

News in Review

COMMENTARY AND PERSPECTIVES

Contacts vs. IOLs for Congenital Cataract

The verdict is in on the issue of optical correction in children who undergo unilateral cataract surgery before age 7 months: Aphakia, corrected with a contact lens, is a better option than an

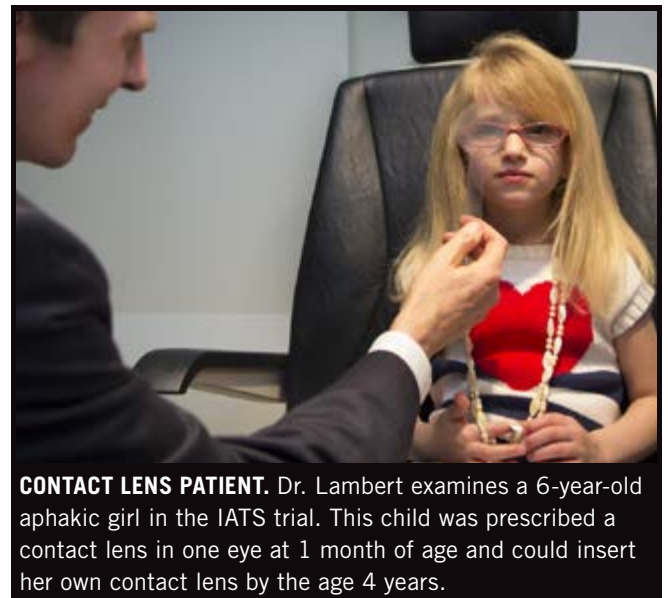
intraocular lens (IOL) for most of these babies.

“Primary IOL implantation should be reserved for those infants where, in the opinion of the surgeon, the cost and handling of a contact lens would be so burdensome as to result in significant periods of uncorrected aphakia,” stated the investigators in the Infant Aphakia Treatment Study.¹

Comparable VA. This multicenter randomized clinical trial determined that, at age 4.5 years, visual outcomes were equivalent between 57 aphakic children whose cataract was removed at age 1 to 6 months and

55 others who received an IOL implant (median VA in both groups, 0.90 logMAR [20/159]).

More complications. However, a significantly greater number of the pseudophakic eyes required one or more additional intraoperative procedures over the course of the study (41 patients compared with 12 in the aphakic group; $p < .001$), the researchers found. At least one adverse event had occurred in a significantly greater number of IOL eyes (46 patients compared with 31 in the aphakic group; $p < .02$). Lens proliferation and pu-



CONTACT LENS PATIENT. Dr. Lambert examines a 6-year-old aphakic girl in the IATS trial. This child was prescribed a contact lens in one eye at 1 month of age and could insert her own contact lens by the age 4 years.

pillary membranes occurred 10 times more often in the pseudophakic eyes.

Scott R. Lambert, MD, a professor of ophthalmology at Emory University in Atlanta and the lead investigator in the trial, credited advocacy by the pediatric ophthalmology community for the National Eye Institute (NEI) decision nearly a decade ago to support the study, despite the rarity of congenital cataract.

Long-term outlook. “These children may have

one normal eye. But the thing about children is that they’re going to live for a very long time, and it is important for them to have the best possible visual acuity in their problem eye,” he said, particularly in case anything should happen to their other eye.

About half of the children in both groups had visual acuity at age 4.5 years of 20/200 or worse. But the study also demonstrated the potential for excellent visual outcomes, he added.

“The very best child in our study ended up with 20/12 vision in both eyes and normal depth perception,” Dr. Lambert noted. “I really think that this child’s life is going to be different than if he were blind in one eye. It creates a lot of opportunities in life that would not other-

wise be available.”

Dr. Lambert said the investigators now are examining their data to determine which children with IOLs are most likely to develop complications later in life, such as glaucoma or retinal detachment—problems that comprehensive ophthalmol-

ogists might be called on to treat in the future.

“We know that an IOL puts them at increased risk of having glaucoma if they had cataract surgery when they were young,” he said. “So these patients will need ongoing eye care the rest of their lives, to be sure that

their eyes are doing well.”

—Linda Roach

1 The Infant Aphakia Treatment Study Group. *JAMA Ophthalmol*. 2014 March 6. [Epub ahead of print].

Dr. Lambert reports no related financial interests.

Cornea Caveats

Dangers of Steroids in Misdiagnosed Keratitis

The first cohort study optimized to examine the impact of topical corticosteroids on visual outcomes from *Acanthamoeba* keratitis (AK) reported that steroid use before diagnosis of AK is not only widespread but also highly detrimental to patients with this relatively uncommon disease.¹

Study details. A chart review identified 196 patients diagnosed with AK at Moorfields Eye Hospital, London, between January 1991 and April 2012. Of these, 22 were excluded for missing data, leaving 174 patients available for analysis. Half of the patients (87) had used topical steroids before the diagnosis of AK.

The primary outcome measure was a suboptimal visual outcome, defined as a final best-available visual acuity of 20/80 or worse (recorded after completion of therapy for AK), corneal perforation, or need for keratoplasty.

Researchers studied steroid use in two ways. First,

in a binary (yes/no) classification, they found that it increased the risk of a suboptimal visual outcome by almost fourfold after adjustment for confounding variables. Second, they classified patients into three categories by duration of steroid use (1-13 days, 14-30 days, and more than 30 days). Given the small sample size in each category, the authors chose not to publish those results in the article, according to first author Dana Robaei, MBBS, MPH, PhD, FRANZCO, at the University of Sydney in Australia. But, she said, more than 30 days of use was associated with an almost eightfold increased risk of a poor visual outcome, compared with 1-13 days (odds ratio, 7.92; confidence interval, 2.0-32.1).

Widespread misdiagnosis. This harmful use of steroids is largely due to initial misdiagnosis of AK as herpes simplex virus (HSV) keratitis. “In our study, 52.3 percent of all patients, the majority of whom were



AK SIGN. The presence of radial perineuritis can aid in the diagnosis of *Acanthamoeba* keratitis.

contact lens wearers, were initially misdiagnosed with HSV keratitis,” she said.

The early clinical signs of AK are highly variable and often appear very similar to HSV keratitis, with epithelial irregularity and dendritiform lesions. Pain often—but not always—accompanies early AK, and a lack of pain can mislead clinicians toward an HSV diagnosis. Moreover, long-term contact lens wear is associated with reduced corneal sensation, which also may be incorrectly ascribed to HSV. Finally, photophobia is associated with both HSV keratitis and AK.

“AK is an unusual cause of microbial keratitis, and general ophthalmologists seldom encounter it,” said Dr. Robaei. “Diagnosis often relies on ancillary techniques, such as confocal microscopy and PCR [polymerase chain reaction],

which are not available in all practices or centers, exacerbating diagnostic delay.”

Further impacting the outcomes—even after accurate diagnosis is finally made—the treatment of AK requires compounded anti-amoebic drugs that are not immediately available in smaller centers.

“Comprehensivists confronted with indolent keratitis should consider referring the patient to a cornea specialist, who has the resources and expertise in managing unusual microbial keratitis that’s unresponsive to standard treatment,” Dr. Robaei advised.

Key takeaways. “Our study highlights the critical importance of 1) having a high index of suspicion for AK in contact lens wearers, particularly before making a diagnosis of HSV keratitis, and in non-contact lens users who have a persistent keratitis; and 2) the need for judicious use of topical corticosteroids when the possibility of AK has not been definitively ruled out,” said Dr. Robaei.

—Gabrielle Weiner

1 Robaei D et al. *Ophthalmology*. 2014 March 17. [Epub ahead of print].

Dr. Robaei reports no related financial interests.

Uveitis Therapy

Chlorambucil & Remission In Sympathetic Ophthalmia

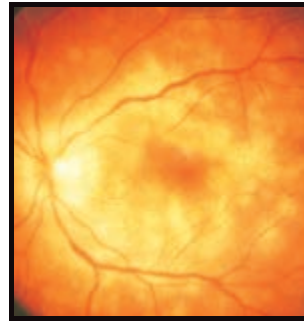
Short-term, high-dose chlorambucil prolongs drug-free remissions for patients with sympathetic ophthalmia, according to a study conducted in Chicago and Buenos Aires.¹ Lead author Debra A. Goldstein, MD, director of Northwestern University's uveitis service, further reported that no systemic malignancies occurred among the 16 patients treated with the drug, although one patient developed conjunctival Kaposi sarcoma.

The patients were given chlorambucil for a median of 14 weeks (mean, 14.5 weeks; range, 12-19 weeks), and the median follow-up was 98.5 months (mean, 139.1 months; range, 48-

441 months). Chlorambucil controlled inflammation in all patients, 13 of whom (81.3 percent) maintained vision of 20/40 or better in the sympathizing eye.

After stopping systemic therapy, four patients relapsed at a median of 83 months (mean, 131 months). Topical treatment alone controlled 75 percent of these relapses, which consisted of only mild anterior chamber inflammation.

"Long-term, drug-free remission of sympathetic ophthalmia has not been reported with corticosteroid therapy or other nonalkylator-based treatments," Dr. Goldstein said. "In contrast, short-term, high-dose chlorambucil may result in



SYMPATHETIC OPHTHALMIA. Peripapillary and multifocal choroiditis with exudative retinal detachment.

true disease remission that persists when all therapy has been discontinued."

The advantages of chlorambucil must be weighed against the risks. "Certainly, the risk of malignancy is the most worrisome, although its occurrence is rare," she said, adding that although this study did not find an increased risk of malignancy with the high-dose, short-term protocol, the possibility must always be considered.

"The development of profound neutropenia and

thrombocytopenia are also worrisome and, unfortunately, not rare. Chlorambucil also carries the risk of sterility, which is important to discuss with younger patients." However, she noted, the drug is well tolerated subjectively, with little or no fatigue, nausea, or other bothersome symptoms.

"We know that in sympathetic ophthalmia, as in other forms of uveitis, outcomes are better with earlier diagnosis and aggressive therapy," Dr. Goldstein added. "It is always discouraging to see a patient with potentially blinding posterior segment disease who has been managed for months or years with topical therapy only. Early consultation with a specialist may help to improve outcomes."

—Marianne Doran

1 Patel SS et al. *Ophthalmology*. 2014;121(2):596-602.

Dr. Goldstein reports no related financial interests.

Neuro News

Driving With Hemianopia

Researchers at Schepens Eye Research Institute used a driving simulator to compare the head scanning behaviors of 14 drivers with complete homonymous hemianopia (HH) against 12 normally sighted (control) drivers when approaching intersections.¹ They also evaluated the ability of drivers to detect pedestrians on the right or left side at certain intersections.

Drivers with HH showed compensatory head scanning by usually scanning first to the blind side. They also scanned more often toward that side than control drivers did. However, they sometimes completely failed to scan toward the blind side, said lead author Alex Bowers, PhD, assistant scientist at Schepens.

The magnitude of their head scans also tended to be smaller than those of

normally sighted drivers. "Failure to scan sufficiently far into the blind hemifield could be due to a lack of cues from peripheral vision on that side," she said.

Due to inadequate scanning (either failing to scan or not scanning far enough), drivers with left hemianopia detected only 46 percent, and drivers with right hemianopia detected only 8 percent, of blind-side pedestrians at the extreme left and right of the intersection, respectively.

These results point to an area of potential concern, said Dr. Bowers. However, this and other studies have

made another important finding: Drivers with complete HH may have the same amount of visual field loss, yet differ greatly in their ability to compensate by scanning and to detect potential hazards on their blind side. That's why referring people with hemianopia for individualized driving assessments and training is essential, she said. —Annie Stuart

1 Bowers AR et al. *Invest Ophthalmol Vis Sci*. 2014;55(3):1540-1548.

Dr. Bowers reports no related financial interests.