

INFANTILE EXOTROPIA – A CASE REPORT

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Abstract

Purpose: To determine whether early exotropia can be treated with glasses.

Methods: Case report

A comprehensive ophthalmic examination was carried out in the following order: photorefractometry using the Plusoptix A09 photoscreener without cycloplegia, orthoptic examination with the prism alternative and cover test, anterior segment assessment using a slit lamp, a fundus examination, cycloplegic retinoscopy and an autorefractometer Sure sight.

Results: A clinical case of a 3-month-old child with infantile exotropia is presented. The refraction was astigmatic with a degree of 1.25 diopter in the right eye and 1.75 diopter in the left eye.

Conclusion: One of the main causes of infantile exotropia is a minimal degree of anisometropia between the two eyes in the astigmatic component. In cases of infantile or early esotropia, the timely prescription of glasses with a minimum degree of the astigmatic component of anisometropia, taking into account 0.25 diopter, can lead to the disappearance of esotropia.

Keywords: exotropia; infantile exotropia; strabismus; amblyopia; Microanisometropia

Introduction

Infantile exotropia generally presents in a similar fashion to congenital esotropia. It typically occurs early in life and presents with a large, constant exodeviation. Patients with infantile exotropia usually undergo surgery early in life in the same manner as patients with congenital esotropia¹. The authors' observation that a large preoperative angle of exotropia is the most significant risk factor for a successful surgical outcome is consistent with the findings of other investigators.

The main treatment of infantile esotropia is extraocular muscle surgery. According to the reported results, 18.3% of patients with infantile exotropia, especially those with more preoperative exotropia, needed a second operation to achieve good alignment^{2,3,4,5}.

Previous studies have shown that microanisometropia in the astigmatic component⁶ may be the cause of infantile esotropia. Correction of the minimum degree of anisometropia up to 8 months can eliminate strabismus and avoid surgery. We present an example of infantile exotropia. This form is much less common than infantile esotropia⁷. Our goal was to determine whether the correction of microanisometry would lead to the elimination of strabismus in children with infantile exotropia.



Case report

A 3-month-old boy presented with infantile exotropia since 2 months of age (Figure 1). The deviation of the eye was at first variable, and then became constant. The patient was otherwise healthy and neurologically normal. There was no family history of strabismus, amblyopia, or myopia. He had infantile exotropia of 35 prism diopters (PD) in the primary position in the left eye. Cycloplegic refraction with 1% tropicamide was 1.0 diopter sphere/-1.25 diopter cylinder at 17° in the right eye and was 1.5 diopter sphere/-1.75 diopter cylinder at 173° in the left eye. The cornea and lens were transparent. The fundus of the eye was without pathology.



Figure 1. We prescribed these glasses. OD Sph +0.25D Cyl – 1.25D ax= 17° OS Sph +0.5D Cyl – 1.75D ax=173°

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We examined the child 3 times over 5 months. At the first visit, after being prescribed glasses, he had alternating exotropia. At the 3-month visit, the parents reported that the deviation was not seen anymore (Figure 2). Within 3 months, the child did not wear the glasses for 2 weeks. The strabismus reappeared, and then disappeared after the resumption of wearing the glasses.



Figure 2. The patient was orthophoric after wearing glasses.

Discussion

Anisometropia is a difference in refractive power between the two eyes. Anisometropia can lead to amblyopia. There is evidence that adults with uncorrected anisometropia before the age of visual maturation have some degree of amblyopia⁸. Strabismus can occur as a consequence of anisometropic amblyopia. A difference in spherical equivalent refraction (SER) of 1 diopter or more is usually used as the definition for anisometropia. In this case, the cause of the development of strabismus was a very slight anisometropia in the cylindrical component of - 0.5D. It was this anisometropia that caused the strabismus. This indicates that anisometropia may stop bifixating on blurred images. Apparently, this anisometropia creates images of different contrast on the retina and the process of bifixation is disturbed.

Conclusion

One of the main causes of infantile exotropia is a minimal degree of anisometropia between the two eyes in the astigmatic component. In cases of infantile or early esotropia, the timely prescription of glasses with a minimum degree of the astigmatic component of anisometropia, taking into account 0.25D, can lead to the disappearance of esotropia.

Conflict of interests

The author declares that there is no conflict of interests.

Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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Study association

This study is not associated with any thesis or dissertation work.

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