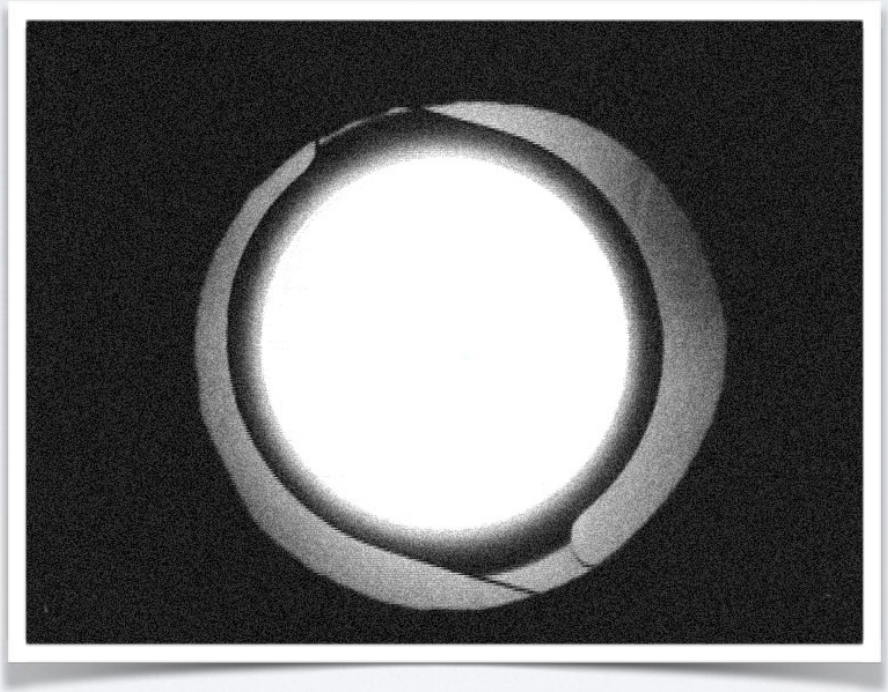
Rotational stability and postoperative refractive results of the PreciSal monofocal intraocular lens



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(AD and SD have no financial interest)

INTRODUCTION

Cataract surgery is among the most common surgical procedures performed nationwide and cataract surgical outcomes significantly impact the patient.

Today there is a wide variety of intraocular lenses (IOLs) to choose from such as Aspheric IOLs, Toric IOLs, Multifocal IOLs and Accommodating IOLs. The best IOL for a patient depends on many factors, including his lifestyle, the specific visual needs and very often his desire of spectacle independence. Ability to achieve target refraction is one of the most important objective that will directly influence the patient's satisfaction.

The aim of this study was to evaluate the rotational stability and the postoperative refractive results of the PreciSal monofocal intraocular lens.

PATIENTS AND METHODS

This prospective clinical study comprised 25 patients with uncomplicated age-related cataract having phacoemulsification at Vision Clinic Center, Geneva, Switzerland. Patients having nuclear or corticonuclear cataracts were included. The following were the exclusion criteria: peroperative complications, subluxated cataract, phacodonesis and pupil dilatation less than 6.0 mm.

Preoperative keratometry and biometry were performed by using the same equipment (Aladdin, Topcon, Tokyo, Japan). Hoffer Q (for axial lengths <22), SRK/T (for axial lengths 24.5–26), and Haigis (for axial lengths >26) were used for calculation of IOL power.

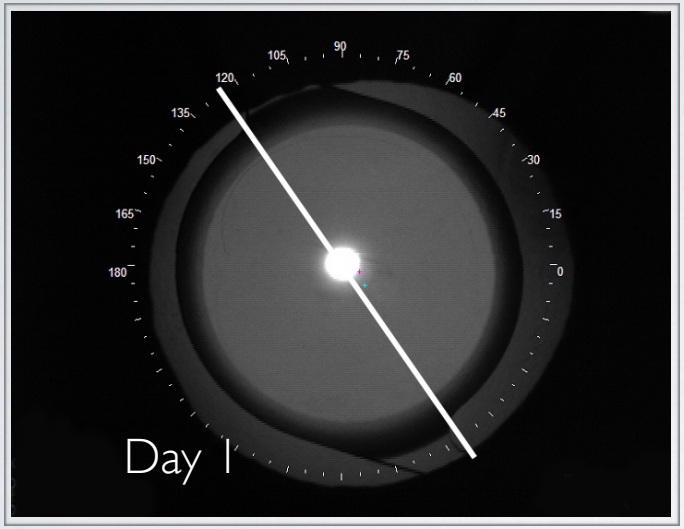
PATIENTS AND METHODS

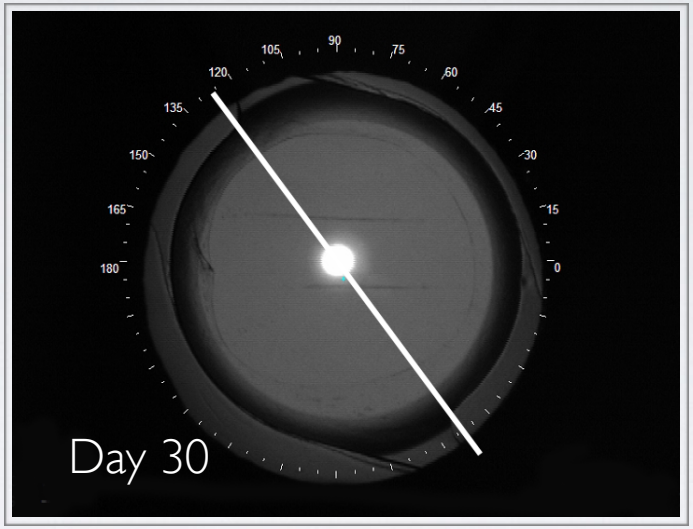
The surgeries were performed by two experienced surgeons (A.D and S.D) using standard sutureless phacoemulsification through a limbal incision. A preloaded hydrophobic monofocal single-piece PreciSal IOL was inserted in the capsular bag through a 2.5 mm incision.

All patients had complete preoperative and postoperative examinations. The one-month postoperative best visual acuity (BCVA) was determined by subjective refraction. Axis of the lens was assessed postoperatively by retroimages using the NIDEK OPD Scan III (NIDEK Co Ldt) at day 1 and day 30.

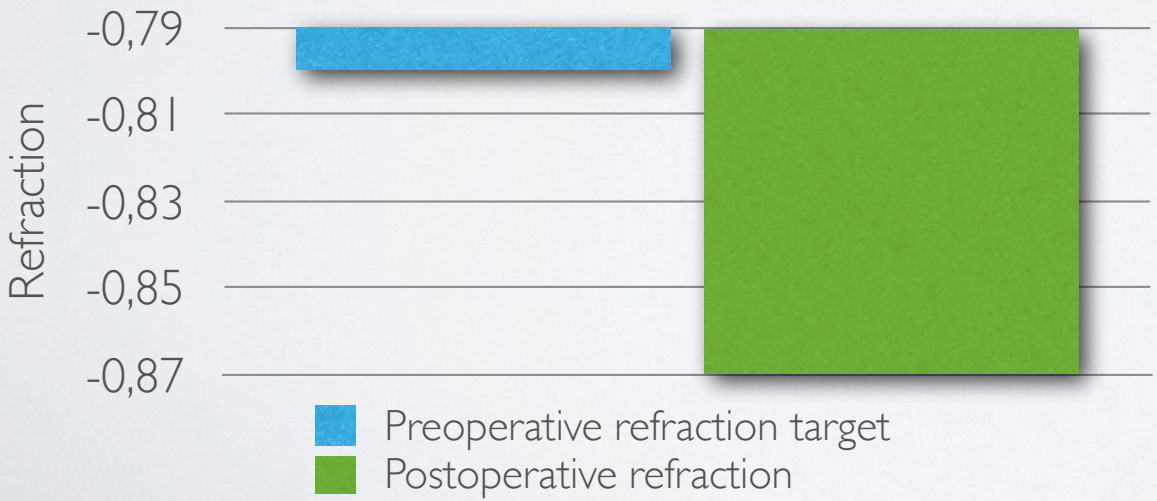
Exemple of a retroimage obtained with the NIDEK OPD Scan III

RESULTS





At final follow-up, the mean rotation of the IOL was 1.2 degrees (range 0 to 3).



The mean preoperative refraction target was -0.80 (range 0 to -3.5) and the postoperative refraction was -0.87 (range 0 to -3.5)
Data analysis of the predictability of postoperative SE in the range of ±0.5D demonstrated that 86% of the eyes implanted with PreciSal lenses were within this range.

DISCUSSION

The literature varies widely in expected outcomes for target refraction after phacoemulsification and IOL placement. Previous studies have revealed outcomes ranging from 77% to 97% of cases achieving <1.0 diopter (D) of target spherical equivalent. *1, 2, 3*
Outcomes for target refraction depends on many factors such as implant power calculation formulas, biometry but also IOL stability and IOL refractive predictability.

Postoperative rotational stability of a toric IOL has a crucial influence on the final visual outcome. In the literature mean IOL misalignment from the target axis varies from 1.1° to 4.5°. *4, 5, 6*

CONCLUSIONS

Success of cataract surgery, and ultimately patient satisfaction, is often assessed by whether there is an improvement in visual acuity, or by whether "expected" vision is similar to "achieved" vision.

Monofocal PreciSal IOL has an excellent postoperative refractive predictability.

Moreover, the aspheric IOL evaluated in the current study provided an excellent rotational stability which seemed to be mainly related to the IOL material (hydrophobic acrylic) and design. Therefore the Toric Monofocal PreciSal is a very good candidate to correct corneal astigmatism in cataract patient. To confirm this feeling, a study is at present in progress.

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