Evaluation of Refraction Changes Related to Age and Strabismus

In the perfect eye, the refractive power of the cornea and resting lens is just enough to focus light rays from a distant object onto the retinal plane. This condition whereby the length of the eye precisely matches the power of the cornea and lens—emmetropia—rarely exists or persists. It is generally accepted that the refraction of patients with accommodative esotropia averages +4.75 diopters, with a range of +3.00 to +10.00 diopters, whereas patients with intermittent exotropia have refractive errors similar to those in the general population.

In this issue, Chiesi et al. confirmed that patients with esodeviation tend to share a higher initial degree of hyperopia than the general population and the hyperopia tended to increase in the first years of life. Although there is a myopic shift in these patients in later years, the shift appears to be lower than in the general population. Whereas many patients with accommodative esotropia do have an eventual lowering of their hyperopic refraction, many patients maintain a similar refraction years later. The authors confirmed that patients with exodeviations have similar refractive errors to those with orthophoria. This finding contributes to the low incidence of amblyopia in patients with intermittent exotropia. Many children in whom a significant astigmatism is detected during the first few years of life often do not have marked changes in their refractive error. The authors noted that the increase of astigmatism usually occurred during the first 5 to 6 years of life. Finally, as confirmed by the authors, astigmatism often plays an important role in anisometropia amblyopia. Therefore, the management of refractive errors and its relation to strabismus and amblyopia conditions is probably the most common problem facing pediatric ophthalmologists in their practices and needs to be carefully documented and followed in children.

Leonard B. Nelson, MD, MBA
Editor

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