Anti-MOG Optic Neuritis: Case Report and Insights into Diagnosis and Treatment

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INTRODUCTION:

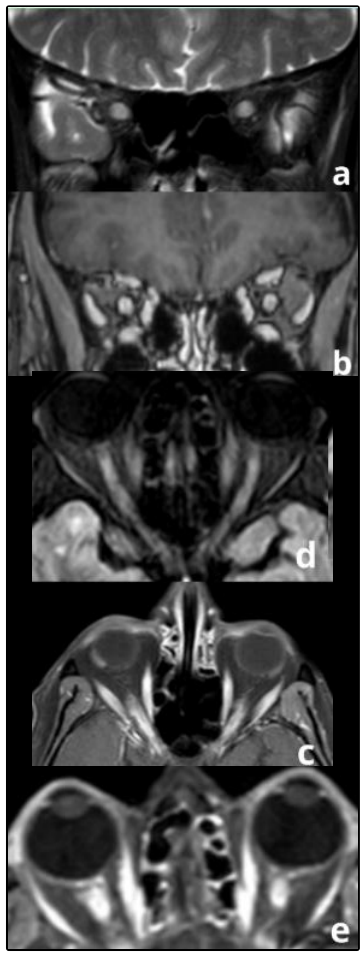
Myelin oligodendrocyte glycoprotein antibody-associated disease (MOGAD) is an inflammatory demyelinating disorder of the central nervous system that commonly presents with optic neuritis. Compared with other demyelinating conditions, MOG-associated optic neuritis is often bilateral, extensive, and potentially recurrent. Early recognition and prompt immunotherapy are essential to reduce the risk of persistent visual impairment.

CASE DESCRIPTION:

A 62-year-old female patient, hypertensive and an active smoker, using hydrochlorothiazide and amlodipine, presented with progressive visual loss, starting with blurring in the right eye and progressing to bilateral involvement. Two days after symptom onset, she experienced significant worsening, with reduced light perception. She sought care at a less specialized healthcare facility and was referred to a tertiary hospital. The patient reported recurrent flu-like episodes with fatigue lasting about a month before hospitalization. She denied ocular pain and recent weight loss. Orbital MRI revealed diffusion restriction and enhancement with paramagnetic contrast in the intraorbital portions of the optic nerves, consistent with extensive (more than half of the nerve) inflammatory optic neuritis, sparing the optic chiasm. No findings suggestive of neoplasia were identified. Treatment included pulse therapy (4 doses) and five sessions of plasmapheresis, resulting in significant symptom improvement. The patient was discharged with a prescription for 60 mg of prednisone, to be tapered gradually. Laboratory tests confirmed positive anti-MOG antibodies, while anti-AQP4 and paraneoplastic panel (BOC) were negative.

DISCUSSION AND CONCLUSION:

The patient presented with bilateral optic neuritis and significant visual loss, progressing from unilateral to bilateral involvement. MRI findings revealed extensive inflammation of the intraorbital optic nerves, sparing the chiasm, consistent with an inflammatory demyelinating condition. Positive anti-MOG antibody testing confirmed the diagnosis of MOGAD, with negative anti-AQP4 and neoplastic markers supporting the exclusion of alternative etiologies. The positive response to pulse therapy and plasmapheresis demonstrated the effectiveness of immunotherapy in improving vision in this condition.



A and B - coronal T2-weighted STIR image and coronal T1-weighted post gadolinum image;
C - Axial T2-weighted FLAIR image;
D and E - Axial T1-weighted post gadolinum images demonstrating extensive optic neuritis sparing the optic chiasm.