

IMAGEM EM NEUROLOGIA/IMAGE IN NEUROLOGY

Bilateral Internuclear Ophthalmoplegia: Multiple Sclerosis rather Myelin Oligodendrocyte Glycoprotein Antibody-Associated Disease (MOGAD)?**Oftalmoparésia Internuclear Bilateral: Esclerose Múltipla ou Doença Associada aos Anticorpos Anti-MOG?**ID Ana João Marques ^{1,*}, Andreia Matas ¹, João Paulo Gabriel ¹

1-Serviço de Neurologia, ULS Trás-os-Montes e Alto Douro, Vila Real, Portugal

DOI: <https://doi.org/10.46531/sinapse/IN/124/2025>**Abstract**

Increasing knowledge about neuro-inflammatory conditions as lead to new challenges in establishing a diagnosis. Clinical distinctive features might help. We present a 34-year-old patient with bilateral internuclear ophthalmoplegia (bINO). Investigation was compatible with demyelinating central nervous system (CNS) disease. Low-positive IgG myelin oligodendrocyte glycoprotein (MOG) antibodies were found. Rituximab was started and the patient has remained without further clinical or magnetic resonance imaging (MRI) activity. Acknowledging that bINO is a well-known manifestation of multiple sclerosis (MS) but rarely reported among MOGAD patients its occurrence might help distinguish MS from MOGAD in an apparent overlap setting, favoring MS.

Resumo

O aumento do conhecimento sobre as doenças neuro-inflamatórias conduziu a novos desafios no estabelecimento de diagnóstico. Certas características clínicas distintivas podem ajudar. Apresentamos uma doente de 34 anos com uma oftalmoplegia internuclear bilateral (OINb). A investigação foi compatível com doença desmielinizante do SNC. Foram detetados anticorpos IgG da glicoproteína da mielin oligodendrócitos (MOG) fracamente positivos. Foi iniciado rituximab e a doente manteve-se sem mais atividade clínica ou imagiológica. Reconhecendo que a OINb é uma manifestação bem conhecida da esclerose múltipla (EM), mas raramente relatada em doentes com MOGAD, a sua existência pode ajudar a distinguir a EM da MOGAD num contexto de aparente sobreposição, favorecendo a EM.

A healthy 34-year-old woman presented with isolated diplopia for the last two days. She mentioned an episode that occurred eight years earlier, which she characterized as “blurred vision over a week”, fully recovered after steroids. She also stated that, at that time, had an ophthalmology consultation and underwent a brain magnetic resonance imaging (MRI), with “normal” results (images not available), no fur-

ther workup was done, and she was discharged. The patient remained asymptomatic since then. At present, neurological examination (see **Video**) disclosed isolated bilateral internuclear ophthalmoplegia (bINO). Neuro-axis MRI showed T2/FLAIR, non-enhancing multiple lesions involving the right middle cerebellar peduncle, supratentorial periventricular white matter and a cervical spinal cord-enhancing lesion

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Palavras-chave:

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***Autor Correspondente / Corresponding Author:**

Ana João Marques
Serviço de Neurologia, ULS
Trás-os-montes e Alto Douro
Avenida da Noruega, Lordelo,
5000-508 Vila Real, Portugal
armarques@chtmad.min-saude.pt

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Video 1. Neurological examination disclosing bilateral internuclear opthalmoplegia. ([see the video](#))

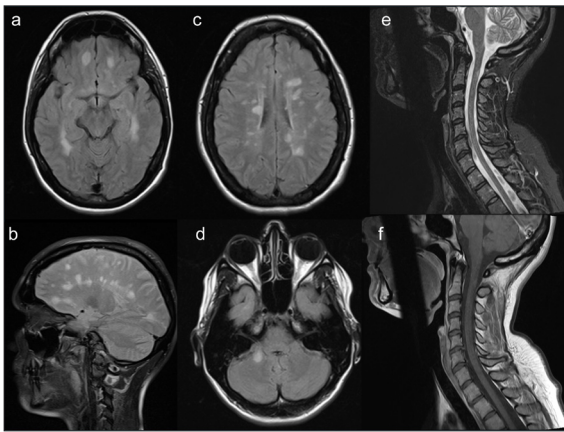


Figure 1. Brain MRI (a-d) showing multiple T2/FLAIR hyperintense lesions: periventricular, subcortical (a,c) and pericalosal (b) as well as in the right middle cerebellar peduncle (d). None contrast enhancing. Spinal cord MRI (e-f) disclosed posterior hyperintense T2/STIR lesion at C2 level (arrow) with discret gadolinium enhancement (*).

(**Fig. 1**). Cerebrospinal fluid (CSF) showed mildly elevated WBCs at 23 (normal $<5/\mu\text{L}$; 100% mononuclear), normal protein and glucose and negative bacteriological culture. Low-positive serum IgG myelin oligodendrocyte glycoprotein (MOG) antibodies were found by fixed cell-based assay (and confirmed 6 weeks later), serum AQP4-IgG turned out to be negative. Positive CSF-oligoclonal bands were identified. The patient recovered after methylprednisolone (1 g/5 days). No better explanation was found for this case's diagnosis other than relapsing-remitting multiple sclerosis (MS), despite the identification of weak positivity for anti-MOG antibodies. Notwithstanding, safeguarding an eventual

dismal evolution demanding future reconsideration of MOGAD's differential diagnosis, the patient started on rituximab (1000 mg 6/6 months). She remains asymptomatic, adding no further T2/FLAIR or enhancing brain or spinal cord lesions after 2 years of follow-up. Acknowledging that bINO is a well-known manifestation of MS¹ but rarely reported among MOGAD patients,² herein we highlight that its occurrence might help distinguish MS from MOGAD in an "apparent" overlap setting, favoring MS. ■

Contributorship Statement / Declaração de Contribuição

AJM: Design, conception and writing of the article.

AM: Critical review.

JPG: Review and final approval.

All authors have read and approved the manuscript.

AJM: Conceção e redação do artigo.

AM: Revisão crítica.

JPG: Revisão e aprovação finais.

Todos os artigos leram e aprovaram o manuscrito.

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