Effectiveness of Rituximab treatment in the relapsing anti-MOG optic neuromyelitis

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INTRODUCTION

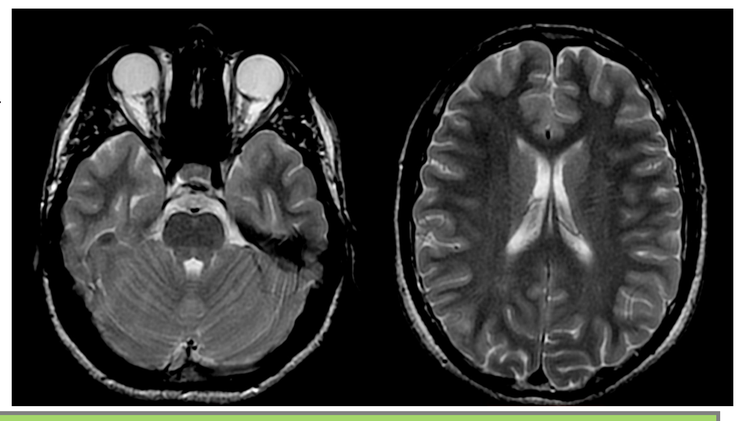
Antibodies against myelin oligodendrocyte glycoprotein (MOG) have been identified in a subgroup of patients with inflammatory demyelinating disease of the central nervous system (CNS) such as pediatric multiple sclerosis (MS), acute disseminated encephalomyelitis (ADEM) and neuromyelitis optica spectrum disorders (NMOSD).

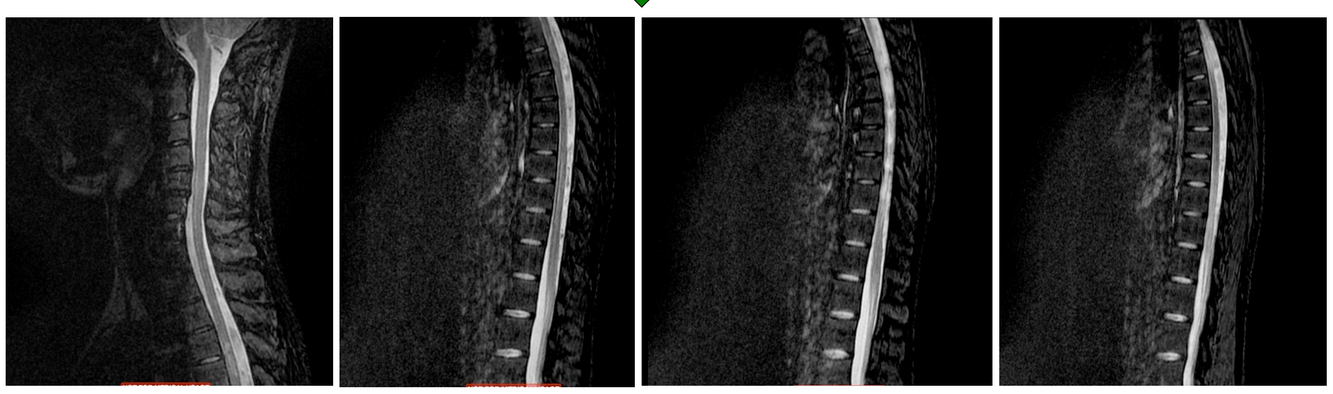
MATERIALS

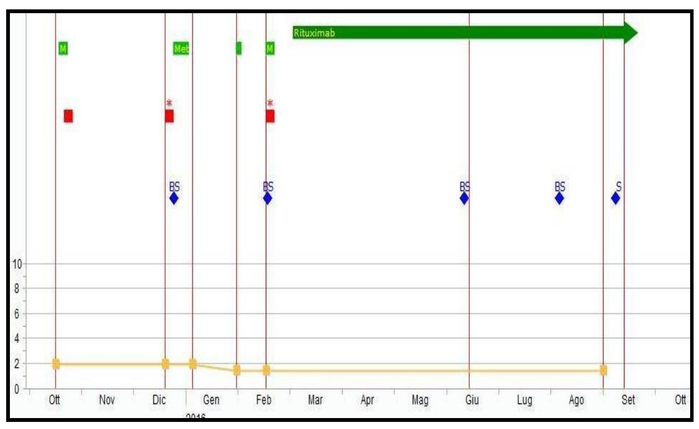
A 25 years-old man came to our observation complaining of bilateral decrease in visual acuity in two days, associated with optic disc swelling on fundoscopy completely remitted after steroid pulse therapy.
After 5 days from tapering therapy, appeared subacute urinary retention mixed with gait disturbance due to weakness of lower limbs.

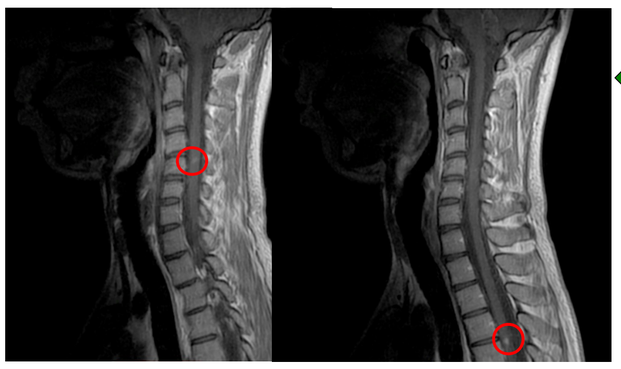
BRAIN AND SPINAL CORD MRI

❖BRAIN MRI: showed only a lesion on the left optic nerve.
❖SPINAL CORD MRI: **D12-L1** hyperintense stria; hyperintenses striae on anterior horn at **D4-D6** and **D8-D10** levels.









After one month from a completely clinical remission, following another steroid therapy, he suffered from burning paresthesia on the left hip and Lhermitte's sign.

SPINAL CORD MRI: a new **C5** lesion with contrast enhancement.; constrast enhancement on **D5** lesion.
Another steroid cycle therapy was done with full clinical remission but a new medullary syndrome with paraparesis and urinary retention occurred after 15 days

RESULTS

❖PEV, thyroid function, aspecific autoimmune markers were normal.
❖Serum anti-aquaporin-4 antibodies (AQP4-IgG) were negative, while serum anti-MOG IgG were positive.
❖Cerebrospinal fluid's analysis showed 10 oligoclonal bands with mirror pattern. Link index: 0,49.
We opted for an anti-CD20 therapy (Rituximab) reaching a good control in instrumental and clinical activity, so far at 12 months of follow-up.

DISCUSSION AND CONCLUSION

Even though our index case fullfills most features described in literature for MOG-IgG positive NMOSD (younger age, male gender, simultaneous and bilateral optic neuritis, transverse myelitis, involvement of conus and thoracolumbar cord, good recovery from steroid therapy) he has an unusual course with high rate of relapses despite the well known monophasic course. Because of the limited knowledge in therapy for MOG-IgG positive NMO and the particularity of our index case, we felt justified in starting an off-label third-line therapy with an anti-CD20 drug (Rituximab) that has shown a good control in this form of NMOSD. Our date, also, confirms the pathogenic role of anti-MOG antibodies in this spectrum of demyelinating disease, but other studies should be done to confirm the effectiveness of anti-CD20 therapy.

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