Introduction

Anisometropia refers to any difference in the spherical equivalents between the two eyes. Fortunately, anisometropia in children can usually be corrected fully without symptomatic effects. Although adults may be annoyed by uncorrected anisometropia, they may be totally intolerant of initial spectacle correction. Unequal image size, or aniseikonia, may occur, and the prismatic effect of the glasses will vary in different directions of gaze, inducing anisophoria. Anisophoria is usually more bothersome than aniseikonia for patients with spectacle-corrected anisometropias. ***(Miller, et al.; 2006).***

There is no doubt that anisometropia is a cause of amblyopia. Uncorrected anisometropia in children may lead to amblyopia, especially if one eye, is hyperopic. The exact mechanism of anisometropic amblyopia remains unclear, although it has been suggested that there may be active inhibition of the fovea to overcome the interference caused by attempting to superimpose a focused image in one eye and a defocused image in the other. ***(Utine, et al.; 2008).***

Refractive surgical procedures performed with the intent to reduce or eliminate refractive errors can generally be categorized as corneal or lenticular. Kerato-refractive procedures include radial keratotomy (RK), astigmatic keratotomy (AK), Photorefractive keratotomy (PRK), laser in situ keratomileusis (LASIK), implantation of plastic ring segments (e.g., Intacs), laser thermal keratoplasty (LTK), and radio frequency conductive keratoplasty (CK). Lenticular refractive procedures include cataract and clear lens extraction with intraocular lens implantation, phakic intraocular lens implantation, and piggyback lens implantation. ***(Nepomuceno, et al.; 2005).***

Myopia is the most common refractive defect in the world. Excimer laser refractive surgery has been challenging myopia since 1988 when the first

Excimer laser PRK for myopia on a normally sighted human eye was performed by McDonald and coworkers. ***(Drak, et al.; 2000).***

Young individuals can accommodate for low amounts of hyperopia and so may be under-represented in the populations of most eye care practitioners. However, high hyperopia can be amblyogenic either because of the inability to maintain retinal focus or because the stimulation for convergence results in a constant eye turn. Studies in adults show that there is a family tendency toward high hyperopia. For this reason, hyperopic patients should be advised that their infant relatives should be examined to rule out amblyopic risk factors. ***(Zadok, et al.; 2003).***

Treatment of astigmatism has been the second major challenge in the history of Excimer laser refractive surgery. Regression, corneal haze, and functional symptoms secondary to optical aberrations are possible complications of astigmatism correction with Excimer laser either using PRK, LASEK, or LASIK. ***(Epstein, et al.; 2006).***

For children with severe anisometropia, refractive surgery can help to head off amblyopia. Refractive surgery is often thought to fall under the exclusive purview of adult patients who simply wish to rid themselves of using contact lenses or glasses. However, for some children refractive surgery can open visual doors in ways that otherwise would not be possible. ***(Nizzola, 2007)***.

Aim of the essay

The aim of this essay is to give the light on recent modalities of refractive surgery in pediatric anisometropia.