ERDEY EYE GROUP
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Optic Neuritis and Early Multiple Sclerosis (MS) Prediction

Ocular clinicians play an important role in the diagnosis of MS since ocular findings are often the presenting sign. High clinical suspicion for optic neuritis remains our best ally to identify this condition. Recent evidence provides hope that treatment of optic neuritis may, under certain circumstances, significantly reduce subsequent development of MS.

Optic neuritis typically presents with unilateral vision loss (ranging from subtle to profound), color vision loss, orbital pain (particularly with eye movement), and relative afferent pupillary defect. Only one third of adult optic neuritis patients demonstrate papillitis evidenced by a swollen optic nerve with or without peripapillary flame-shaped hemorrhages. The remaining two thirds of adult optic neuritis patients have retrobulbar involvement characterized by normal optic disc appearance. Visual field defects most commonly demonstrate central scotoma, but centrocecal or nerve fiber bundle defects are also possible.

MS is usually heralded by a single clinical demyelinating event involving the optic nerve, spinal cord, cerebellum, or brain stem. Thus optic neuritis may very well be the first clinical indicator of MS in many patients. Further workup of these patients would include a complete neurological examination and a detailed history. Previous episodes of optic neuritis, headaches, nausea, a history of episodic neurological deficits with heat and exercise (Uthoff's sign), diplopia, patchy paresthesias, ataxia, or vertigo are all suggestive of MS.

The Optic Neuritis Treatment Trial (ONTT) demonstrated that IV methylprednisolone hastens visual recovery but does not improve final visual acuity compared to observation. ONTT assigned 457 patients with acute optic neuritis into 3 treatment categories: IV methylprednisolone followed by oral prednisone, oral prednisone alone, or oral placebo. Oral prednisone offered no long-term improvement in visual outcome compared to observation, and doubled the recurrence rate of optic neuritis. IV methylprednisolone delayed the development of further neurological events consistent with MS and hastened visual recovery of optic neuritis, though at one-year follow-up and thereafter there was no significant difference in visual recovery among the three groups.

The Controlled High-Risk Subjects Avonex Prevention Study (CHAMPS) followed 383 patients with the first attack of an acute demyelinating event, such as optic neuritis, who had subclinical demyelination on an MRI scan. CHAMPS patients received initial IV methylprednisolone, and then were randomized to receive Avonex (interferon beta-1a) or placebo. After 3 years, the probability of developing clinically definite MS was 44% lower in the treatment group.

In summary, a keen index of suspicion for optic neuritis is important since many MS patients present with visual symptoms but the majority of adults with this condition have normal optic nerve appearance. MRI and neurological referral are paramount to determine if patients would benefit from IV methylprednisolone and Avonex to reduce their chance of subsequent MS.

- Ocular Clinicians Play an Integral and Important Medical Role in the Treatment of Optic Neuritis Patients.
- Ocular Findings are Often the Presenting Signs of Multiple Sclerosis.
- Recent Evidence Indicates that Treatment of Optic Neuritis May Significantly Reduce the Subsequent Development of Multiple Sclerosis.

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