Complete IOL Dislocation in a Strabismic Pediatric Patient

Abstract
A thirteen-year-old African American male with a history of esotropia and a congenital cataract presents with a complete dislocation of an intra-ocular lens implant. Treatment with soft contact lenses and polycarbonate spectacle lenses is initiated.

Case History
On July 30, 2012 a thirteen year-old African American male presented to The Eye Institute with a chief complaint of constant blur in his right eye at both distance and near. He reports that print is too small to read and he uses a magnifying glass to see letters. He also reports mild itching in both eyes most mornings. Additionally, his mother indicates he suffers from frequent headaches.

The patient’s ocular history is positive for a left esotropia that presented as an infant. At the age of eighteen months the patient was diagnosed with a congenital cataract in his left eye, which was removed when the patient was two years of age without complications. His mother reports that doctors wanted to have the patient wear contact lenses at that time. However, this was unsuccessful.

The patient’s last eye exam was approximately seven years ago at a local hospital for children. According to his mother, no glasses were prescribed. She reports the doctor recommended the patient undergo strabismus surgery, but it was never scheduled.

The patient was born full term weighing 6lbs 12oz. He met expected developmental milestones and his medical history is remarkable only for seasonal allergies. He is otherwise in good health, not taking any medications, and has no allergies to any medications.

Pertinent Findings
The patient's entering visual acuities were OD 20/25-3, OS 20/600 at distance, and OD 20/20 and OS worse than 20/400 at near. The cover test was unable to be performed because the patient was unable to pick up fixation with his left eye. Hirschberg indicated a large angle esotropia estimated at 30-35 prism diopters via the Krimsky method. Pupils were equal round and reactive to light with no APD. Confrontation fields were full to finger count OU and versions were full. Color vision was 7/7 plates using Ishihara OD, and OS was unable to be tested.

Subjective refraction revealed OD +4.25 -1.00 x 180 (20/20-2), OS +14.75sph (20/300-3 single letter). The patient was unable to subjectively appreciate large lens changes. Objective refraction after dilation with two drops of tropicamide 1% revealed OD +5.50-1.25x180 and OS +10.50-2.50x015.
Ocular health evaluation revealed a mild papillae response in the inferior conjunctiva OU. The patient had visible fibrotic tissue posterior to his iris OS in addition to a small corneal scar inferior temporal OS. Intraocular pressures via NCT were OD 21mmHg and OS 20mmHg. All other ocular health findings were unremarkable. However, clear images of the peripheral retina in the left eye were very limited due to the patient’s refractive error.

**Differential Diagnosis**
Primary differential diagnosis included uncorrected aphakia and form-deprivation amblyopia. The patient’s mother could not recall details of previous treatment so an additional differential diagnosis was intra-ocular lens subluxation.

**Diagnosis**
At this examination the patient was diagnosed with moderate hyperopia and regular WTR astigmatism OD; high hyperopia secondary to aphakia with regular WTR astigmatism OS; form-deprivation amblyopia OS; and mild allergic conjunctivitis OU.

**Treatment/Management**
Extensive education to the patient and his mother was completed regarding the need for corrective eyewear for both vision improvement and protection. Spherical contact lenses were prescribed in addition to a spectacle prescription to correct the patient’s astigmatism (OD Plano -1.00 x 180 and OS Plano -2.50 x 010). Polycarbonate lenses were prescribed for the protection of the phakic eye. A final prescription for a back-up of pair of glasses will be given once the contact lens prescription is finalized. Alaway was recommended to relieve the mild allergic conjunctivitis. The patient was scheduled to return to the clinic in three weeks for a medically necessary contact lens fitting.

Records were obtained from the local children’s hospital, where the patient had been seen seven years before. The records showed that a surgical procedure was completed without complications in November of 2003 to insert an IOL. The patient was also examined again in 2005 and the records note that the IOL was centered but the VA was reduced.

The patient returned on August 30, 2012 for his contact lens fitting after approval for medically necessary contact lenses had been attained from the patient’s insurance company. Trial lenses (OD Proclear 8.6/14.2 +4.50sph and OS Proclear 8.6/14.2 +11.00sph) were inserted. Unfortunately the patient did not remember to bring his glasses with him to the appointment. Visual acuities with the contact lenses only were OD 20/25+2 and OS 20/400 (single letter). With contact lens correction the large angle esotropia was significantly reduced to approximately 10-15 prism diopters determined by the Krimsky method. The contact lenses were well centered and had good movement in both eyes, with reports of good comfort from the patient. The patient was taught how to insert and remove his lenses and proper lens care and hygiene. He was given Opti-Free Replenish to clean and store his lenses. He was asked to return to the clinic for...
a contact lens follow-up in two weeks and was re-educated about the importance of wearing the prescribed spectacle correction full time over his contact lenses.

At this appointment the patient’s left eye was dilated again. Intraocular pressures were OD 16mmHg and OS 16mmHg. A B-Scan was performed and showed evidence of a refractile object located approximately two disc diameters inferior to the optic nerve. An intact intra-ocular lens was located using a 90D lens while the patient was wearing his contact lenses and fixating inferriorly. The patient has been scheduled for a consultation with a retinal specialist to rule out retinal traction and determine if the IOL needs to be removed.

Discussion
The time and cause of this IOL dislocation is unknown. Due to the dense amblyopia in the left eye, the patient was unaware of any significant visual change. The patient denies any trauma. Trauma is an obvious cause to late IOL dislocation. A literature search revealed two cases of late IOL dislocations resulting from whole body vibration on an exercise machine (1). In a study consisting of 45 eyes with late dislocation risk factors identified include pseudoexfoliation in 30 eyes (66.66%), uveitis in one eye
(2.22%) and a long axial length in one eye (2.22%). In that study no identifiable risk factors were noted in 14 eyes (31.11%) (2).

Once the patient has the optimal optical correction in the distance with a combination of spectacles and contact lenses, it is the intention of the author to begin amblyopia therapy. This patient has previously not undergone any amblyopia therapy. A study completed by PEDIG suggests improvement in visual acuities in amblyopic children that are over the age of twelve is possible if the individual has not previously been treated (3).

Conclusions
Careful evaluation of aphakic patients with poor recollection of treatment history must be completed to rule out IOL dislocation. This case illustrates the importance of annual dilated eye exams for pseudophakic patients. Standard of care dictates that these patients be in polycarbonate protective spectacle lenses at all times. Finally, this case also indicates that patients with accommodative or partially accommodative esotropia should be fully corrected in order to improve alignment and visual acuity.

Reference List