



# Manifest nystagmus in children with monocular congenital cataract

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## Purpose

- To investigate the associations between monocular congenital cataract and bilateral manifest nystagmus.

## Introduction

- Manifest nystagmus is a common feature in children with bilateral infantile cataracts. Additionally, some children with monocular congenital cataract develop bilateral manifest nystagmus
- It is unclear whether timing of surgery, implanting a primary IOL vs contact lens, or compliance with patching have an effect on the development of nystagmus in monocular cataract patients
- Presence of post-operative nystagmus is a predictor for poor visual acuity in patients after bilateral infantile cataract surgery

## Methods

- Institutional Review Board approval was obtained
- Review of surgical logs (1993-2014) for unilateral cataract surgery in the first year of life and minimum follow-up 6months or to 1 year of age
- Children with identifiable syndromes associated with nystagmus were noted but excluded from analysis
- Visual acuity was measured by means of age-appropriate tests and converted to logMAR
- Patching was prescribed 50% of waking hours, or approximately 1 hour per day per month of age, up to a maximum of 6-8 hours per day
  - Compliance with patching was defined as meeting at least 50% of the time prescribed during the first year following surgery
- Patients were divided into those with or without manifest nystagmus
- Variables studied included age at surgery, type of cataract, compliance with patching, additional surgical interventions, visual acuity measures and strabismus, and incidence of other findings affecting corneal clarity including early aphakic glaucoma and secondary membranes

## Results

- 101 patients were identified, 2 were excluded for limited follow up and 2 due to syndromes (trisomy 21, metabolic seizure disorder)
- 97 patient were included for analysis in this study
- 14/97 infants (14%) with monocular cataract developed manifest nystagmus
  - Anomalous head posture was observed in 7 children

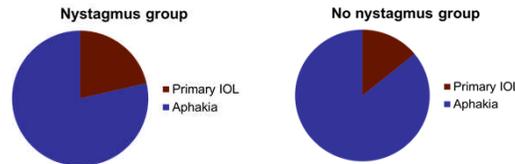
## Results

- Age at surgery\*:** \*No statistical difference between groups

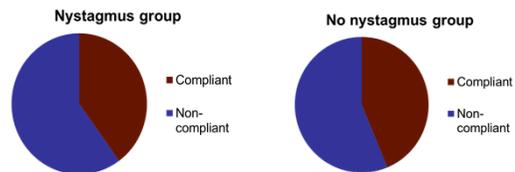
	Nystagmus (N=14)	No nystagmus (N=83)
Mean (± SD)	73 (± 82)	108 (± 98)
Median	37 (30-67)	59 (30-200)

- Correction of Aphakia\***

- 82/97 had contact lens correction within one week of surgery, 15 had primary IOL implantation



- Compliance with Patching\* (n=90)**



- Final recognition visual acuity measure in operated eye\* (n=73)**

	20/40 or better	20/50 – 20/200	>20/200
Nystagmus (N=14)	-	4 (28.5%)	10 (71.4%)
No nystagmus (N=59)	6 (10.1%)	22 (37.2%)	31 (52.5%)

- Compliance with patching was not associated with presence of nystagmus, but the mean final vision in the operated eye was better in patients compliant with patching vs those who were not compliant (p<0.0001)**

	Compliant (N=49)	Non-compliant (N=41)	p-value
Recognition			
Mean (± SD)	0.75 (± 0.45)	1.74 (± 0.86)	p < 0.0001

- Other:**

- In the nystagmus group, 8 out of 14 (57%) had Persistent Fetal Vasculature (PFV) compared to 30 of 83 (36%) in the no nystagmus group
- There was no statistical difference in rates of glaucoma, re-operations, strabismus between nystagmus and no nystagmus groups

## Discussion

Nystagmus is well-known finding in patients with bilateral infantile cataract, and occurs in about 35% or more of patients regardless of timing of surgery.<sup>1</sup> The presence of postoperative nystagmus in patients with bilateral infantile cataracts is associated with lower final best-corrected visual acuity.<sup>2,3</sup>

In this series, we found that 14% of children with monocular congenital cataract developed manifest nystagmus, and explored possible causes and associations with nystagmus in the cohort. In contrast to bilateral cataract patients, there was no statistically significant association based on timing of surgery or other eye characteristics. Adherence to occlusion therapy during the first year following cataract extraction was not significantly correlated to the development of nystagmus post operatively, which was reassuring given the amount of occlusion required to obtain good final vision in the operated eye.<sup>4,5</sup> To this point, however, we note that compliance was found to be significantly associated with better final recognition visual acuity in the operated eye, independent of age at surgery, without contributing to a decline in the final acuity of the non-operated eye (results not shown).

In the Infant Aphakia Treatment Study, a large cohort of children operated for congenital unilateral cataract, nystagmus and saccadic oscillations in either eye were assessed at age 5 years by eye movement recordings.<sup>6</sup> Nystagmus was reported in 36% of those with contact lens correction and 39% of those with primary IOL implantation. We analyzed only children with bilateral manifest nystagmus, which accounts for the lower incidence, but also found no difference based on mode of refractive correction (contact lens vs primary IOL).

## Conclusion

Some infants with monocular cataracts developed bilateral manifest nystagmus, which is not attributable to excessive patching or other identifiable factors.

## References

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