CO-OCCURRENCE OF PROGRESSIVE MULTIPLE SCLEROSIS (MS) AND NEUROFIBROMATOSIS TYPE 1 (NF1) IN A PATIENT WITH SERUM ANTI-MYELIN OLIGODENDROCYTE GLYCOPROTEIN ANTIBODIES (MOG-ABS).

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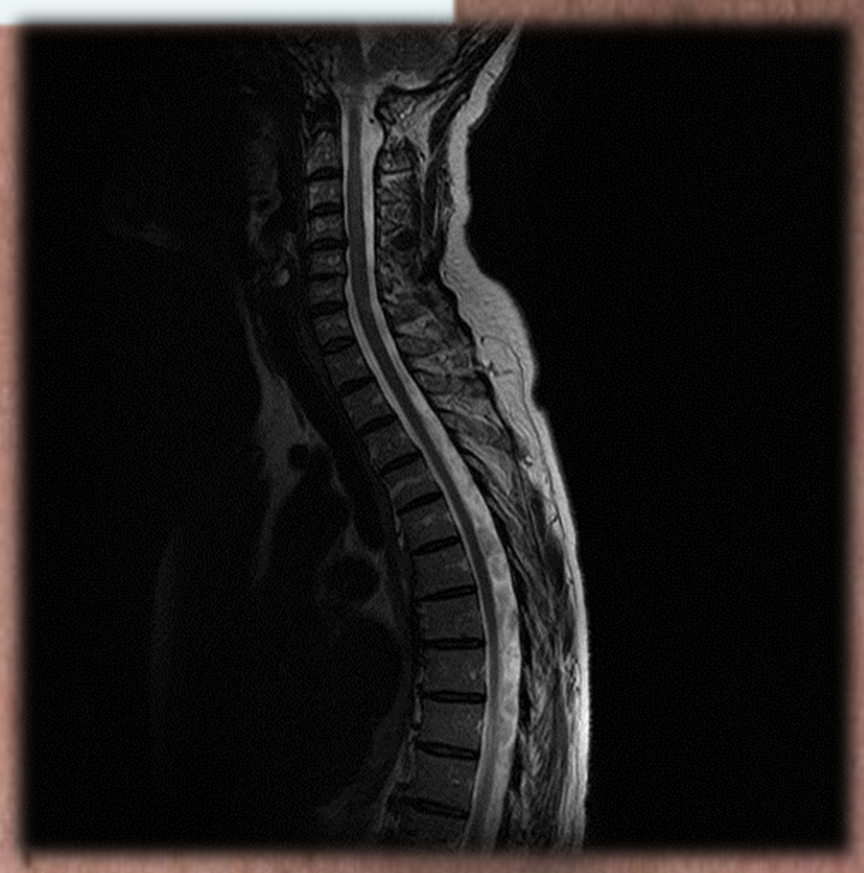
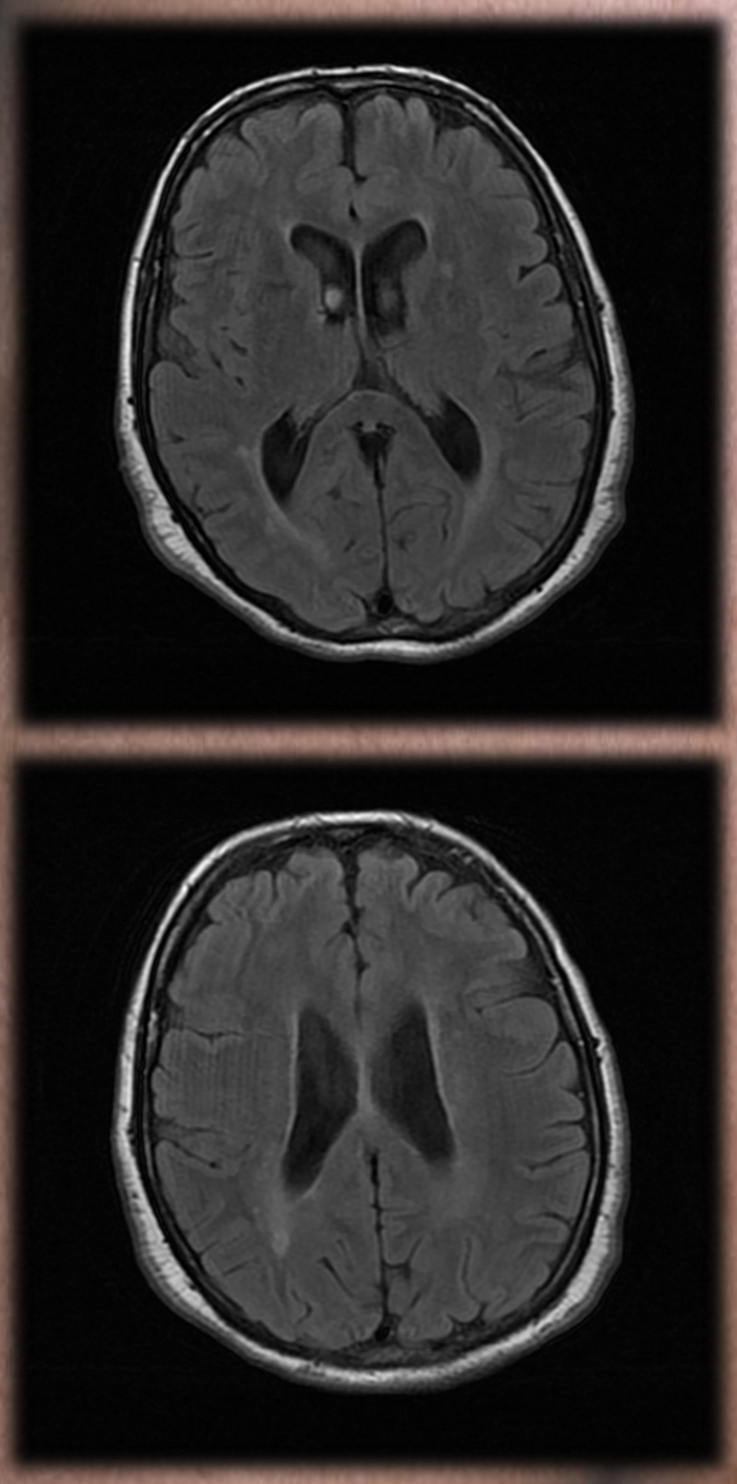
Introduction

Neurofibromatosis type 1 (NF1) is an autosomal dominant disorder related to mutations of a gene located on chromosome 17q11. Co-occurrence of NF1 and Multiple Sclerosis (MS) has been described with a frequency estimated to be higher than that expected by chance. Oligodendrocyte myelin glycoprotein (OMgp), a possible target in MS pathogenesis, is embedded within intron 27b of the NF1 gene A. Nevertheless, a mutation of this gene was demonstrated to be neither sufficient nor necessary for the development of the primary progressive MS.



[Figure 2]: Spinal cord



[Figure 1]: Brain

Case Report

Here, we report on a patient with NF1 who developed primary progressive MS. The patient was a 56 years woman who was diagnosed with NF1 on the basis of cafè-au-lait patches and dermal neurofibromas. She had two sons with NF1. At age 53 she experienced paniful tonic spasm of the fourth and fifth fingers of right hand, elicited by palmar flexion. One year later she developed a progressive worsening postural and gait instability, associated with several falls and later on bilateral paraesthesias of hands and feet. At admission to our Department neurological examination revealed an ataxo-spastic gait, hyperreflexia, left Babinsky sign, severe distal hypopallestesia, slight bilateral kinetic tremor and urge incontinence. **Brain MRI** showed multiple *T2-hyperintense areas in the white matter of both cerebral hemispheres*, predominantly in the **periventricular** regions [Figure 1]. None of them enhanced after gadolinium-EDTA administration. **Spinal MRI** revealed signal abnormality suggestive of MS in the **cervical cord** [Figure 2]. Brain stem auditory and somatosensory evoked potentials gave abnormal responses. Visual evoked potentials showed an irregular morphology with an irreproducible P100 wave. Cerebrospinal fluid (CSF) analysis disclosed normal cell and protein content and intrathecal IgG synthesis. Anti-ANA antibodies were positive (1:1280), whereas anti-ds DNA, anti-Ku, anti-Ro52, p-ANCA, c-ANCA, anticardiolipin IgM and IgG, beta-2 glycoprotein IgM and IgG, antimyeloperoxidase, anti-proteinase 3, antigangliosides, onconeural antibodies were absent.
Serum **anti-MOG Abs** were found. Primary-progressive MS was diagnosed.

Conclusions

The association of NF1 and MS is intriguing and still unexplained. Both ***Neurofibromin***, the product of **NF1** gene, and MOG is mainly expressed in oligodendrocytes. A possible activation of autoimmune response related to abnormal exposure of oligodendrocytes antigen might explain the coexistence of MS, MOG-autoimmunity and NF1 in our patients. Such an association might be challenging for treatment choice.

Bibliography

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