Turan et al., J Clin Case Rep 2014, 4:12
DOI: 10.4172/2165-7920.1000467

Journal of Clinical Case Reports

Case Report Open Access

Constant Deviation in a Child after Surgery for Cyclic Esotropia

Kadriye Erkan Turan*, Hande Taylan Sekeroglu and Ali Sefik Sanac

Department of Ophthalmology, Hacettepe University Faculty of Medicine, Ankara, Turkey

Abstract

A 28-month-old boy presented with a 3-week history of intermittent left esotropia with a 48 hours cycle. The decision to perform surgery was made after treatment with patching and full refractive correction of the hyperopia. Bilateral medial rectus recession with recession of both inferior oblique muscles was performed. Follow up examination showed that a constant esotropia occurred despite the resolution of cyclic pattern.

Keywords: Cyclic esotropia; Ophthalmology; Bilateral medial rectus recession

Introduction

Cyclic strabismus is an uncommon disorder, of unclear etiology, in which strabismus presents in an alternate day pattern [1-3]. Although technically an intermittent form of strabismus, cyclic strabismus differs from typical intermittent strabismus [4]. Cyclic esotropia has been reported more commonly than cyclic exotropia or cyclic vertical deviations, and most cases occur in children [5,6]. Cyclic esotropia was first described by Costenbader and Mousel in 1964 [1]. Most common pattern is the 48-hour type, in which the eyes are straight one day and esotropic on the next. It is not related to visual acuity, fatigue, accommodation or disruption of sensory fusion. A relation with the biological rhythm, the location of which is unknown is suspected. If untreated, cyclic esotropia may progress to a constant deviation [7]. Surgical correction of the maximum deviation generally fixes the esotropia [2]. Treatment is based on the amount of the tropia measured on the strabismic days. After surgical correction, the deviation disappears and recurrence of esotropia is very infrequent [8].

Case Report

A 28-month-old boy presented at Hacettepe University Faculty of Medicine, Department of Ophthalmology with a 3-week history of intermittent left esotropia with a 48 hours cycle. The patient was otherwise healthy and neurologically normal. Orbital and cranial magnetic resonance imaging was normal. There was no family history of strabismus, amblyopia or head trauma.

At the first visit an orthophoria was noted with overacting inferior oblique muscles on ocular version testing (Figure 1A). We were unable to perform binocular vision tests at this visit. Anterior segment and fundus examination was normal. Cycloplegic refraction was +3.50 in each eye. After 1 week, the patient was seen again. The patient had an esotropia of the left eye of 20° with a clear V-pattern and overacting inferior oblique muscles (Figure 1B). He was treated with 2 hours patching of right eye and full refractive correction of the hyperopia. Bimonthly examinations for the next 8 months revealed the same results and the decision to perform surgery were made.

A 5.5 mm bilateral medial recession (BMR) with recession of both inferior oblique muscles was performed. Follow up examination 4 months postoperatively showed that the cyclic pattern and the bilateral over elevation in adduction and V-pattern resolved. Uncorrected visual acuity was 20/125 in both eyes, improving to 20/25 with refraction (+3.00 spheres bilateral). The patient had an esotropia of the left eye of 12 prism dioptri (pd) with hyperopic correction and 15 pd without correction at all distances (Figure 1C). Fusion was demonstrated at near on Worth 4-dot testing, and the patient achieved 400 seconds of arc of stereopsis on Titmus stereo test. The patient was followed for 18 months, and there were no significant clinical changes.

Discussion

Cyclic strabismus differs from typical intermittent strabismus in that a significant heterophoria is not present during the orthotropic phase [4]. The etiology and pathogenesis of this rare form of strabismus are unknown [1-3]. However, it is rarely associated with optic atrophy, trauma, strabismus surgery, retinal detachment surgery, or central nervous system disease [7,9-11].

Cyclic esotropia has typically spontaneous onset with an average age of 3 to 4 years. The cyclic nature of the strabismus may last from a few weeks to years [4]. The binocularity is usually defective on the strabismic days; in contrast it remains normal during the straight days [12]. Binocular vision is not absolutely necessary because the disorder has also been reported in patients with monocular blindness [5,10,13]. Bilateral over-elevation in adduction and V-pattern are common in cyclic esotropia [14]. Surgery is almost always curative for the condition, however, recurrence of cyclic esotropia and consecutive cyclic exotropia after surgical correction have been reported [2,11,15,16].

We present a well-documented case who was treated with bilateral medial rectus recession and recession of both inferior oblique muscles for cyclic esotropia. After surgery, fusion was present and, the V pattern and over elevation in adduction were resolved, but esotropia became constant with smaller angle. Cyclic esotropia is a rare and poorly understood form of strabismus. There is no response to conservative treatment. The cycles may become irregular in time until the deviation becomes constant. Although successful results of surgery have been highlighted in the literature, surgical correction for cyclic esotropia may not correct the problem and may result in constant esotropia.

***Corresponding author:** Kadriye Erkan Turan, Department of Ophthalmology, Hacettepe University Faculty of Medicine, Ankara, Turkey, Tel: 90-312-3053133, Fax: 90-312-3094101; E-mail: kadriyerkan@gmail.com

Received September 25, 2014; **Accepted** December 10, 2014; **Published** December 12, 2014

Citation: Turan KE, Sekeroglu HT, Sanac AS (2014) Constant Deviation in a Child after Surgery for Cyclic Esotropia. J Clin Case Rep 4: 467. doi:10.4172/2165-7920.1000467

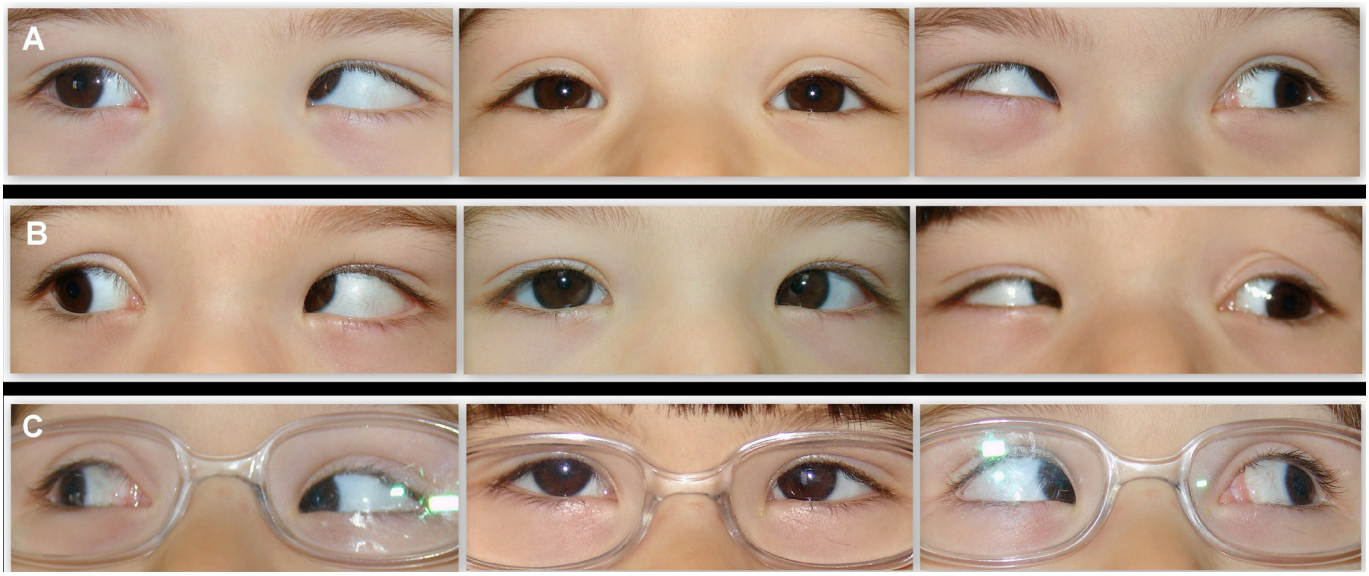

Figure 1: Orthophoria with bilateral over elevation in adduction on a straight day (A), left esotropia with bilateral over elevation in adduction on a strabismic day (B), left esotropia 4 months after surgery.

References

1. Costenbader FD, Mousel DK (1964) Cyclic esotropia. Arch Ophthalmol 71: 180-181.
2. Helveston EM (1973) Cyclic strabismus. Am Orthopt J 23: 48-51.
3. Richter CP (1968) Clock-mechanism esotropia in children. Alternate-day squint. Johns Hopkins Med J 122: 218-223.
4. Di Meo A, Costagliola C, Della Corte M, Romano A, Foria C, et al. (2013) Adult-onset cyclic esotropia: a case report. Optom Vis Sci 90: e95-98.
5. Riordan-Eva P, Vickers SF, McCarry B, Lee JP (1993) Cyclic strabismus without binocular function. J Pediatr Ophthalmol Strabismus 30: 106-108.
6. Murthy R, Hegde S (2009) Acquired cyclic exotropia and hypotropia. J AAPOS 13: 312-314.
7. Pillai P, Dhand UK (1987) Cyclic esotropia with central nervous system disease: report of two cases. J Pediatr Ophthalmol Strabismus 24: 237-241.
8. Post J, Eidsness RB, Romanchuk KG (2007) Consecutive exotropia following surgically corrected cyclic esotropia. Am Orthopt J 57: 107-110.
9. Cole MD, Hay A, Eagling EM (1988) Cyclic esotropia in a patient with unilateral traumatic aphakia: case report. Br J Ophthalmol 72: 305-308.
10. Hutcheson KA, Lambert SR (1998) Cyclic esotropia after a traumatic sixth nerve palsy in a child. J AAPOS 2: 376-377.
11. Kee C, Hwang JM (2014) Accommodative esotropia decompensated to cyclic esotropia in a 6-year-old boy. J AAPOS 18: 77-78.
12. Lee JY, Seok S, Oh SY (2014) A case of cyclic esotropia with menstrual cycle. Acta Ophthalmol 92: e246-247.
13. Frenkel RE, Brodsky MC, Spoor TC (1986) Adult-onset cyclic esotropia and optic atrophy. J Clin Neuroophthalmol 6: 27-30.
14. Pott JW, Godts D, Kerkhof DB, de Faber JT (2004) Cyclic esotropia and the treatment of over-elevation in adduction and V-pattern. Br J Ophthalmol 88: 66-68.
15. Cahill M, Walsh J, McAleer A (1999) Recurrence of cyclic esotropia after surgical correction. J AAPOS 3: 379-380.
16. Garg SJ, Archer SM (2007) Consecutive cyclic exotropia after surgery for adult-onset cyclic esotropia. J AAPOS 11: 412-413.