Reviewer’s report

Title: MOG antibody seropositivity in a patient with encephalitis: beyond the classical syndrome

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Reviewer: Alvaro Cobo-Calvo

Reviewer's report:

Authors describe an interesting case of a 31 years old MOG-Ab positive patient presenting with encephalopathy along with grey and white matter lesions.

Major comments

My major concern is the definition of encephalitis used in the present case. As authors describe, the patient strictly fulfills the criteria for possible autoimmune encephalitis (Graus F, et al Lancet 2016). However, in their position paper, Graus and colleagues include ADEM as autoimmune encephalitis. The authors defined the present case as autoimmune encephalitis and in the discussion section they noted "that the radiological features here described are also unique and different from ADEM-like". I would appreciate a more deeply discussion explaining whether the present case fulfill or not the current ADEM criteria (Krupp LB, et al . Mult Scler 2013).

Authors refer to two recent articles describing a cortical encephalitis (Ogawa R, et al and Fujimori et al). In both articles, authors reported patients with only cortical lesions on the first brain MRI. Ogawa and colleagues reported an homogenous hemispheric cortical pattern with epilepsy without other brain lesions and they defined these cases as cerebral cortical encephalitis. Fujimori and colleagues reported an initial case with cortical and cingulate gyri affection and, in a further brain MRI the patient developed grey matter affection. I would appreciate if authors may explain differences between both encephalitic processes: "a pure cortical involvement as a part of MOG-Ab encephalitis" (as Ogawa reported) or an "ADEM with MOG antibodies".

There is another report (Numa S et al. Inter Medicine 2016) describing a MOG positive patient with cortical and grey matter affection. In this case, authors defined the patient as an ADEM -like.

Minor concerns

Some authors (Hakohen Y et al.Neurology 2017) start using the term MOG-Ab- related disorders to describe clinical phenotypes related to this emerging entity. Thus, in the background
I would suggest "the whole spectrum of clinical phenotypes associates with MOG-Ab-related disorders has still to be clearly defined"

Authors performed a myelin staining with serum of the patient suggesting MOG-Ab binds to MOG protein in brain sections of rat. However, whether MOG antibodies or other autoantibodies could be involved in patients with cortical affection in not completely known. Do the authors have access to CSF? In previous cortical encephalitis patients with MOG antibodies, MBP in CSF was negative suggesting that maybe other autoantibodies could be involved in the pathophysiology of the lesion.

I would revise whether confusion and altered consciousness are symptoms instead of signs

I would suggest authors to add the number of serum leucocytes, erythrocyte sedimentation and C reactive protein, also the kind of antibiotics used.

I would change spinal cord was negative for spinal cord was normal.

Authors noted IgIV 0.5 g/kg for 5 day instead of 0.5g/kg/day for 5 days

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

Not relevant to this manuscript

Quality of written English
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published
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