

Isolated Oculomotor Dysfunction as a Rare Presentation of Anti-GAD Antibody-Associated Neurological Disease

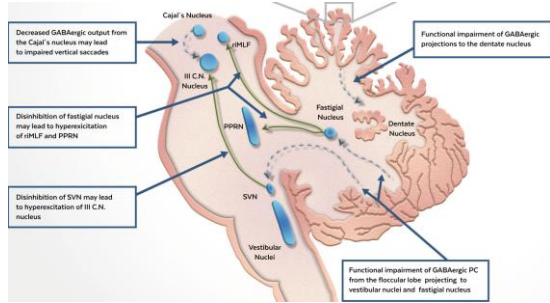
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Introduction

Glutamic acid decarboxylase (GAD) antibodies are associated with a range of autoimmune neurological syndromes, including cerebellar ataxia (CA). **Ocular motor disturbances** such as nystagmus and diplopia are frequently observed in CA but rarely are seen as isolated manifestation¹.

[1] Graus, et al. Nat. Rev. Neurol. 16, (2020).

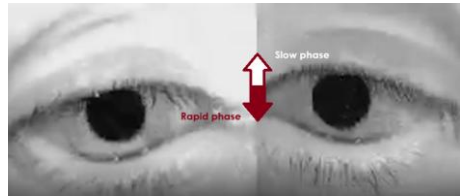
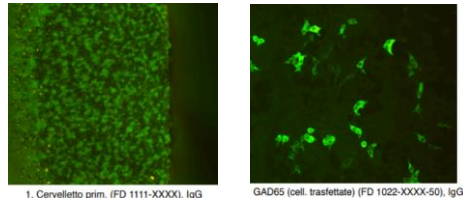


Baizabal-Carvalho, J. Et al J. Neural Transm. Vienna Austria 1996 (2017).

Case Report

A 60-year-old woman developed persistent **diplopia** with reading difficulties and vertigo over the course of a year. Examination revealed central-type **nystagmus**, predominantly downbeat on upward gaze and alternating horizontal nystagmus, without cerebellar signs or motor abnormalities.

Brain MRI and PET-CT were normal. Both serum and CSF showed **markedly elevated anti-GAD antibodies** (>2800 KUI/L), while other neuronal antibodies were negative. Videonystagmography confirmed downbeat nystagmus, impaired smooth pursuit, and bilateral vestibular hyperresponsiveness, consistent with a central vestibular disorder.



The patient showed only partial improvement after two courses of **intravenous immunoglobulin**. Long-term **azathioprine** therapy stabilized her condition over two years, though intermittent vertigo and fluctuating diplopia persist in milder form. Serial MRI, including MR spectroscopy, remained normal, and she continues regular neurological follow-up.

Conclusions

This case describes a rare anti-GAD antibody-associated disorder characterized by central nystagmus. The findings suggest a focal autoimmune involvement of the brainstem or vestibulocerebellar pathways and underscore the importance of **considering GAD antibody testing even in patients presenting with isolated nystagmus**.



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