

Outcomes of Cataract Surgery in Children with Down Syndrome

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Dear Editor,

Down syndrome is the most common chromosomal abnormality, occurring in up to 1/1000 live births.^[1] These patients have a higher incidence of childhood cataract than general population.^[2] While early studies have found unfavorable responses to cataract surgery,^[3] recent literature has described successful outcomes.^[4] Data regarding the long-term outcomes in pediatric cataract surgery in Down syndrome is limited,^[4,5] and our study, therefore, looks at the outcomes in these patients.

Our study included 13 patients (19 eyes; 8 male/5 female subjects). Average age at diagnosis was 19.5 ± 49.7 months (range, 0.067 to 181 months); average age at surgery was 28.6 ± 54.7 months (range, 0.5 to 181 months). Average follow-up duration was 60.5 ± 25.2 months (range, 19 to 108 months). Four patients were Caucasian and 9 Hispanic.

Fifteen of 19 eyes were left aphakic (average age at surgery, 13.9 ± 11.2 months), with secondary intraocular lenses (IOLs) placed in four patients later. Four patients underwent cataract extraction with posterior-chamber IOLs (three with primary posterior capsulotomy and one without) at an average age of 59.0 ± 81.1 months. No surgical complications occurred.

Preoperative visual acuity was evaluated using fix-and-follow techniques in 12/13 (92.3%) patients. At the last follow-up, 3/13 (23.1%) were able to undergo visual acuity assessment; the remaining 10/13 were assessed with fix-and-follow techniques. Complications included visually significant visual axis opacification in one eye (5.3%) at 57 months postoperatively, and glaucoma in two eyes (10.5%),

occurring 1 and 12 months postoperatively. Eight of the 13 patients (61.5%) had nystagmus. Seven of the 13 patients (53.8%) received treatment for bilateral (two) and unilateral (five) amblyopia. Four of the 13 (30.8%) developed esotropia.

Twelve of the 13 (92.3%) had congenital heart comorbidities. In four, these comorbidities delayed cataract extraction surgery to accommodate cardiac surgery or recovery from cardiac surgery; cardiovascular anesthesia was required in four patients. Two patients required postoperative admission because of desaturation after anesthesia. Simultaneous bilateral cataract surgery was performed in one patient to limit the risks of anesthesia because of congenital heart comorbidity.

Our study is limited by its small sample size, retrospective nature, variable follow-up durations in some patients, inability to document vision in non-verbal patients, and the lack of a control group for comparison.

In conclusion, we found that cataract extraction in pediatric patients with Down syndrome does not appear to have a higher rate of surgical complications than does cataract surgery in the general pediatric population. Strabismus has been reported to occur in 38% and nystagmus in 18-30% of patients with Down syndrome.^[2] Because nystagmus and strabismus occur at a high frequency in such patients independent of other ocular conditions, the relationship between the presence of these conditions and cataracts can be difficult to determine. Evaluation and management of amblyopia may be limited by the ability to assess visual acuity, even after the patients reach school age. Congenital heart comorbidities may complicate surgical planning or necessitate accommodations to limit the risks of surgery and general anesthesia.

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Conflicts of Interest

There are no conflicts of interest.

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