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Sir,

Paraneoplastic optic neuropathy associated with cerebellar choroid meningioma

Paraneoplastic optic neuropathy (PON) is a rare disorder that is associated with malignant tumors, such as small-cell lung carcinoma and lung adenocarcinoma and malignant lymphoma.[1,2] PON caused by non-malignant tumors has not yet been reported in the literature.

Case report

A 39-year-old woman reported experiencing headache and was taking demulcents for 9 months. Six months prior, she had experienced fever, headache, and dizziness, followed by sudden vision loss in the left eye. She visited our hospital in March 2012. Her best-corrected visual acuity (BCVA) was 20/20 OD and 20/250 OS, with an afferent pupillary defect and paracentral scotoma OS. The right eye had normal visual field. Critical flicker frequency OS decreased to 15 Hz. Color vision, the slit-lamp and dilated funduscopic examinations, and full-field and multifocal electroretinogram findings were all unremarkable OU.

Magnetic resonance imaging (MRI) disclosed a gadolinium-enhancing lesion in the left cerebellar hemisphere (Figure 1a), but did not show any optic nerve abnormalities.

The patient's plasma, which was collected at the first visit, was cross-reacted with rat, monkey, and human optic nerve sections (Figure 1b).

Two months after presentation, the cerebellar tumor was surgically removed. The histopathological diagnosis of the tumor was chordoid meningioma. The patient felt visual improvement at the next day after the resection, and the BCVA OS improved to 20/33 after 1 week and to 20/20 after 1 month, with the resolution of other symptoms, which was maintained at the last visit for 1 year.

PON occurs in association with immunologic responses against neuronal antigens that are expressed by the underlying cancer.[3,4] In our case, immunoreactivities of the patient's plasma to the optic nerve sections strongly indicated the existence of a certain autoantibody that most likely targeted the optic nerve fibers.

Comment

Chordoid meningioma, which is assigned to WHO grade II (atypical meningioma), is a rare meningioma that is sometimes associated with Castleman syndrome and characterized by fever of unknown origin, hematological

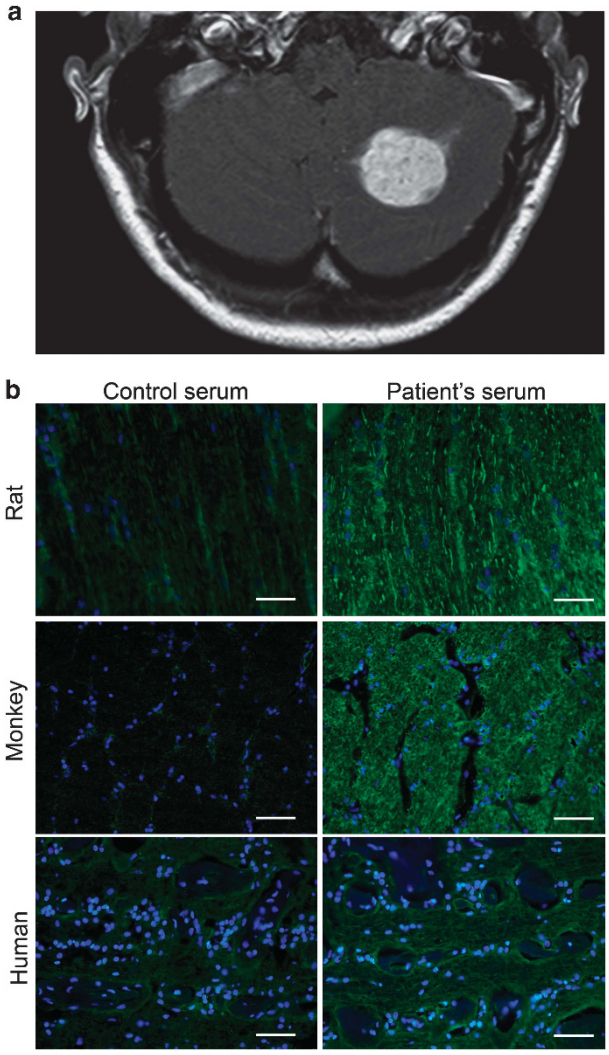

Figure 1 (a) Brain axial MRI (T1-weighted, post gadolinium enhancement). Note the well-defined gadolinium-enhancing lesion in the left cerebellar hemisphere. (b) Immunostaining using the patient's plasma on rat, monkey, and human optic nerve sections. The sections were blocked by 10% goat serum and incubated overnight in either the patient's or a healthy human's plasma diluted at 1 : 3 in phosphate-buffered saline with 0.01% Tween-100. Following extensive washes, the sections were incubated in fluorescein isothiocyanate-conjugated human IgG (green) for 1 h. The nuclei were counterstained with Hoechst dye 33258 (blue). The sections were intensively immunoreactive for the patient's serum but not for the control serum. Note the linear pattern in shape of immunoreactivity in the rat section, which corresponded to the nerve fiber arrays. Scale bar = 100 μm.

abnormalities (eg, hypochromic or microcytic anemia), and dysgammaglobulinemia, with bone marrow plasmacytosis.[5] The present case accompanied these symptoms.

Unilateral involvement of optic nerve in this case could not be fully explained, but some previous reports demonstrated such pattern with paraneoplastic syndrome.[6,7] We need to be aware of unilateral paraneoplastic syndrome.

Conflict of interest

The authors declare no conflict of interest.

Acknowledgements

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Sir,

Change in subfoveal choroidal thickness in central serous chorioretinopathy

In an article regarding changes in subfoveal choroidal thickness (SFCT) in patients with central serous chorioretinopathy,[1] Drs Kang and Kim described decreases in SFCT of 39.9 and 66.9 μm respectively, following observation and treatment with reduced-fluence photodynamic therapy.

We would like to highlight some aspects of the study design that may have bearings on the interpretation of these results. Although the authors mentioned diurnal variation in the discussion,[1] it does not appear from the description of the methods that this was accounted for in the study design. Earlier studies[2,3] have demonstrated significant diurnal variation of SFCT measured using spectral-domain optical coherence tomography. In these papers, the amplitude (difference between the maximum and minimum choroidal thickness) exceeded 30 μm,[2,3] which is similar in magnitude to the change reported in the observation group in the current paper. Furthermore, when subjects with thicker choroids (defined as $\geq$400 μm) were sub-analyzed in one paper,[2] the mean amplitude was even larger (43.1 μm) with a maximum of 59 μm. In addition to within-subject diurnal variation between the initial and follow-up reviews, it is also important in this study to consider the effects of potentially different measurement times between the two groups of patients (ie, within-group variation), which might have had an effect on the mean choroidal thickness of each group.

Another point of interest is whether the authors utilized the eye-tracking feature of the Spectralis OCT (Heidelberg Engineering, Heidelberg, Germany) in performing the successive OCT scans between visits. As the choroid is known to exhibit spatial variation in thickness throughout the macula,[4,5] a minor change in the OCT scan position may result in differences in choroidal thickness measurements, which are sufficient to influence the comparison of SFCT. These concerns could have been mitigated by the use of the eye-tracking function that is also available on the Spectralis OCT, which we believe is an important methodological consideration in longitudinal measurements of choroidal thickness.

In conclusion, we congratulate the authors on an interesting paper, and urge investigators to consider the impact of diurnal variation of choroidal thickness on the results of such studies.

Conflict of interest

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