Reviewer’s report

Title: Paraneoplastic Neuromyelitis Optica associated with ANNA-1 Antibodies in Invasive Thymoma

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Reviewer: Paul Riordan-Eva

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Case report
Paraneoplastic Neuromyelitis Optica associated with ANNA-1 Antibodies in Invasive Thymoma
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BMC Ophthalmology (Section: Neuro-ophthalmology)

The authors report a single case that potentially increases knowledge of autoantibodies associated with thymoma-related paraneoplastic disease, antineuronal nuclear antibodies type 1 (ANNA-1) as well as antiaquaporin-4 antibodies (AQP4) being present in association with presumed neuromyelitis optica (NMO).

Major Compulsory Revisions

1. Case presentation paragraph 4
   a) More specific histopathological categorisation than “malignant epithelial” of the pulmonary neoplasm needs to be provided, especially that it was not a small-cell carcinoma.

2. Case presentation paragraph 6
   a) It needs to be stated whether any abnormalities of the left optic nerve were identified on the follow-up MRI.
   b) More information including the results of spinal MRI needs to be provided to establish that the lower limb abnormalities were due to myelitis, peripheral neuropathy specifically needing to be excluded.

3. Case presentation paragraph 3
   a) The timing of the optical coherence tomography (OCT) scans needs to be specified and if diffuse retinal nerve fibre layer atrophy in the left eye was present after only 1 week of loss of vision then it would need to be explained in the discussion.
   b) There needs to be comment in the discussion about the multifocal ERG abnormalities. Was there retinal as well as optic nerve dysfunction, which would not be expected in NMO?
Minor Essential Revision
1. Discussion paragraph 1
a) What is the basis for saying that there was predominant involvement of the retinal ganglion cell layers?

Discretionary Revisions
1. Case presentation paragraph 2
a) There is a contradiction between the “total dyschromatopsia” in the right eye at first examination and the deterioration of colour vision during follow-up.
b) Was the abnormality of the right eye optic nerve on MRI contrast enhancement extending to the pre-chiasmatic portion?
2. Case presentation paragraph 3
a) What is the meaning of “relatively normal” left optic disc?
3. Discussion, paragraph 1
a) I think that the authors mean:
   “Thymoma has been associated with several immunologically mediated diseases and various paraneoplastic autoantibodies.”

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.