RESULTS OF REFRACTIVE LENS EXTRACTION WITH EDOF IOL IMPLANTATION IN PATIENTS WITH HIGH MYOPIA AND MYOPIC ASTIGMATISM

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Introduction: Advances in microsurgery have allowed cataract surgery to evolve from removal of the opaque lens to a procedure aimed at achieving the best refractive outcome. As cataract surgery outcomes have improved, the use of surgery as a refractive modality has become popular.

Refractive lens extraction is intended for correcting high-degree ametropias. Another indication is correction of refractive errors in presbyopic patients with a clear lens.

EDOF lenses maintain clear vision at both long and intermediate distances. They are designed to minimize dependence on glasses, but can cause undesirable effects such as glare and halos.

Aim of the Study: To evaluate the results of using EDOF IOLs for the correction of high myopia and myopic astigmatism.

Materials and Methods: The study was conducted at the Ophthalmologic center Eye Microsurgery in Moldova, from January -December 2023. It was a retrospective study examining data from 20 patients (32 eyes) who underwent refractive lens extraction with the implantation of Sifi EDOF IOL. 7 were men and 13 were women, with an average age of 39.05 years ± 8.38.

Inclusion criteria were: age ≥18 years at the time of surgery, high myopia (> -6.00D), and myopic astigmatism, with a clear lens. Exclusion criteria included: irregular astigmatism, keratoconus, diabetic retinopathy, glaucoma, uveitis, ocular infections. Before surgery patients underwent a complete ocular examination: UDVA, CDVA, refractometry, keratometry, slit lamp examination, IOP, endothelial cell count, optical biometry to determine axial length and the dioptric power of the IOL, using the fourth-generation Barrett Universal II formula. The targeted postoperative refraction was emmetropia.

The surgery was performed by phacoemulsification. Postoperatively, patients received topical treatment with Dexatobrom four times a day for one month. Follow-up was conducted at one month. During visit UDVA, CDVA, UIVA, CIVA, autorefractokeratometry, IOP were evaluated.

At the final follow-up visit, all patients were asked about the presence of discomfort when looking at light sources in the evening and their satisfaction with distance and intermediate visual acuity.

Results

Preoperative data:

- Mean UDVA: 0.02 ± 0.01
- Mean CDVA: 0.68 ± 0.25

- Mean autorefractokeratometry: -10.76 ± 3.57 D
- Mean IOP: 15.67 ± 3.29 mmHg
- Mean A-P axis: 27.3 ± 1.64 mm

In 25 eyes, the Sifi Mini Well Toric Ready IOL was implanted. The Sifi Mini Well Ready was implanted in 3 eyes, and the Sifi Mini Well Proxa in 4 eyes.

Postoperative data at 1 month:

- Mean UDVA: 0.7 ± 0.21
- Mean CDVA: 0.77 ± 0.19
- Mean UIVA: 0.62 ± 0.18
- Mean CIVA: 0.8 ± 0.26
- Mean autorefractokeratometry: -0.32 ± 0.69 D
- Mean IOP: 16.31 ± 2.21 mmHg

Evaluation of concomitant ocular pathologies revealed peripheral retinal dystrophy at 18 eyes, mild amblyopia in 14 eyes, severe amblyopia in 2 eyes. Presbyopia was found in 6 eyes, vitreous body destruction in 4 eyes.

At the final follow-up visit, 4 patients reported discomfort when looking at light sources, 18 patients were satisfied with their distance visual acuity, and 17 were satisfied with their intermediate visual acuity.

Conclusion: The EDOF-IOL provides excellent visual outcomes at distance and on intermediate distance. Users also experience a low rate of visual disturbances with this lens.