

Unilateral Myelinated Retinal Nerve Fibers

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Dear Editor,

I read the photo essay titled “Unilateral Myelinated Retinal Nerve Fibers” with interest.^[1] The authors reported a case of unilateral extensive myelination with amblyopia, with partial improvement after occlusion therapy. However, there was no comment about the status of the optic nerve head. Several reports have suggested that myelinated nerve fibers are associated with optic nerve dysplasia.^[2] Williams proposed that retinal myelination leads to a decrease in the ganglion cells, which causes optic nerve hypoplasia, resulting in decreased visual acuity.^[3] Holland and Anderson postulated that the myelinated nerve fibers induce overall disorganization of neural elements, leading to a disc anomaly, which is responsible for refractory amblyopia.^[4]

Extensive unilateral myelination of nerve fibers can be associated with high myopia and severe amblyopia, which unlike other forms of amblyopia is notoriously refractory to treatment.^[5] In such patients, myelination surrounds most of the circumference of the disc.

We had a similar case with the triad of unilateral myelinated nerve fibers, high axial myopia, and amblyopia. A 6-year-old girl presented to our outpatient clinic with squinting in her left eye. Best-corrected visual acuity was 20/20 in the right eye and counting fingers close to the face in the left eye. Cycloplegic refraction was +0.50 -0.50 × 180° in the right eye and -8.50 -0.50 × 180° in the left eye. The left eye had an exotropia of 18 prism diopters. On anterior segment

examination, both eyes appeared normal. On dilated fundus examination, the right eye was normal; the left eye had extensive myelination of the retinal nerve fibers. Axial length in the right eye was 24 mm, and it was 27.68 mm in the left eye. Optical coherence topography (OCT) was performed to identify any disc anomaly, and revealed a small disc in the left eye. There was reduction in the average retinal nerve fiber layer thickness (RNFL) in the superior temporal quadrant. Full correction of the refractive error in the left eye was prescribed and patching of the right eye for 2 hours daily was recommended, but there was no improvement in vision after 3 months, after which patching was discontinued. Therefore, in any case of suspected extensive myelination, the disc should be evaluated with OCT to rule out any disc anomaly and to examine the status of RNFL thickness, which may be the cause of refractory amblyopia. This will help avoid unnecessary occlusion therapy.

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Conflicts of Interest

There are no conflicts of interest.

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