Delivering Improved Outcomes for Today’s Cataract Patient

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Cataract Surgery Outcomes***

- Patient expectations are at an all-time high for refractive surgery
- Positive experiences with LASIK have produced high expectations
  - 92.6% of LASIK patients achieve vision of 20/40 or better*
  - 95.4% of patients were satisfied with their outcome after LASIK surgery**
- Cataract surgery outcomes may not be meeting the target of ±0.5D that is considered the standard

What are the issues that affect hitting the refractive target?

Pre-operative
- Biometry
- Managing astigmatism
- Transcription errors
- Cyclorotation
- Manual marking

Intra and Post Operative
- Rhexis shape and size?
- Posterior corneal astigmatism
- Alignment, centration
- A-constant optimization

Cataract Refractive Diagnostics

Image Guidance

Manual Toric Marking

DISCLOSURE

- Alcon
- ClarVista
- Bausch and Lomb
- Ivantis
- i-Veena
- Kala
- Lifecore
- Mati
- Ocular Therapeutics
- Omeros
- PowerVision
- PRN
- RPS
- Shire
- TearLab
- TearScience
- VisionCare
- WaveTec
Removing Ink From the Entire Process

The Verion™ Image Guided System

Designed to help you consistently achieve your refractive target.

The VERION™ Image Guided System is designed to add greater accuracy and efficiency during surgical planning and execution. Consisting of the VERION-Reference Unit and the VERION-Digital Marker, it is designed to help you perform cataract surgery.

Introducing the VERION™ Image Guidance

IMAGE. PLAN. GUIDE.

VERION™ Reference Unit

VERION™ Microscope Integrated Display

Capturing the Reference Image

Comprehensive Astigmatism Planner

Closing the Loop: Optimization
Digital Marker Guidance

Registration Process at the LenSx® Laser - Digital Marker L

Image Guided System and Centration

MICROSCOPE INTEGRATED DISPLAY

Verion Digital Marker M

Intraoperative Surgical Aberrometry
"Yardstick" to measure Cataract Surgery Success

- Driven by LASIK outcomes
  - Refractive component and Visual Acuity component
  - >95% of outcomes within 0.50 D of nomogram predicted refractive target
  - 90% of eyes achieving UDVA of 20/20 or better
  - <3% enhancement rates expected

Outcomes in Modern Cataract Surgery-Literature

- Narvaez / Stulting JCRS Dec. 2006
  - 46% within 0.50 D of formula predicted target
  - Mean prediction error: 0.52 D +/- 0.44 D
- Gale et al, Eye Aug. 2007
  - 55% of eyes within 0.50 D of formula predicted target
  - 85% of eyes within 1.00 D of formula predicted target
  - Findings considered the benchmark for the NHS in the UK
  - Enhancement Rates on Premium IOL cases (Presbyopic and Toric IOLs)
    - Range from 10% to 35%

Outcomes in Modern Cataract Surgery-Recent Literature

- Andrs Behndig, M.D., Ph.D., et al, J Cataract Refract Surg. (July) 2012 (Swedish National Cataract Registry.)
  - 17,056 procedures
  - Emmetropia (spherical equivalent -0.5 to +0.5D and <1.0 D astigmatism) achieved in 55% of eyes planned for emmetropia.

Conventional IOL Power Determination Approach

- Various characteristics of the eye are measured preoperatively
  - Axial Length
  - Corneal Power
  - Other measurements that may be used (formulae dependent)
    - Anterior Chamber Depth
    - Lens Thickness
    - White to White
  - Formula applied

ORA System™ by WaveTec (Optiwave™ Refractive Analysis)

- Provides intraoperative refractive information
- Attaches to most surgical microscopes for on-demand intraoperative measurements of sphere, cylinder and axis
- Enables real-time surgical course correction
- "Get it right – right on the table" the first time
- Every ORA System connects live to WaveTec servers to capture every procedure and push software upgrades

The ORA System® with VerifEye®

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Overview

- The ORA System® uses wavefront aberrometry data in the measurement and analysis of the refractive power of the eye (i.e. sphere, cylinder, and axis measurements) to support cataract surgical procedures.
- Accounts for contribution of anterior and posterior corneal astigmatism in its measurements.
- Real-time, intraoperative refractometer plus a working algorithm supported by a large clinical database (100k+ cases), and a platform for additional enhancements.

Improve astigmatic outcomes for your patients with real-time intraoperative Validation¹

- Provides streaming refractive information to determine power, cylindrical magnitude and axis, even for post-refractive-procedure eyes.
- Accounts for contribution of anterior and posterior corneal astigmatism in its measurements.
- Reduces risk of residual postoperative astigmatism.

Primary Efficacy Result
Residual Refractive Cylinder at 3 Months

- Anticipated Residual Cylinder based upon Preoperative Calculation

Secondary Efficacy Result
Postoperative MRSE Accuracy at 3 Months

- Improved astigmatic outcomes with VerifEye®

This carefully controlled clinical study confirms that the ORA System® with VerifEye® provides better astigmatic outcomes in cataract surgery.
Improved astigmatic outcomes with VerifEye®

Based on seeing 100 post-op patients per month

53.8% fewer patients were outside the intended target.

Synergism of Guidance with Aberrometry and Femtosecond Cataract Surgery

- Paired with the VERION™ Image Guided System aberrometry provides the opportunity to address potential sources of error at each procedural step imaging, planning, guidance and verification.
- Aberrometry gives you the confidence to effectively treat astigmatism for toric IOL patients.

How I use the systems together

- Toric case
  - Establish initial plan with Verion guidance
  - K’s will help establish initial cylinder power and axis – registration will help identify this axis during surgery
  - Pre-op will supply preliminary spherical power for the toric lens
  - Obtain consistent VerifEye aberrometry aphasis measurements intraoperatively
  - Will provide the actual spherical power of the lens, cylinder power and the target axis of placement
  - Use Verion guidance to locate axis obtained during pre-op
  - Place lens and use VerifEye’s toric pseudophakic aberrometry application to refine axis of placement by rotating as directed

Conclusions

- Aberrometry and Guidance are complimentary
- Using both together results in refined IOL power selection and astigmatic treatment