

# Is Spectacle Independence Achievable?

BY CHARLES S. AHN, MD; ROBERT B. MILLER, MD; AND FARRELL "TOBY" TYSON, MD

*A patient in his mid-50s presents with a unilateral cataract and a refraction of  $-5.00 +1.00 \times 180$ . The fellow eye is pseudophakic with a refraction of  $-3.00 +4.00 \times 180$ . The patient tells you that his previous surgeon, who has retired, told him he would be able to achieve spectacle independence when the time came for the second cataract procedure. How would you handle this situation? Are there general guidelines you use for patients such as this one?*

—Topic prepared by Steven Dewey, MD.

## CHARLES S. AHN, MD

The challenge with this patient is meeting the expectation of spectacle independence set by the previous surgeon. Because the patient has already undergone cataract surgery on his first eye with a significant refractive error, my approach would be to address the surgical options for correction in both eyes for modified monovision.

Surgical options for the correction of the residual ametropia in his first eye can be considered after the source of the astigmatism is identified. I would need to determine if the cylinder were from the cornea or possibly a displaced IOL. If the cylinder is entirely corneal, the surgical options for treatment include an IOL exchange with a toric lens or laser refractive surgery on the cornea.

My approach to the second eye with a cataract would also be to determine the source of astigmatism. Assuming that the astigmatism is from the cornea, there are several different options for surgical correction. They include conventional limbal relaxing incisions (LRIs) made with a diamond blade, LRIs created with a femtosecond laser, a toric IOL, or laser vision correction. I would recommend either laser LRIs or a toric IOL.

I believe this patient's best chance for spectacle independence is to address the refractive error of both eyes

by leaving the first eye slightly myopic for modified monovision.

## ROBERT B. MILLER, MD

There is a key piece of information missing that would considerably affect my approach. I would like to know if this is a patient who is happy with his previous surgeon or if this is a patient who is angry at how badly his vision has been "damaged." I will assume that he is generally a friendly patient who is sorry that his previous surgeon retired.

Judging by the refraction of the pseudophakic eye, this patient is tolerating large amounts of cylinder and clearly is not overly demanding. Thus, the approach to the second eye with the cataract should be simple—a standard temporal approach with a nontoric IOL. Parenthetically, a slightly elongated, grooved incision at  $180^\circ$  might leave the eye almost spherical.

The question is whether to aim for emmetropia or slight myopia (about  $-1.50$  to  $-2.00$  D) to help with spectacle independence. The surgeon could best determine the answer by first addressing the high astigmatism of the pseudophakic eye and then having a discussion with the patient to determine the desired endpoint for the second eye.

To correct the cylinder in the first eye, one might consider incisional astigmatic keratotomy, which would

leave the patient a bit more hyperopic than the spherical equivalent of the current refraction (-1.00 D) and thus almost emmetropic. A correction of 4.00 D by astigmatic keratotomy, however, is a tall order, and I would choose either PRK or LASIK to give a more predictable result. Both keratometry and pachymetry information is necessary. Alternatively, a piggyback toric IOL could be considered and would require a round-edged (sulcus-designed) toric lens.

I suspect that successful management can keep this patient happy.

### **FARRELL "TOBY" TYSON, MD**

I would first explain to the patient that there is no such thing as spectacle independence and that I am unable to give any cataract patient the vision of perfect 18-year-old eyes. Some individuals with certain ocular characteristics can have a greater degree of freedom from glasses. At this point, however, I would educate the patient on what astigmatism is and how it is treated. I would let him know that, because one eye already underwent cataract surgery, the selection of IOLs for the second eye is limited. Multifocal IOLs would not be an option, because they work best when implanted bilaterally in eyes with little to no astigmatism.

I would recommend a staged treatment strategy. First, I would address the phakic eye to get the patient more functional and less dependent on glasses. I would recommend a Crystalens AO (Bausch + Lomb) for his phakic eye with either an LRI with a diamond blade or a femtosecond laser to provide the patient with good distance and intermediate vision in one eye. Next, I would offer laser refractive surgery on the pseudophakic eye with a goal of distance or, maybe with informed consent, a little mini-monovision. ■

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