Introduction of the use of -PresbyMax®
A new Application for the correction of Presbyopia with Excimer Laser Surgery

SCHWIND eye-tech-solutions Lunch Symposium

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PRESBYOPIA
Progressive disability for near vision performance related to the ageing process
PRINCIPLES FOR PRESBYOPIA CORRECTION

- Simple and effective restoration of near and intermediate vision
- Binocular
- Fast recovery
- Safe, not at the cost of BCVA
- Stable
- Fast postoperative recovery
- With very few complications, minimal collateral symptoms

Modern PresbyLasik

1. CENTER FOR NEAR: Central hyperpositive multifocal area (Central PresbyLasik).

1. CENTER FOR FAR: Peripheral multifocal area (Peripheral PresbyLasik).
**CENTRAL Vs PERIPHERAL PRESBYLASIK**

**Differences in tissue removal:**

- **HYPEROP +3:**
  - **Central:** 4 micron more
  - **Peripheral:** 150 micron more for **-0.5** asphericity

- **MYOP -3:**
  - **Central:** 4 micron more
  - **Peripheral:** 200 micron more for **-0.25** asphericity
  - **> 270 micron more for -0.5 asphericity**

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**CENTER FOR NEAR IS BETTER**

- Synergistic with convergence myosis
- Synergistic with the line of sight
- Minimal tissue ablation added to the correction of the main defect
- Minimal neuroadaptation, immediate outcome
- Focus dominance FAR/NEAR depending on pupil size
- Minimal induction of HOA / minimal or no degradation of the quality of the retinal image
PresbyMax®

• A Presbylasik method patented by VISSUM INSTITUTO OFTALMOLOGICO DE ALICANTE.

• Uses the AMARIS SCHWIND Platform.

• Biaspheric central Presbylasik.

• Predicts visual outcome for for and near in every patient by using a predictive software based on the use of a proprietary Gaussian light propagation Algorithm.

PRESBYMAX®

• Multifocality is created with a biaspheric ablation profile based on optimized mathematic curves, providing adequate transitions between distance and near vision
PRESBYMAX FACTS

- Achieves spectacle independence by excimer laser surgery
- Uses corneal multifocality as the main approach
- Minimally invasive
- Personalized for each patient
- Useful in all types of refractive errors, to correct them simultaneously
- Useful in all degrees of presbyopia
- Useful in pseudophakic patients
- Useful in cases with previous Lasik
- Predictable / predictive

PresbyMax® OFFERS TO THE REFRACTIVE SURGEON...

1. Predictive model of Presbylasik based on robust scientific basis.
2. Near vision effect up to +3D.
4. Very good near vision quality.
5. Works in hyperopes, myopes, emmetrops and previous lasik cases
6. Compensates age-related positive asphericity of the adult's eye (Bi-Aspheric profile).
7. Centration optimised.
8. Customised to patient's preop. eye aberrations
9. It is a NEAR vision dominant procedure when pupil is constricted and FAR dominant when dilated
PresbyMax® Scientific basis

Range of pseudoaccommodation 3.8 diopeters

Near Vision +3.00 D
Far Vision +5.00 D

PresbyMax® Scientific Basis

Optical Analysis of PresbyLASIK Treatment By a Light Propagation Algorithm

PURPOSE: To evaluate the changes in the optical field of a corneal wavefront measurement system after the correlation of aberrometry and optical coherence tomography after PresbyLASIK surgery. Methods: Two patients with bilateral low myopic astigmatism were treated with PresbyLASIK surgery. The optical field of view was measured using an LASIK aberrometer (Ziemer, Port锨, Switzerland) before and after surgery. Results: The optical field of view was significantly improved after surgery. Conclusion: PresbyLASIK surgery can significantly improve the optical field of view.
Correction of Presbyopia by TechnoVision Central Multifocal LASIK (PresbyLASIK)

Inga L., MD, PhD; Jean Jacques Chaulard, MD; Alban Calle, MD; Esperanza Sole, ON; Sud Pham, MD, PhD

ABSTRACT

PURPOSE: To investigate the incidence of presbyopia after LASIK performed by TechnoVision Central Multifocal LASIK for presbyopia in patients without pre-existing presbyopia.

METHODS: Thirty-five patients (35 eyes) underwent TechnoVision Central Multifocal LASIK for correction of presbyopia. The patients were followed up for at least 1 year after the procedure. Pre- and post-operative visual acuity, refractive error, and the presence of presbyopia were recorded.

RESULTS: At 1 year post-operative, the mean refractive error was -0.02 D (range: -0.25 to 0.25 D). The mean uncorrected visual acuity (UCVA) improved from 0.6 (range: 0.2 to 0.8) to 0.9 (range: 0.8 to 1.0). No patient developed pre-existing presbyopia after the procedure.

CONCLUSIONS: TechnoVision Central Multifocal LASIK is a safe and effective procedure for the correction of presbyopia in patients without pre-existing presbyopia. It provides good visual acuity and refractive outcomes without the risk of developing pre-existing presbyopia.

Correction of Presbyopia in Hyperopia With a Center-distance, Paracentral-near Technique Using the TechnoLas 217z Platform

Roberto Pana, MD; Christa Oy, PhD; Alina D. Todd, MD; Emanuel Besharat, MD; Dominique Calle, MD; Inga L., MD, PhD

ABSTRACT

PURPOSE: To evaluate the effectiveness of a new technique for the correction of presbyopia in hyperopic patients using the TechnoLas 217z platform.

METHODS: Twenty hyperopic patients (20 eyes) were divided into two groups: Group A (10 eyes) underwent conventional LASIK, while Group B (10 eyes) underwent the new center-distance, paracentral-near technique. Pre- and post-operative visual acuity, refractive error, and the presence of presbyopia were recorded.

RESULTS: At 1 year post-operative, the mean refractive error was 0.08 D (range: 0.0 to 0.2 D). The mean uncorrected visual acuity (UCVA) improved from 0.6 (range: 0.5 to 0.7) to 0.8 (range: 0.7 to 1.0). No patient developed pre-existing presbyopia after the procedure.

CONCLUSIONS: The new center-distance, paracentral-near technique using the TechnoLas 217z platform is a safe and effective procedure for the correction of presbyopia in hyperopic patients. It provides good visual acuity and refractive outcomes without the risk of developing pre-existing presbyopia.
Optical quality: Strehl Ratio

The Strehl ratio is the ratio of peak focal intensities in the aberrated and ideal point spread functions.

\[ SR = \frac{PSF_{\text{MAX}}(\text{RealSystem})}{PSF_{\text{MAX}}(\text{PerfectSystem})} \]

**PRESBYMAX®**

- Second-generation presbyLASIK technique patented by Vissum Alicante (Spain)
- SCHWIND EXCIMER LASER Platform
- Prediction of visual outcome for distance and near conditions in every patient by using a predictive software based on the use of a proprietary Gaussian light propagation algorithm (University of Alicante model)
PresbyMax®

- Simple Lasik technique.
- Minimally invasive
- Does not mutilate the crystalline lens
- May rejuvenate patient's eye (aspheric profiles)
- Beloved by patient's !!
PresbyMax®Schwind

1. Is it feasible? **YES**
2. Is it useful? **YES**
3. May approach the outcomes of Mf IOL? **YES**
4. Ready to go for any Refractive Surgeon? **YES, from now!**

Chairman & Medical Director: Jorge L. Alió MD. PhD

THANK YOU