMS. Disc herniation was found in 64 (19.4%) of our patients (Table 2.). Cervical disc pathology was detected in 38 patients (11.5% of the cases) and lumbosacral - in 26 (7.9% of the cases). EDSS scores ranged from 2.5 to 5.5. EDSS evaluation showed statistically significantly worse scores in MS patients with disc herniation comorbidity ($p < 0,05$). We present two of our cases with corresponding MRI findings.

Table 2. Patients' distribution according to the location of disc herniations.

	Total	
	n	%
Cervical disc herniation	38	11,51
Lumbosacral disc herniation	26	7,88
Total	64	19,39

Case 1. The disease began in 1999 with paraesthesia and weakness in the arms, paraesthesia in lower extremities, ataxia, and visual disturbances. Diagnosis was proven in 2002 by MRI that showed features of MS and C5-C6 herniated disc (Figure 1). On the CT of lumbar vertebrae were found further herniated disc of L5-S1. This is an example of comorbidity of MS with disc disease.



Fig. 1. T2-weighted MRI image shows dorsally located lesions on C2-C3 and C4-C5; left side paramedian descendent focal disc herniation (intraannular prolapsed disc) on level C5-C6, and bulging disc on level C6-C7.

Case 2. The disease began at 2003 with visual disturbances, paraesthesia of the right facial half and both lower extremities legs. Later on MRI images confirmed the diagnosis MS, and showed disc herniations on several levels in cervical region. In this case, as an additional trove herniated disc was found, in patient without having symptoms by the moment (Figure 2).

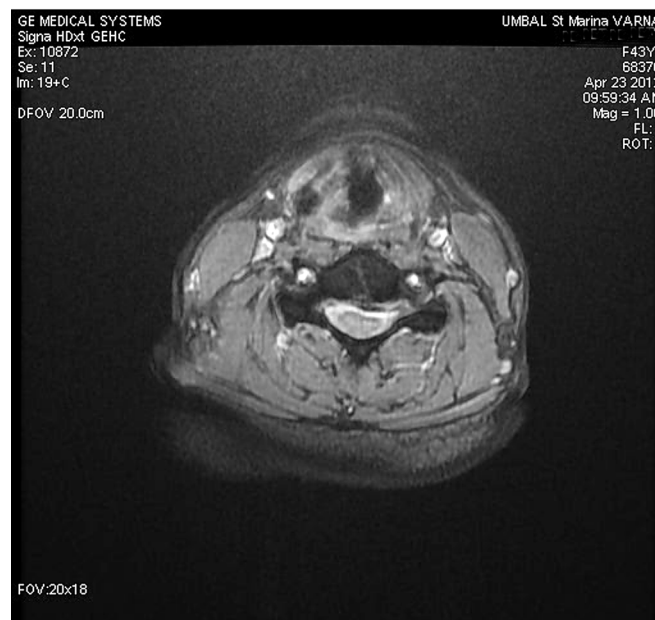


Fig. 2. T2-weighted MRI image shows on C5-C6 levels paramedian to lateral disc protrusion on a wide base, with compression on the left nerve root. There are lesions in the spinal cord centrally located, also. These are T2 series in axial projection.

DISCUSSION

There are several publications about the comorbidity between MS and disc herniation. For some MS patients, the neurological deterioration may result from coexisting spinal cord compression attributable to a herniated disc. A 38-year-old man presented with symptomatic simultaneous multilevel disc herniation in the cervical, thoracic and lumbar spine along with MS diagnosed by means of visual evoked potentials and cerebrospinal fluid examination (8).

Clinical features and MRI may assist clinicians in differentiating between the two diseases: MS and disc herniation, and may guide appropriate treatment. The role of MRI in the diagnosis of spinal pathology is widely emphasized (1, 3, 10, 11). The evaluation of a patient with known MS who develops new signs of spinal cord dysfunction, should always include spinal neuroimaging studies.

Recently, the diagnostic significance of EDSS is proved by a series of comprehensive clinical trials (4, 5, 6,

9, 12, 13). We also establish worsening of the scores in the patients with MS and spinal pathology.

CONCLUSION

Our own data confirm the assumption that MS patients present with accompanying degenerative disc

pathology. We suggest that comorbidity of disc herniation and MS exert an additional unfavorable effect on patient's disability and individual quality of life. Decompression surgery may be an efficacious procedure in selected MS patients who have coexistent spinal cord compression.

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Correspondance Adress:

Kalina Drenska, MD.
University Hospital "St. Marina" Varna, Bulgaria
e-mail: k_drenska@abv.bg,