Reply: Congenital iris coloboma repair with excision of colobomatous sphincter muscle.

I recently published a technique for repairing congenital iris colobomas during or after cataract surgery. Kataria and Agarwal described a method to do cataract surgery in the setting of congenital iris coloboma whereas specifically not treating the coloboma.

I prefer an iris repair approach for the following reasons: (1) It addresses the existing anatomic abnormality while keeping the rest of the cataract surgery essentially unchanged. (2) It maintains 2.2 mm as the largest surgical incision. (3) The IOL optic aligns with the optical center of the cornea. (4) The posterior capsule is left in place with no need for vitrectomy (unless there is a sizeable lens coloboma through which vitreous presents). (5) The long-term safety and efficacy of in-the-bag posterior chamber IOL is well established with a massive planetary denominator of cases. (6) A fairly normal iris appearance is created.

The case described by Kataria and Agarwal is certainly an option for this condition if the resources are not available for iris repair as described. Their technique has a few drawbacks besides the potential for creating coma, the disadvantage they indicated in their letter: (1) In the United States, aphakic-power iris-claw IOLs are not available. (2) Iris-claw IOLs have a notable rate of endothelial cell loss regardless of whether they are anterior or posterior to the iris, and patients needing cataract surgery with concomitant iris coloboma are generally in the younger half of the adult population, so concerns of late corneal decompensation arise. (3) A 5.5 mm incision is required for placement of an iris-claw IOL compared with the 2.2 mm incision described in the original article. Wound strength goes down, and astigmatism induction goes up as wound size doubling of this magnitude occurs. (4) Patients do not have the option of astigmatism-correcting IOLs (or other advanced IOL options) when an iris-claw IOL is used. (5) Iris coloboma not pharmacologically (or physically) enlarged is often small and very centered enough that the effective pupil could still be centered in the optic of the iris-claw IOL or even have IOL optic edge exposed in the pupil. (6) These cases are uncommon enough that a small potential decrease in surgical time with this iris-claw approach is hard to use as justification for not repairing the coloboma.

In summary, if it is not possible to offer a patient the iris coloboma repair described in the original technique article and aphakic iris-claw IOLs are available, then the technique described by Kataria and Agarwal may be on one’s list of alternatives.

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Comment on: Comparison of surgical repositioning rates and outcomes for hydrophilic vs hydrophobic single-piece acrylic toric IOLs

We discussed the article by Haripriya et al. comparing surgical repositioning rates between the AcrySof hydrophobic and Auroflex hydrophobic monofocal intraocular lenses (IOLs), as part of the ESCRS Eye Journal Club.1,2 We congratulate the authors on their work, describing the largest published cohort of patients implanted with hydrophilic toric IOLs. However, we would like to highlight some assumptions made in the study that relate directly to its primary aim (ie, the effect of IOL material on rotational stability) and aspects of methodology that may affect its interpretation.

We would caution against the assumption that the AcrySof SN6AT hydrophobic (Alcon Laboratories, Inc.) and Auroflex FH560 hydrophilic (Aurolab) monofocal toric IOLs differed only in the polarity of the acrylic from which they are manufactured. The hydrophobic IOL has a 13.0 mm overall diameter for all cylindrical and spherical powers with single-arm loop haptics, whereas the hydrophilic IOL has an overall length of 12.0 mm for 18.50 to 30.00 diopter (D) models and 12.5 mm for 10.00 to 18.00 D models with bulkier closed-loop dual haptics. Differences in haptic design and length1 have been shown to independently influence rotational stability of an IOL, which may represent confounding factors between the 2 groups.3,4

The variation in surgical marking techniques prior to toric IOL implantation between studies and within studies is a likely source of error in the evaluation of postoperative rotational stability. Systematic differences in the accuracy of corneal axis marking have been shown between different methods.5 Moreover, it is likely that intersurgeon variability may exist in the accuracy and reproducibility of manual corneal axis markings. Video capture at the conclusion of surgery may distinguish preoperative or intraoperative errors (ie, misalignment due to inaccurate corneal axis marking or errors in IOL alignment) from postoperative IOL rotation.6 In this regard, it is useful to highlight that the study primarily assessed axis misalignment rather than postoperative rotation between the IOL groups.

The large rotational deviation (mean 50.2 degrees and 47.5 degrees for each group undergoing repositioning surgery) is far higher than that in other similar studies, implying that the axis misalignment may be heavily influenced by factors other than postoperative IOL rotation. Moreover, in Table 1, at least 3 individuals had 85 to 90 degrees of axis misalignment, suggesting possible

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confusion between maximum and minimum keratometry values (ie, Kmax and Kmin). The surgical repositioning rate reported (1.5% and 1.8%, respectively) seems low given the degree of misalignment in those who underwent repositioning surgery, considering that surgery was offered for those with more than 15 degrees of misalignment.

If studies presented postoperative IOL misalignment data as a histogram according to the degree of rotation (ie, in the 5-degree bins), this would allow a more objective comparison between studies. Even if criteria for repositioning were standardized across studies, there may be socioeconomic factors that might influence the decision to proceed to surgery; Oshika et al. reported a lower degree of mean axis misalignment (26.4 ± 21.9 degrees) in those undergoing repositioning surgery with the AcrySof monofocal toric IOL, although this is far higher than that is typically reported in the European or U.S. settings.6

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Reply: Comparison of surgical repositioning rates and outcomes for hydrophilic vs hydrophobic single-piece acrylic toric IOLs.

We thank Yusuf et al. for their comments. They have rightfully highlighted that the AcrySof SN6AT hydrophobic (Alcon Laboratories Inc.) and Auroflex FH560 hydrophilic (Aurolab) toric intraocular lenses (IOLs) have different haptic designs and overall length, which may influence rotational stability. Although it would be ideal to compare 2 toric IOLs with identical designs apart from lens material, this is challenging because no single manufacturer made both a hydrophilic and hydrophobic acrylic toric IOL. The lower cost of hydrophilic acrylic toric IOLs makes them accessible to many patients globally who might otherwise be unable to afford the hydrophobic acrylic toric IOLs. Our study demonstrated that the Auroflex toric IOL had a surgical repositioning rate that is comparable with the AcrySof model, which has a widely established record of excellent rotational stability across multiple studies.1,2

We agree that surgical marking technique is critical for accurate toric IOL alignment and that postoperative misalignment could be due to either surgical misalignment or postoperative rotation. Limbal reference points at the 3-, 6-, and 9-o’ clock positions were marked preoperatively for all patients in our study. In addition, digital image–guided marking (VERION, Alcon Laboratories Inc.) was used for most, but not all, of our study patients. Because the same marking protocols were used in both toric IOL groups, this should not have changed the postoperative misalignment rate of one group relative to the other. An earlier study of toric IOL rotational stability by one of us (D.F.C.) was the first to use digital image–guided marking in 100% of eyes.1 The AcrySof toric IOL surgical repositioning rate was 1.6%, which was comparable with the 1.9% rate in this study.

Repositioning surgery was recommended if patients had more than 15 degrees of misalignment with significant residual astigmatism. The mean degree of toric IOL misalignment was 45.85 degrees and 44.52 degrees for those where repositioning was recommended and 50.2 degrees and 47.5 degrees for those who underwent repositioning surgery. Because only a small cohort of eyes underwent surgical repositioning, a few eyes with very large amounts of rotation can skew the mean. Oshika et al. reported a mean misalignment of 33 degrees that was reduced to 9 degrees after surgical toric IOL repositioning in their multicenter study.3 The AcrySof toric IOL mean misalignment was 26 degrees in a subsequent multicenter study by Oshika et al.1 Because some patients declined or were not offered surgical repositioning, they acknowledged that their repositioning rate underestimated the true toric IOL misalignment rate, which they did not report. By contrast, we reported both the