

Surgical correction of congenital esotropia alternating and subsequent abnormal correspondence retinal: a case report

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Abstract

Introduction: Accomodative esotropia is secondary to inappropriate convergence during accomodative effort in an uncorrected hyperope and is often familial.

Case presentation: we report the case of 20 year old Caucasian patient with congenital esotropia alternating, of 30 prism diopters distance (5 m) and 40 prism diopters of esotropia at near, in both eyes.

Measures: Was performed strabismus, in peribulbar anesthesia, the right medial rectus was cashed 3.0mm, the left medial rectus was collected 3.5 mm.

Results: Immediately after surgery, the patient complained of intermittent diplopia, resolved with orthotic exercise which stimulated binocular vision,

Conclusion: This case report suggests that the surgical correction strabismus, should be considered with due caution in the treatment of congenital esotropia alternating and branches, and in some clinical scenarios selected to avoid the complication of postoperative diplopia, that in the case report resolved so benign. After three months surgical treatment, remains a small angle strabismus aesthetically acceptable, has not given double vision and remains abnormal retinal correspondence with orthotic exercise.

Keywords: Esotropia, Surgical Correction, Abnormal correspondence retinal

Introduction

Strabismus is an eye disorder in which the visual axes are not aligned; it affects 2-4% of children [1]. About half of these disorders are esodeviations, whose causes are anatomical [2], neurological, mechanical, refractive, genetic and accommodative [3,5]. Esotropia is the most common form in Western populations [6] and has several subtypes [7]. Accomodative esotropia is secondary to inappropriate convergence during accomodative effort in an uncorrected hyperope and is often familial [8] Infantile esotropia, nonsyndromic large-angle deviation noted within a few months of birth, is usually not associated with significant refractive error and is typically sporadic [9] but can be familial [10].

Case Presentation

Approval of the local Ethics Committee and written informed patient consent were obtained for this study. A 20 year old Caucasian patient affect by with congenital esotropia alternating non accommodative esotropia, that developed by 6 months of age Fig.1. He has never been subject to surgical correction of his strabismus. He wants to improve his appearance by reducing the angle of esotropia. Ophthalmologic examination included measurement of the best visual acuity (BCVA) Right eye had a visual acuity of 0,02 LogMar (Snellen equivalent:20/20) and the left eye had a visual acuity of 0.18 LogMar (Snellen equivalent:20/25). He preferred fixation with the right

eye, dominant eye. The fixation is central in the right eye, while in the left eye fixation is parafoveal. The initial angle of deviation was measured by the prism and alternate cover test in both eyes, showing esotropia of 30 prism dioptres at distance (5 m) and esotropia of 40 prism dioptres at near.



Figure 1. Congenital esotropia alternating non accommodative esotropia, that developed by 6 months of age.

There is no evidence of medial rectus muscle hyperfunction in both eye; there was only a mild hypofunction of the lateral rectus muscle of the left eye. After cycloplegic refraction performed with administration of cyclopentolate 1%, we obtained the following results: the visual acuity of the right eye was 0.2 LogMar (Snellen equivalent: 20/25) and with $+0,75/+0,5 \times 80^\circ$ it was 0.02 LogMar (Snellen equivalent: 20/20) while the visual acuity of the left eye was 0,6 LogMar (Snellen equivalent: 20/30) and with $+0,75/+0,75 \times 95^\circ$ it was 0,18 LogMar (Snellen equivalent: 20/25). At cover test, in cycloplegia, the both eyes showed esotropia of 40 prism dioptres at distance (5 m) and esotropia of 45 prism dioptres at near. On the synoptophore he did not fusion range of 20° , but diplopia was present. Anterior segment examination and funduscopy were unremarkable. At full neurological examination at presentation and during follow up was normal. The strabismus surgery was performed in peribulbar anesthesia [11,12]: the right medial rectus was recessed 3.0mm, the left medial rectus was recessed 3.5mm.

Results

Immediately after surgery, esotropia was of 15 prism and the patient did not present diplopia. But one week after surgery, the patient complained of intermittent diplopia, because esotropia was of 12 prism. The orthotic exercise were initiated to stimulate the onset of abnormal retinal correspondence to win the diplopia. The patient has been subjected to orthotic exercise to stimulate binocular vision, researching in his field of vision the best eye vergence to achieving the binocular vision. After three months, the patient won the diplopia, having achieved abnormal retinal correspondence, suitable to the residual esotropia. At cover test, the both eye showed esotropia of 12 prism dioptres at distance (5 m) and esotropia of 17 prism

dioptres at near. The orthotics exercises, continued in the 6 months after surgery, have stabilized both the abnormal retinal correspondence and the residual esotropia which is still, at 8 months after surgery, satisfactory cosmetic result Fig.2.

Discussion

Congenital or infantile esotropia is a well-recognized disorder of ocular alignment characterized by a non-accommodative, relatively large-angle constant esotropia that develops by 6 months of age in an otherwise-healthy child [6].

Although recently reported to comprise only 8% of all childhood esodeviations, congenital esotropia is commonly encountered in ophthalmology clinics as the result, in part, of the associated findings of amblyopia, nystagmus, dissociated vertical deviations, oblique muscle dysfunction, and consecutive deviations [1,5,10].



Figure 2. Satisfactory cosmetic result at 8 months after surgery.

This case report shows that congenital alternating esotropia can be treated with dual purpose of not only improve the aesthetics, but also to improve the vision. Semmlow [8] shows that more the angle of esotropia is reduced, more the patient has diplopia.

Conclusion

A careful study of preoperative correction of the esotropia using prism, it is necessary and essential for the choice of the surgery to be made [7,8]. So we can estimate the surgical correction with minor muscle movements, as the following rehabilitation of their functionality will necessarily be accompanied by orthotics exercises for a period not less than 12 months. We will not have the ambition to reach the orthoforia, but certainly we hope to facilitate the achievement of abnormal retinal correspondence. Bagolini et coll. [13] have demonstrated that the abnormal retinal correspondence is the only mechanism present in the strabismus at small angle, without suppression scotoma, and it is necessary and indispensable to remove diplopia.

Author Contributions

Conceived and designed the experiments: FM, NP, EP, RM, Analyzed the data: EP, RM, GM, FP, LM, NP, FP. Wrote the first draft of the manuscript: NP, FM, FP. EP, FM, LM. Contributed to the writing of the manuscript: FP, EP, RM, FM, GM. Agree with manuscript results and conclusions: EP, FP, LM GM. Jointly developed the structure and arguments for the paper: NP, EP, FP, RM, GM, FP, LM, . Made critical revisions and approved final version: EP, FP, LM, FM, GM, NP, RM.

"The authors declare that they have no competing interests."

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