

2nd GLOBAL PEDIATRIC OPHTHALMOLOGY CONGRESS

June 05-06, 2017 Milan, Italy



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Vision and eye issues in children with Down syndrome

Statement of the Problem: Eye findings in children with Down syndrome (DS) approach is 100% with conditions requiring management occurring in >50% of this population. Poor vision interferes with quality of life; this is perhaps more critical in patients with other developmental delays, whom often are more dependent on their vision for daily functioning. The ophthalmologic diseases seen in children with DS with increasing frequency include nasolacrimal duct obstruction, high refractive error, strabismus, poor accommodation, optic nerve anomalies, congenital and acquired cataract and nystagmus.

Purpose: Since the year 2000, greater than 800 unique DS patients have been seen in the Department of Ophthalmology at Boston Children's Hospital by about 20 providers. We have retrospectively reviewed many of the ophthalmologic issues that our patients are diagnosed and treated for to look at outcomes in an attempt to establish best practices including surgical treatment of nasolacrimal duct obstructions, causes of nystagmus, treatment of surgical esotropia, and optic nerve anomalies.

Findings: 44/371 DS patients with a diagnosis of nasolacrimal duct obstruction underwent surgery with a 70% success rate compared to 90% of those without DS. 138/806 patients had a diagnosis of nystagmus and 26/138 had neuroimaging, which found no progressive neurological processes. Regarding surgical treatment of esotropia, 37 patients underwent strabismus surgery, 46% having an A pattern esotropia with total treatment success of 76%. In our pediatric DS population, 116/808 patients had an optic nerve anomaly; none of those with elevated or pale nerves had a life or vision-threatening pathology either clinically or by neuroimaging.

Conclusion: Ophthalmologic findings in pediatric DS patients are extensive and warrant treatment that may differ from the non-DS population. This is a review of many of the known diseases but with recommendations on management based on our experience at a large tertiary ophthalmology department.

Biography

Danielle M Ledoux is a Pediatric Ophthalmologist, specializing in management of pediatric patients with a diagnosis of Down syndrome. She has been working at the Boston Children's Hospital - Harvard University since 2007. In 2015, she completed her specialization in Pediatric Eye Care, a practice of pediatric ophthalmology and optometry in Massachusetts, USA. She has participated in significant numbers of studies both prospective and retrospective with special interest in those that pertain to the population of people with a diagnosis of Down syndrome. She also serves as a Consultant for the National Down Syndrome Society, an American non-profit organization dedicated to support of people and families as well as education of the public about Down syndrome.

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