ORİJİNAL ARAŞTIRMA ORIGINAL RESEARCH

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Comparison of the Results of Retropupillary Iris Claw Lenses and Scleral Fixated Intraocular Lenses in Aphakic Patients

Afak Hastalarda Retropupiller İris Kıskaçlı Lens ile Skleral Fiksasyonlu Göz İçi Lens İmplantasyonu Sonuçlarının Karşılaştırılması

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ABSTRACT Objective: The aim of the study was to compare outcomes following the use of retropupillary iris-claw lenses (ICLs) and scleral fixated intraocular lenses (SFIOLs) in aphakic patients after cataract surgery. **Material and Methods:** Nineteen eyes with secondary lens implantation were included in this study. The best corrected visual acuity (BCVA) was measured preoperatively. The anterior segment was evaluated using slit lamp biomicroscopy and dilated fundus examination was performed. Intraocular pressure (IOP) was measured. Central macular thickness (CMT) was determined with the RTVue-100® Fourier-Domain Optical Coherence Tomography (Optovue Inc, Fremont, USA). Endothelial cell count was evaluated using CellChek XL® specular microscopy (Konan Medical, Hyogo, Japan). The measurements were repeated in the first week, first month, and at three months, postoperatively. **Results:** Sixty-three per cent of the study participants were men, with a mean age was 68.11 years. A statistically significant difference was not observed between the two groups with regard to BCVA and IOP. The increase in CMT in the first week and first month was statistically significant in the group in whom retropupillary ICL were implanted. Endothelial cell loss was 9.77±3.93% in the retropupillary ICL group and 6.51±4.74% in the SFIOL group. One patient in each group developed an epiretinal membrane. Cystoid macular edema (CME) was detected in one patient who underwent retropupillary ICL implantation. **Conclusion:** Both retropupillary ICL and SFIOL implantation were found to be successful and safe in aphakic patients. A statistically significant difference was not observed between the two groups regarding endothelial cell loss over short-term follow-up. An increase in CMT was detected early period in the retropupillary ICL cases.

Keywords: Aphakia, postcataract; corneal endothelial cell loss; lens implantation, intraocular; macular edema

ÖZET Amaç: Katarakt cerrahisi sonrası afak hastalarda retropupiller iris kıskaçlı lens (İKL) ile skleral fiksasyonlu göz içi lens implantasyonu (SFGİL) sonuçlarını karşılaştırmak. **Gereç ve Yöntemler:** Sekonder lens implantasyonu yapılan 19 göz çalışmaya alındı.Tüm hastaların preoperatif düzeltilmiş en iyi görme keskinliği (DEİGK) ölçüldü. Yarıklı lamba biyomikroskopi ile ön segment değerlendirildi ve dilate fundus muayeneleri yapıldı. Goldman aplanasyon tonometri ile göz içi basınçları (GİB) ölçüldü. RTVue-100® Fourier-domain optik koherens tomografi (OKT) ile santral makula kalınlığı ölçüldü (Optovue Inc, Fremont, USA). CellChek XL® speküler mikroskopi ile endotel hücre sayıları değerlendirildi (Konan Medical, Hyogo, Japan). Tüm ölçümler postoperatif 1. hafta, 1. ay ve 3. ayda tekrarlandı. **Bulgular**: Olguların %63'ü erkekti. Yaş ortalaması 68,11 yıl idi. İki grup arasında DEİGK ve GİB ölçümlerinde istatistiksel olarak anlamlı farklılık saptanmadı. Retropupiller İKL implante edilen grupta santral makula kalınlığında 1. hafta ve 1. ayda istatistiksel olarak anlamlı artış saptandı. Retropupiller İKL implante edilen grupta ortalama endotel hücre kaybı %9,77±3,93 iken SFGİL implante edilen grupta ise endotel hücre kaybı %6,51±4,74 tespit edildi. Her iki gruptan birer olguda epiretinal membran (ERM) gelişti. Retropupiller İKL implante edilen bir olguda ise kistoid makula ödemi (KMÖ) saptandı. **Sonuç:** Yeterli kapsül desteği olmayan afak hastalarda hem retropupiller İKL hem de SFGİL implantasyonu başarılı ve güvenlidir. Kısa dönem takiplerinde endotel hücre kaybı açısından iki grup arasında anlamlı fark bulunmadı. Retropupiller İKL implante edilen olgularda erken dönemde santral makula kalınlığının arttığı anlaşıldı.

Anahtar Kelimeler: Afaki, katarakt sonrası; korneanın endotel hücre kaybı; lens implantasyonu, göz içi; makula ödemi

Cataract is the most common cause of preventable blindness worldwide. Intraocular lens (IOL) implantation is perhaps the most accepted and effective surgical method following cataract extraction.[1] Considerable improvement has been made in IOL types and designs between Ridley's first implantation in 1949 and those today, and IOL implantation has become routine practice in the rehabilitation of aphakia following cataract extraction.

Intraocular lens implantation into the capsule after cataract surgery is the ideal situation; in cases where it cannot be provided, with adequate capsular support, sulcus-supported lens implantation into the posterior chamber is performed. In cases with inadequate or no posterior capsular support anterior chamber angle-supported IOL (AC-IOL) implantation, scleral fixation of posterior chamber IOLs (PC-IOLs), and implantation of iris-claw lenses (ICLs) into the anterior chamber or retropupillary implantation methods can be used. Although there are advantages and disadvantages to each technique, there is no consensus in terms of the indication, safety, and efficacy of IOLs.

Anterior chamber angle-supported lens implantation is fast and safe surgically. However, it is not preferred owing to the fact that it causes endothelial cell loss, bullous keratopathy, secondary glaucoma, and cystoid macular edema (CME) in the long term.[2]

Scleral-fixated lenses are preferred by many physicians. However, since the implantation procedure is technically difficult and the operation time is lengthy, CME, retinal detachment, and ciliary body hemorrhage are serious complications.[3] In addition, transscleral sutures can cause conjunctival erosion, scleromalacia, and endophthalmitis.[4]

ICL implantation anterior to the iris or placed retropupillary, with its relative ease of implantation compared to other methods and its advantage of a shorter operation time, is preferred in vitrectomy and keratoplasty operations.[5-7] The learning period of the surgeon for the enclavation technique is lengthy, requiring skill and dexterity. The number of intraoperative and postoperative complications is relatively lower than other techniques. However, when implanted anterior to the iris, the risks of endothelial cell loss and bullous keratopathy remain.[8] This risk decreases slightly in retropupillary implantation.

The aim of the study was to evaluate patients who had undergone scleral fixation of posterior chamber IOLs and retropupillary ICLs implantation based on visual acuity, intraocular pressure (IOP), central macular thickness (CMT), endothelial cell loss, and postoperative complications.

MATERIAL AND METHODS

Nine eyes of nine patients who underwent secondary SFIOL implantation and 10 eyes of 9 patients who underwent secondary implantation of retropupillary ICLs between January 2013 and January 2015 at Haydarpasa Numune Training and Research Hospital Opthalmology Clinic, Istanbul, Turkey, that were aphakic due to previous cataract surgery, were included in the study. After Instutional Review Board approval, the study was conducted in accordance with the ethical standards of the 1964 Declaration of Helsinki. Informed consent was obtained from the study subjects. The patients were randomly divided into two groups.

The inclusion criteria were:

- Patients who were left aphakic without access to adequate capsular support following cataract surgery.
- Patients with no other intraocular surgery history other than cataract surgery.
- Patients who experienced an increase in visual acuity following aphakic correction.
- Patients with no detectable optic disc pathology.

The exclusion criteria were:

- Patients aged ≤ 18 years.
- Aphakic patients due to a dropped nucleus/IOL.
- Patients who had undergone combined surgery (penetrating keratoplasty and *pars plana* vitrectomy).

- Patients who had undergone IOL exchange.
- Patients with corneal scars.
- Patients with glaucoma.

The best corrected visual acuity (BCVA) of all the patients was measured preoperatively according to the Snellen chart. BCVA was measured again and recorded in the first week and thereafter in the first and third months. For statistical analysis purposes, as defined by Westheimer, the logMAR value was calculated by using the negative logarithm of the decimal representation of the Snellen visual acuity. The anterior segment structures of all cases were evaluated by slit lamp examination and a dilated fundus examination was performed with a 90D lens. IOP was measured by the same researcher using slit lamp biomicroscopy and Goldmann® applanation tonometry for standardization purposes.

Preoperative central macular thickness (CMT) was calculated using RTVue-100® Fourier-Domain Optical Coherence Tomography (OCT) (Optovue Inc., Fremont, USA). This system uses a 840 nm scan beam that is capable of imaging 26 000 A scans/s with a depth resolution of 5 μm and a transverse resolution of 15 μm. After achieving dilation in the patients who were to undergo an operation, the measurements were taken again by the same person using the same device in the first week, and then in the first and third months postoperatively. Each OCT scan was centered on the fovea by providing a central, internal fixation mark. All of the OCT scans showed a signal strength of ≥ 70% of the maximum strength. Layer segmentation errors were not observed. Low-quality scans and those that failed to meet the requirements of the retinal thickness algorithm were excluded. The measurements were repeatedly taken until good quality was achieved. Measurements involving blinking eyes during the scan were also excluded. Each scan was separately analyzed using the automated retinal thickness algorithm to generate retinal thickness values in micrometers. A high-resolution line scan protocol consisting of 12-line scans (512 scans/line) intersecting in the fovea was employed for the OCT.

The endothelial cell count was determined preoperatively in all the cases using CellChek XL® specular microscopy (Konan Medical, Hyogo, Japan). This system captures a photographic field of 0.1 mm^2. After subsequent autoalignment and automated image acquisition, image analysis was performed with the built-in, automated cell-counting software using the default settings. The software uses predefined reference patterns with different cell sizes ("small", "medium", "large" and "extra-large") and defaults to "small" for auto-analysis. The image, which was auto-analyzed, was saved electronically to a database implemented in the CellChek XL® system. Additionally, a manual ("semiautomated") evaluation of all endothelium photographs was performed. Different onboard software editing tools were used, as advised in the instruction manual. An appropriate cell size reference pattern was selected, the area to be analyzed was resized using the autodetection algorithm, and the Center method or Flex-Center method was used for the manual cell counting. The endothelial cell count was determined again in the first week, first month and in the third month postoperatively.

The IOL power of all the cases was calculated according to the Sanders-Retzlaff-Kraff II formula. It was determined that residual myopia would be -0.50 D in aphakic mode using IOLMaster® optical biometry (Zeiss, Oberkochen, Germany). A constant was taken to be 116.8 for the retropupillary ICL implantation, as opposed to the recommended value of 115.0 for the anterior chamber.

SURGICAL TECHNIQUE FOR THE IMPLANTATION OF SCLERAL-FIXATED POSTERIOR CHAMBER INTRAOCULAR LENSES

Following local anesthesia, a fornix-based conjunctival flap incision was made in the upper nasal and inferior temporal quadrants. Bipolar cautery was used for scleral hemostasis. Scleral pockets (1.0-1.5 mm) were created posterior to the surgical limbus and 180° from each other. The anterior chamber maintainer was placed at 5 o'clock. A clear corneal incision was made. Bimanual anterior vitrectomy was performed as re-

quired. 10/0 Prolene suture (PC-9®) (Alcon Laboratories, Fort Worth, USA) was placed in a 26-G insulin needle and inserted in the center of the scleral pocket. The suture was then removed from the anterior chamber with forceps. The same process was repeated on the other side. The sutures were tied to the SFIOL fixation holes (Optima) (optical diameter of 6.5 mm and haptic diameter of 13.5 mm). The corneal incision was expanded to 6 mm and the SFIOL was placed in the sulcus. The sutures were stretched and the IOL centration was maintained. The corneal incision was then sutured with Ethilon® Nylon Suture 10.0 (Ethicon, Cincinnati, UK). The Prolene sutures were subsequently fixated to the sclera and the nodes were embedded in the scleral pockets. The conjunctiva was then closed with 8.0 Vicryl® sutures (Ethicon). Gentamycin 20 mg and dexamethasone 4 mg were injected subconjunctivally.

SURGICAL TECHNIQUE FOR THE IMPLANTATION OF RETROPUPILLARY IRIS-CLAW INTRAOCULAR LENSES

Following local anesthesia, two vertical side port incisions were made at 10 o'clock and 2 o'clock. A clear corneal incision of 5.5 mm was made at 12 o'clock. Bimanual anterior vitrectomy was performed as required. The cohesive viscoelastic material was placed behind the pupillary plane after the administration of an intracamaral injection of carbacol 0.01%. The iris-claw lens, held with Artisan® Implantation Forceps (Ophtec, Groningen, The Netherlands), with the convex side facing down, was pushed into the anterior chamber in the reverse position and rotated therein as haptics at 3 and 9 o'clock, ensuring the centralization of the lens behind the iris plane. The haptics of the lens was raised against the iris plane, making it visible at the back of the iris. It was enclaved mid-peripherally using Artisan® and Artiflex® enclavation needles (Ophtec). This was repeated for the other haptics. The corneal incision was sutured with Ethilon® Nylon Suture 10.0 (Ethicon). The viscoelastic in the anterior chamber was removed. Gentamycin 20 mg and dexamethasone 4 mg were then injected subconjunctivally.

Routine postoperative treatment protocol was followed in all cases and included moxifloxacin plus prednisolone acetate 6×1 for one month. The dose was tapered weekly. Acetazolamide tablets 2×1 were used for the first two days in required cases.

The groups were compared in terms of BCVA, IOP, CMT, and endothelial cell count, and postoperative complications were measured and recorded preoperatively in the first week, and in the first and third months.

STATISTICAL ANALYSIS

Number Cruncher Statistical System® 2007 (NCSS, Kaysville, USA) was used for the statistical analysis. The data were analyzed using descriptive statistical methods (mean, standard deviation, median, frequency, and ratio), as well as the Mann-Whitney U test for a comparison of the parameters between groups without normal distribution. The Friedman test was utilized according to follow-up and the Wilcoxon signed-rank test was employed for pairwise comparisons for intragroup variation. The results were assessed at a confidence interval of 95%. A p-value of ≤ 0.050 signified statistical significance.

RESULTS

Nineteen eyes were included in our study. Twelve of these were men (63%) and seven were women (37%).

The mean age of the study participants was 68.11 years (a range of 48-86 years). Fifty-three per cent (n= 10) of the cases had retropupillary ICLs implanted and 47% (n= 9) had SFIOLs implanted.

A statistically significant difference was not found between the groups regarding the type of surgery used with respect to the preoperative BCVA measurements taken in the first week, and in the first and third months (p= ≥ 0.050) (Figure 1).

BEST CORRECTED VISUAL ACUITY

When compared to the preoperative values, the 0.48±0.30 decrease in BCVA in the first week (p=

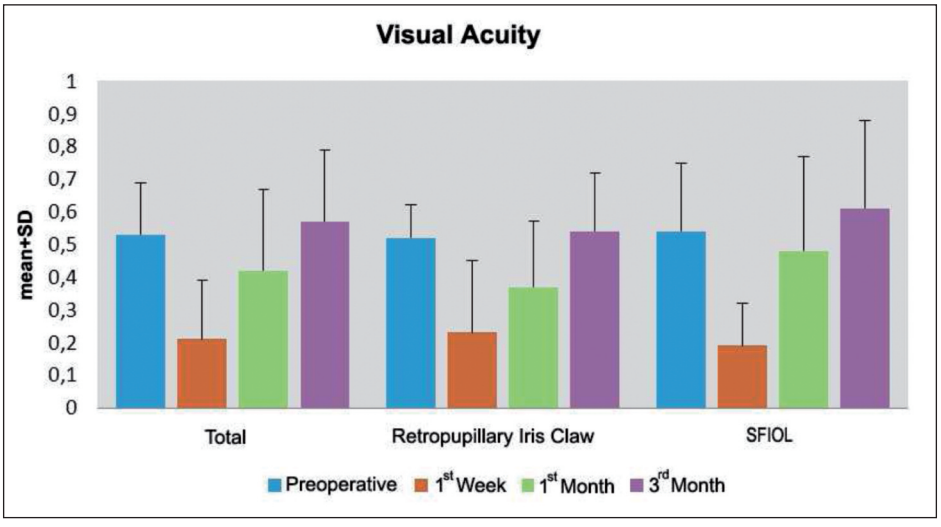

FIGURE 1: The distribution of visual acuity according to the Snellen chart.
SD: Standard deviation; SFIOL: Scleral fixated intraocular lenses.

0.010) and the 0.19±0.20 decrease in the first month (p= 0.024) in the retropupillary ICL group was found to be statistically significant (p= 0.010, p= 0.031, and p= ≤ 0.050). Compared to the preoperative values, the 0.01±0.14 decrease in the third month (p= 0.888) in BCVA was not found to be statistically significant (p= ≥ 0.050) (Table 1).

When compared to the preoperative values, the 0.52±0.24 decrease in BCVA in the first week (p= 0.007) and the 0.11±0.13 decrease in the first month (p= 0.043) in the SFIOL group was found to be statistically significant (p= 0.007, p= 0.043, and p= ≤ 0.050). Compared to the preoperative values, the decrease in the third month (p= 0.058) in BCVA was not found to be statistically significant (p= ≥ 0.050) (Table 1).

INTRAOCULAR PRESSURE

Compared to the preoperative values, the increase in IOP in the first week (p= 0.325), decrease in the first month (p= 0.457), and decrease in the third month (p= 0.942) in the retropupillary ICL group was not found to be statistically significant (p= ≥ 0.050).

Compared to the preoperative values, the decrease in IOP in the first week (p= 0.311), increase in the first month (p= 0.553), and increase in the third month (p= 0.942) in the SFIOL group was not found to be statistically significant (p= ≥ 0.050).

TABLE 1: The findings relating to best corrected visual acuity according to the LogMAR chart and types of surgery used.

	Retropupillary ICLs (n= 10)	SFIOLs (n= 9)	
N= 19	Mean ± SD	Mean ± SD	p-value[a]
Best corrected visual acuity			
Preoperative	0.28±0.08	0.29±0.20	0.932
Week 1	0.77±0.34	0.81±0.32	0.825
Month 1	0.48±0.24	0.41±0.31	0.408
Month 3	0.30±0.16	0.29±0.29	0.422
Pairwise comparisons (preoperatively)			
Week 1	0.010*	0.007**	
Month 1	0.010*	0.043*	
Month 3	0.888	0.715	

ICLs: Iris claw lenses; SD: Standard deviation;
SFIOLs: Scleral fixated intraocular lenses.
[a]Mann-Whitney U test
The Friedman test p-values for retropupillary ICLs and SFIOLs were 0.001** and 0.001**, respectively
*p= ≤ 0.050, **p= ≤ 0.010.

CENTRAL MACULAR THICKNESS

Compared to the preoperative values, the increase in CMT in the first week (p= 0.034) and that in the first month (p= 0.011) in the retropupillary ICL group was found to be statistically significant (p= 0.034, p= 0.011, and p= ≤ 0.050). The increase in the CMT measurement in the third month (p= 0.069) compared to the preoperative measurement

TABLE 2: A comparison of central macular thickness according to the types of surgery used.

	Retropupillary ICLs (n= 9)	SFIOLs (n= 9)	
N= 18	Mean ± SD	Mean ± SD	p-value[a]
Central macular thickness			
Preoperative	228.89±53.63	225.13±57.99	0.962
Week 1	246.56±49.54	227.25±41.55	0.665
Month 1	250.78±40.73	249.62±45.19	0.962
Month 3	272.33±54.28	240.88±38.18	0.248
Pairwise comparisons (preoperatively)			
Week 1	0.034*	0.480	
Month 1	0.011*	0.140	
Month 3	0.070	0.160	

ICLs: Iris claw lenses; SD: Standard deviation;
SFIOLs: Scleral fixated intraocular lenses.
[a]Mann-Whitney U test.
The Friedman test p-values for retropupillary ICLs and SFIOLs were 0.048* and 0.150, respectively.
*p= < 0.050.

TABLE 3: A comparison of endothelial cell count using specular microscopy according to the types of surgery.

	Retropupillary ICLs (n= 10)	SFIOLs (n= 9)	
N= 19	Mean ± SD	Mean ± SD	p-value[a]
Endothelial cell count			
Preoperative	1982.30±473.85	2464.44 ±271.28	0.025*
Week 1	1912.80±463.98	2401.22±269.88	0.022*
Month 1	1857.60±465.27	2360.89±253.64	0.025*
Month 3	1797.40±485.90	2302.00±262.69	0.022*
Pairwise comparisons (preoperatively)			
Week 1	0.005**	0.008**	
Month 1	0.005**	0.011*	
Month 3	0.005**	0.008**	

ICLs: Iris claw lenses; SD: Standard deviation;
SFIOLs: Scleral fixated intraocular lenses.
[a]Mann-Whitney U test.
The Friedman test p-values for retropupillary ICLs and SFIOLs were 0.001** and 0.001**, respectively.
*p= < 0.050, **p= ≤ 0.010.

was not found to be statistically significant (p= ≥ 0.050) (Table 2).

Compared to the preoperative values, the changes in CMT in the first week and in the first and third months in the SFIOL group were not found to be statistically significant (p= ≥ 0.05) (Table 2).

ENDOTHELIAL CELL COUNT

Compared to the preoperative values, the 69.50± 42.75 decrease in the endothelial cell count in the first week (p= 0.005), 124.70±46.62 decrease in the first month (p= 0.005), and 184.90±63.43 decrease in the third month (p= 0.005) in the retropupillary ICL group was found to be statistically significant (p= 0.005 and p= ≤ 0.010) (Table 3).

Compared to the preoperative values, the 63.22±43.49 decrease in the endothelial cell count in the first week (p= 0.008), 103.56±91.09 decrease in the first month (p= 0.011), and 162.44±131.60 decrease in the third month (p= 0.008) was found to be statistically significant (p= 0.008, p= 0.011, p= 0.008, and p= ≤ 0.050) (Table 3).

According to the types of surgery used, a statistically significant difference was not found regarding the endothelial cell count values, when compared to the preoperative values, as determined by the change in the endothelial cell count percentage in the third month (p= > 0.050).

Perioperative complications, such as hemorrhage, a drop in IOL, or PC-9 suture breakdown were not observed in any of the cases. Serious complications were also not observed in any of the cases in the early postoperative period.

An epiretinal membrane occurred in one of the SFIOL implantation cases. Surgery was required owing to an epiretinal membrane and related macular edema in one case featuring diabetic retinopathy and retropupillary ICL implantation. CME occurred in another patient who underwent retropupillary ICL implantation. A response was achieved with a single dose of sub-Tenon triamcinolone treatment.

DISCUSSION

SFIOL implantation and retropupillary ICL implantation were compared in the current study. Significant differences between the groups in terms of BCVA, IOP, and endothelial cell loss were not observed. The decrease in the mean BCVA

recorded in both groups in the first week and in the first month was attributed to astigmatism induced by the sutures. The targeted preoperative BCVA was achieved in the third month after the removal of the sutures in the second month. The CMT was found to be higher in the retropupillary ICL group in the first week and in the first month.

The most important criterion for success in studies with secondary IOL implantation was the BCVA being maintained or improved following a comparison of pre- and postoperative BCVA. Targeted postoperative BCVA was achieved with both retropupillary ICL implantation and SFIOL implantation in our study. BCVA was observed to be 0.5 or higher according to the Snellen chart in 67% of the patients in the SFIOL group and in 70% of those in the retropupillary ICL group. A statistically significant difference was not observed between the two groups in terms of postoperative BCVA.

An increase in IOP was not identified in both groups in our study. This may relate to the exclusion of glaucoma patients and complicated cases.

Postoperative endothelial cell loss was noted after anterior segment surgery. Corneal decompensation was not reported in either of the two groups. Preoperative endothelial cell density was 2464±271 cells/mm^2 in patients in whom SFIOLs were implanted, decreasing to 2302±262 cells/mm^2 (an endothelial cell loss of 6.51±4.74%) in the third month postoperatively. Preoperative endothelial cell density was 1982±473 cells/mm^2 in retropupillary ICL cases. However, it was shown to decrease to 1797±485 cells/mm^2 in the third month postoperatively (an endothelial cell loss of 9.77±3.93%). A statistically significant difference between the two groups was not shown by the percentage change in the endothelial cell count (p= 0.102).

Hazar *et al.* reported that mean postoperative endothelial cell loss was 175 cells/mm^2 (7%) in the anterior chamber ICL group, 255 cells/ mm^2 (11%) in the retropupillary ICL group, and 135 cells/mm^2 (6%) in the SFIOL group at the final visit. There was no statistically significant difference between the three groups (p= ≥ 0.050).[9] Endothelial cell loss of 11.9±2.0% was observed in a two-year follow-up of cases with retropupillary ICL implantation in the study by Anbari et al. Gonnerman et al. reported endothelial cell loss of 6% after retropupillary ICL implantation at the final follow-up.[10,11]

Our study is the first to have investigated the change in CMT in secondary SFIOL implantation. Although it is not considered to be a complication, the increase in CMT with OCT after cataract surgery can be as high as 40%.[12] Strong evidence of an association between an increase in asymptomatic CMT and a decrease in visual acuity has been reported.[13] It has been suggested that an increase in CMT is associated with the development of an epiretinal membrane.[14] In our study, the change in CMT in the SFIOL group was not found to be statistically significant. However, an increase in CMT in the retropupillary ICL group was identified in the first week and the first month postoperatively (p= ≤ 0.050). An epiretinal membrane developed in one patient in each group. Acar *et al.* found a significant increase in mean CMT in the third month in 12 ICL implantation cases.[5]

Cystoid macular edema was detected by RTVue-100® Fourier-Domain OCT in the third month postoperatively in one patient who underwent retropupillary ICL implantation. CME was not detected in any of the patients who underwent SFIOL implantation.

The reported complications associated with SFIOL implantation, such as IOL dislocation, suture erosion, endophthalmitis, retinal detachment, choroidal detachment, iris capture, suprachoroidal hemorrhage, and expulsive hemorrhage were not observed in our study.

Desenclavation, pigment dispersion syndrome, pigmentary glaucoma, pupillary block, uveitis, endophthalmitis, and retinal detachment were not observed in the retropupillary ICL patients.

There were several limitations to our study. The exclusion of primary SFIOL implantation or retropupillary ICL implantation, combined surgery cases (*pars plana* vitrectomy and keratoplasty), and IOL exchange cases meant that the number of patients included in the study was lower than it

would have been had these been incorporated. In addition, our evaluation of the early-phase results and the subsequent follow-up was conducted over a short period, with the consequent result that it is possible that only low complication rates were identified. Nevertheless, both retropupillary ICL implantation and SFIOL implantation resulted in good visual outcomes in aphakic patients. Preferences vary according to surgeon experience and the condition of the eye.

Conflict of Interest

Authors declared no conflict of interest or financial support.

Authorship Contributions

Idea/Concept: *Hatice Elvin Yıldız,* ***Design:*** *Hatice Elvin Yıldız,* ***Control/Supervision:*** *Hatice Elvin Yıldız,* ***Data Collection and/or Processing:*** *Rüveyde Bolaç Unculu, Hüseyin Avni Sanisoğlu,* ***Analysis and/or Interpretation:*** *Ece Turan Vural, Emire Bor,* ***Literature Review:*** *Rüveyde Bolaç Unculu,* ***Writing the article:*** *Rüveyde Bolaç Unculu,* ***Critical the Review:*** *Ece Turan Vural,* ***References and Fundings:*** *None.*

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