Commentary: Decision-making in the management of surgical aphakia

According to the 2015–2019 survey by the National Programme for Control of Blindness and Visual Impairment, uncorrected aphakia accounts for 1.7% of blindness and vision impairment in adults aged >50 years in India. Anisometropia, aniseikonia, prismatic distortion of images (jack-in-the-box phenomenon) and the weight of high hyperopic spectacles demands rehabilitation in surgical aphakia with an intraocular lens (IOL) implantation. IOLs provide a better field of vision and less image disparity, and are more acceptable cosmetically. The standard of care of in-the-bag implantation of an IOL, may not be feasible in circumstances where there is a lack of posterior capsular support. Such instances are not uncommon in a regular cataract surgeon’s practice. Further recourse depends on the presence or absence of sulcus support. While, in the presence of an adequate sulcus support, a foldable 3-piece or a rigid polymethyl methacrylate (PMMA) IOL is preferred, in its absence, the choice of IOL fixation depends on the surgeon’s expertise.

We congratulate the authors for summarizing the desired options for aphakia management by the anterior and posterior segment surgeons, in their study "Preferred practice patterns in Aphakia management in adults in India - A Survey". Although this study elaborates on the preferred site of IOL fixation being the iris and scleral-fixated IOLs by anterior and posterior segment surgeons, respectively, the results cannot be extrapolated to a larger population, considering the minimal response rate (4.8%). The primary indication for secondary IOL, age of the patient at surgery, associated ocular and systemic conditions, level of training of surgeons, and the availability of different types of IOLs should also be considered when such a survey is being conducted.
Optical correction is a critical component of visual rehabilitation in aphakia. There are pros and cons to each of the modalities of IOL fixation. Owing to the higher risk of hyphema, secondary glaucoma and corneal endothelium decompensation, either scleral-fixated or iris-fixated IOLs are being preferred over the use of angle-fixated anterior chamber IOLs nowadays.[5,6] The decision to use iris-fixated or scleral-fixated IOLs depends on the expertise of the surgeon.[4,5] The visual outcome in both types of IOL fixation are comparable at variable follow-up periods, although long-term prospective studies are required to confirm the same.[5,6] Each of these methods have inherent complications associated with them. Iris-fixated IOLs, either anteriorly or posteriorly, are associated with iridokeratoplasty, pigment dispersion, corectopia, hyphema, IOL subluxation, cataractous, chronic macular edema, chronic uveitis and secondary glaucoma.[5,6] In addition to the aforementioned complications, scleral-fixated IOLs, either sutured or suture-less, are associated with vitreous hemorrhage, haptic exposure, retinal detachment, scleral thinning and IOL tilting and/or dislocation.[5,9] As opposed to the in-the-bag IOL and angle-fixated anterior chamber IOL (ACIOL), the procedure for iris-fixated and scleral-fixated IOLs is technically challenging, has a steep learning curve and needs expertise. The long-term stability of the these IOLs as well as complications are yet to be studied prospectively.

Nevertheless, these results cannot be extrapolated to the pediatric aphakic population. Age, size of the eyeball, corneal diameter, primary indication of aphakia, eye growth, systemic associations, and high prediction errors are factors to be considered while planning IOL implantation in children. Primary IOL implantation is usually discouraged in children with small eyes (short axial length/microcornea) and those with associated anterior and posterior segment pathologies. When children reach the appropriate age, and their eyes are of the adequate size with open angles on gonioscopy and have no contraindications, a secondary three-piece IOL or a PMMA IOL in-the-sulcus/ in-the-bag can be planned.[10] When sulcus examination becomes difficult clinically, ultrasound biomicroscopy of the anterior segment can be done. This provides the surgeon with information on the status of ciliary sulcus and its surrounding tissue preoperatively.[10] The vigilance on the postoperative course in children should be high as they are at a risk of excessive postoperative inflammation and rise in intraocular pressure. In specific cases such as ectopia lentis caused by Marfan syndrome, it is preferable to leave the children aphakic and rehabilitate them with contact lenses or spectacles.

Thus, for a customized approach to manage a case of aphakia, weighing the risks and benefits of the procedure is encouraged. Various factors to be considered are age, indications, contraindications, site of IOL fixation, IOL POWER calculation formula, IOL material/designs and expertise in the procedure.

The historic Latin phrase, Primum non nocere, meaning, “First, do no harm,” should be respected, and selected cases should be left aphakic and rehabilitated with contact lenses or spectacles, rather than implant an IOL and cause irreversible damage due to glaucoma, corneal decompensation and retinal detachment.

Goura Chattannavar, Ramesh Kekunnaya
Child Sight Institute, Jasti V Ramanamma Children’s Eye Care Centre, Kallam Anji Reddy Campus, L V Prasad Eye Institute, Hyderabad, Telangana State, India

Correspondence to: Dr. Ramesh Kekunnaya, Director, Child Sight Institute, Jasti V Ramanamma Children’s Eye Care Centre, Kallam Anji Reddy Campus, L. V. Prasad Eye Institute, Hyderabad - 500 034, Telangana State, India. E-mail: rameshak@lvpei.org

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