

## Commentary: Cataract surgery in retinitis pigmentosa

Retinitis pigmentosa is a group of inherited retinal degenerative diseases resulting from photoreceptor cell death. According to the literature, over 1.5 million individuals suffer from retinitis pigmentosa globally.<sup>[1]</sup> The complicated cataract formation is most likely the result of retinitis pigmentosa-related inflammation response. The most common morphologic category is the posterior subcapsular cataract.<sup>[2]</sup> Phacoemulsification with intraocular lens (IOL) implantation remains the most preferred method to manage cataracts.

The incidence of intraoperative and postoperative complications following cataract-IOL surgery is higher in retinitis pigmentosa cases. These include intraoperative phototoxic retinal damage, posterior capsular opacification,

capsular contraction syndrome, pseudophakic cystoid macular edema, increased postoperative intraocular pressure, and capsular bag-intraocular lens dislocation. Therefore, a close follow-up is mandatory in these cases to detect and treat postoperative sequelae. It is important to explain in details about the possibility of aforementioned complications. *An informed consent should be taken from each and every case of retinitis pigmentosa undergoing cataract-IOL surgery. These patients should be explained that cataract-IOL surgery will be helpful to improve central vision. The night vision or peripheral vision will not be improved after cataract-IOL surgery.*

Various authors have published their experience of cataract surgery and intraocular lens implantation in retinitis pigmentosa cases. In a retrospective study published in the current issue of the *Indian Journal of Ophthalmology*, Chatterjee and associates<sup>[3]</sup> evaluated visual outcomes of cataract surgery in patients with retinitis pigmentosa. This retrospective case series includes

a review of the medical records of all patients with retinitis pigmentosa undergoing cataract surgery between 2005 and 2018. The primary outcome measure was corrected distance visual acuity and improvement in vision after surgery. Of the 103 (132) patients, 60 (58.3%) were males and 43 (41.7%) were females. The mean age of the study population was  $51.3 \pm 11.3$  (22–74) years. The mean symptom duration was  $35.4 \pm 44.5$  (1–300) months. The most common morphology of cataracts was a combination of nuclear sclerosis and posterior subcapsular and cortical cataracts ( $n = 65$  eyes, 49.3%). Phacoemulsification (87 eyes, 65.9%) was the preferred surgical technique. The mean preoperative corrected distant visual acuity of  $1.21 \pm 0.87$  log MAR units improved significantly ( $P < 0.001$ ) to  $0.60 \pm 0.56$  log MAR units after surgery. The number of *blind* patients reduced from 27 (26.2%) to 8 (7.8%) patients. Zonular dialysis and posterior capsule tear were seen in six (4.5%) eyes each. Good preoperative vision (odds ratio: 6.1 [95% confidence interval: 2.9–13.0],  $P < 0.0001$ ) was associated with better outcome, whereas reduced central macular thickness (odds ratio: 3.5 [95% confidence interval: 1.3–9.2],  $P = 0.011$ ) was associated with poor outcome. The authors concluded a considerable number of patients presented with advanced cataracts and severe vision impairment. Significant improvement in visual acuity and alleviation of vision impairment was seen after surgery, with few complications. Good preoperative visual acuity predicted a good outcome, whereas macular thinning predicted a poor outcome.

Cataract remains one of the important causes of a decrease in the central vision in retinitis pigmentosa cases. Management of cataracts in these cases can be done by small-incision cataract surgery (SICS), phacoemulsification, and/or Femtosecond laser-assisted cataract surgery (FLACS). *It will be interesting to compare the outcome of phacoemulsification and phaco-FLACS for complicated cataracts of retinitis pigmentosa.* FLACS has the advantage of creating a larger (predetermined) capsulorhexis to minimize capsule contraction syndrome.

Use of anterior capsule polishing and capsule tension ring (CTR) may be helpful to minimize capsule contraction syndrome and delayed dislocation of IOL-capsular bag complex. The surgeon should aim to create 5.5 to 6 mm anterior capsulorhexis and a small capsulorhexis (5 or less) should be avoided. In addition to retinitis pigmentosa, anterior capsular phimosis may also be seen in diabetes mellitus, uveitis, pseudoexfoliation syndrome, high myopia, and elderly patients. Significant anterior capsular phimosis should be treated promptly by creating radial Nd: YAG laser capsulotomies.

Posterior capsular opacification occurs postoperatively in almost every retinitis pigmentosa eye after cataract-IOL surgery. The incidence in most studies is 100% at 6 months postoperatively. The incidence of posterior capsular opacification varies according to the type of lens implanted. Hydrophobic lenses with a square edge (such as AcrySof, Alcon Laboratories, Fort Worth, TX, USA) tend to create less fibrosis and less incidence of posterior capsule opacification. Subluxation of the intraocular lens is not an uncommon complication postoperatively and complete dislocation of the capsular bag-IOL complex is also reported. Silicon lenses are more likely to be dislocated especially if early Nd:YAG laser capsulotomy is required.<sup>[4]</sup> Cystoid macular

edema is also a common complication of cataract surgery in retinitis pigmentosa eyes. Corticosteroid eye drop, as well as NSAIDs (such as bromfenac or nepafenac eye drop), should be recommended postoperatively to help protect from cystoid macular edema. Intracameral injection of preservative-free triamcinolone (0.05 ml/2 mg, Aurolab, Aurolab, Madurai, India) can be considered to minimize postoperative inflammation and macular edema.

*In summary, the long-term sequela of ocular inflammation plays a role in disease progression in retinitis pigmentosa patients. Main cataract-IOL surgery-related complications include posterior capsule opacification, phimosis of anterior capsular opening, cystoid macular edema, and subluxation or dislocation of IOL-capsular bag complex. Therefore, it is important to explain about these sequelae before scheduling cataract-IOL surgery. A regular follow-up of these cases is must to detect these adverse outcomes. Use of a large size capsulorhexis (about 6 mm), capsular tension ring (CTR), and prolonged use of NSAIDs eye drops (for 2 months) may be helpful to minimize the postoperative complications after cataract-IOL surgery.*

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## References

- Hartong DT, Berson EL, Dryja TP. Retinitis pigmentosa. *Lancet* 2006;368:1795-809.
- Fishman GA, Anderson RJ, Lourenco P. Prevalence of posterior subcapsular lens opacities in patients with retinitis pigmentosa. *Br J Ophthalmol* 1985;69:263-6.
- Chatterjee S, Agrawal D, Agrawal D, Parchand SM, Sahu A. Cataract surgery in retinitis pigmentosa. *Indian J Ophthalmol* 2021;69:1753-7.
- Tuft SJ, Talks SJ. Delayed dislocation of foldable plate-haptic silicone lenses after Nd: YAG laser anterior capsulotomy. *Am J Ophthalmol* 1998;126:586-8.

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