STATE BOARD OF OPTOMETRY
2450 DEL PASO ROAD, SUITE 105, SACRAMENTO, CA 95834
P (916) 575-7170 F (916) 575-7292 www.optometry .ca.gov

Continuing Education Course Approval Checklist

Title: Improving Cataract Surgery

Provider Name: Batra Vision c/o Ms. Hedy Rodriguez

☑Completed Application
Open to all Optometrists? ☑Yes ☐No
Maintain Record Agreement? ☑Yes ☐No

☑Correct Application Fee

☑Detailed Course Summary

☑Detailed Course Outline

☑PowerPoint and/or other Presentation Materials

☐Advertising (optional)

☑CV for EACH Course Instructor

☑License Verification for Each Course Instructor
Disciplinary History? ☐Yes ☑No

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CONTINUING EDUCATION COURSE APPROVAL APPLICATION

$50 Mandatory Fee

Pursuant to California Code of Regulations (CCR) § 1536, the Board will approve continuing education (CE) courses after receiving the applicable fee, the requested information below and it has been determined that the course meets criteria specified in CCR § 1536(g).

In addition to the information requested below, please attach a copy of the course schedule, a detailed course outline and presentation materials (e.g., PowerPoint presentation). Applications must be submitted 45 days prior to the course presentation date.

Please type or print clearly.

Course Title	**Course Presentation Date**
Improving Cataract Surgery	05/18/2017

Course Provider Contact Information

Provider Name

V. Nicholas (First) Batra (Last) _____ (Middle)

Provider Mailing Address

Street 15051 Hesperian Blvd Ste A **City** San Leandro **State** CA **Zip** 94578

Provider Email Address hadyr@batravision.com

Will the proposed course be open to all California licensed optometrists?	☒ YES ☐ NO
Do you agree to maintain and furnish to the Board and/or attending licensee such records of course content and attendance as the Board requires, for a period of at least three years from the date of course presentation?	☒ YES ☐ NO

Course Instructor Information

Please provide the information below and attach the curriculum vitae for each instructor or lecturer involved in the course. If there are more instructors in the course, please provide the requested information on a separate sheet of paper.

Instructor Name

V. Nicholas (First) Batra (Last) _____ (Middle)

License Number A62852	**License Type** CA - Medical
Phone Number (____) _____	**Email Address** drbatra@batravision.com

I declare under penalty of perjury under the laws of the State of California that all the information submitted on this form and on any accompanying attachments submitted is true and correct.

_____ 4-15-17

Signature of Course Provider ***Date***

Form CE-01, Rev. 5/16

Attention Board of Optometry.

To whom it might concern,

Along with this letter you will find CV's from all three doctors, CE applications, Summaries, Outlines, and Presentation materials. I apologized for the information being a little late but one of the doctors was Out of town and I didn't get his presentation information until much later.

Let me know if you need any other information.

Hedy Rodriguez

Batra Vision Medical Group

hedyr@batravision.com

Increasing expectations (patient/surgeon), right technology at the right time.

Increase accuracy, improve refractive outcomes, reduce enhancements, increase revenue, maximize capacity

WaveTec's Technology , the first registered with the FDA for use in cataract surgery. Introduced to the market April 2009 as the ORange Intraoperative Wavefront Aberrometer. 2011 made changes/ improvements and introduced at AAO 2011 a new aberrometer, 70% of the aberrometer hardware has change.Still utilizes Talbot Moiré interferometry.

ORange is now ORA System™ (Optiwave Refractive Analysis)

ORA System™: Designed to Optimize Every Cataract Procedure

ORA's all new Optiwave™ technology takes intraoperative wavefront aberrometry to a ***new level of precision*** providing surgeons a ***higher level of confidence***

What Makes ORA New: Improved Precision and Accuracy. Enhanced calibration routine – increases accuracy across all powers. New light source – cleaner fringe pattern & improved consistency

Improved optics – less sensitive to decentration. Improved algorithms ELP compensation for Toric lenses.

Desire to improve refractive outcomes of my cataract patients Bar has been raised because of premium IOL cases. With IOL Master alone only 50% are within 0.50D of target

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ORA's all new Optiwave™ technology takes intraoperative wavefront aberrometry to a ***new level of*** *precision* providing surgeons a ***higher level of confidence.***

For more than a decade, femtosecond lasers have helped surgeons perform LASIK with unparalleled precision and accuracy. Now the LenSx Laser brings advance accuracy and reproducibility to catraract surgery.

The technology behind the LenSx laser captures high-resolution images of your eyes. These images yield precise mesurements and data that help the surgeon plan and perform a procedure to exacting specifications. The LenSx Laser system's advanced, three-dimensional imaging helps the surgeon automate and execute the most challenging steps of traditional cataract surgery.

The LenSx Laser is breakthrough technology because it's designed to offer: A bladeless procedure that's personalized to your eyes. Precise, reproducible performance. Enhanced control and efficiency. A customized procesure planned and performed for you by your surgeon.

Improving Cataract Surgery Outcomes using advanced technologies LenSx

V. Nicholas Batra, MD

Cornea, Cataract and Refractive Surgery

Batra Vision Medical Group

San Leandro, CA

Financial Disclosure

I have spoken at CME talks paid for or subsidized by AMO, Allergan, Alcon, Bausch and Lomb and am a consultant to WaveTec

Background

Founder of the Batra Vision Medical Group in San Leandro, CA

Currently comprised of 3 Ophthalmologists and 2 O.D.s

Dartmouth College, AB

UCLA School of Medicine, MD

UCSF, Opthalmology Residency

UCSF/Proctor Foundation, Cornea Fellowship

Cornea, Cataract, and Refractive Surgery

Increasing number of premium lenses

About 40% of patients have an upgraded lens procedure

Cataract Surgery

Has been around for over 2000 years

Started with “couching” in greek and roman times

Progressed to intracapsular surgery then extracapsular surgery, phaco and now with femtosecond surgery

Has turned into a refractive procedure

Changes patient expectations

Current Cataract Removal and IOL Implant Procedure

Manual calculation of astigmatism, degree of vision correction needed, appropriate lens based on pre-op measurements taken through cataract

Remove cataract and insert intraocular lens (IOL)

Perform limbal relaxing incisions (LRI) in cornea to reshape eye & correct astigmatism, if necessary

Determine accuracy of pre-op decisions

Depending on outcome, can then:

Write glasses prescription

Perform secondary procedure

Current Surgery Tools Unable to Support Future Expectations

Historical IOL power formulas have modest success, ~50% within 0.5 diopter (D)

>40% of patients dissatisfied: need glasses or request secondary enhancement surgery

Surgeons bear cost of post-surgery enhancement procedures, which can reduce procedure profit by up to 50%

Patients paying out-of-pocket for premium lenses expect spectacle-free, LASIK-like results

Surgeons need refractive measurement when it matters most – intraoperatively

Use of LenSx improves accuracy and reproduceability

How to improve outcomes?

No one item will improve outcomes to that of LASIK

Electronic Health Records (EHR)

3- D Wave

Meticulous Surgery

ORA

Femtosecond Laser Cataract Surgery (LenSx)

LASIK

Electronic Health Records

Improve the completeness and accuracy of data input and entry for each patient

Make sure that primary care physicians and optometrists are noted in the record

Ease of communication among providers

Document surgical necessity

3-D Wave OPD Scan
Wavefront Aberrometer Topographer
Automatic Refractor Keratometer
Pupillometer

The 3-D Wave combines three advanced

technologies —plus wavefront analysis—in one

easy-to-use refractive diagnostic workstation.

Now, with a single device, you can obtain

refraction, corneal topography, optical path

difference (OPD) and wavefront analysis.

The 3-D Wave allows you to evaluate your

patient comprehensively, perform refractive

and cataract surgery screenings, evaluate

postoperative complaints, and determine

pathology diagnoses. In short, the system gives you

vision diagnostic capabilities

Use in Practice

Every premium cataract patient receives a 3-D Wave prior to having surgery done

Helps with Astigmatism Correction

Wavefront Aberration

Lens selection

Pupil size helps with Restor vs Tecnis vs Crystalens

Use of the 3-D Wave

This patient displays with-the-rule astigmatism on the

standard corneal topography axial map, which indicates 1.5D of cylinder on the cornea. However, looking at the OPD map, which is the measurement of the entire optical system (from the anterior cornea to the retina), the values displayed are spherical. The auto refraction is also spherical. How then can this patient have this much astigmatism on the cornea without affecting his or her vision? ***Only the 3-D Wave subtracts the cornea from the entire eye, leaving the*** internal OPD, including lenticular, posterior cornea, vitreous and retina, which in this case displays approximately 1.5D against-the-rule astigmatism on the crystalline lens. If this patient receives an IOL implant, the surgery itself will unmask the 1.5D of astigmatism on the cornea. Or if for any reason the patient has LASIK surgery, 1.5 D of astigmatism will be unmasked lenticularly. ***The 3-D Wave is the only instrument that can quantify lenticular power to give you the whole picture, including what lies beneath.***

Meticulous Surgery

Good Capsulorhexis

Clean Cataract Removal

Polish Posterior Capsule

Clean off Anterior Capsule

Femtosecond Laser

LenSx with a white cataract

Continuum of Innovation: LenSx® Laser 2012

- ✓ Modified Patient Interface
    - ✓ Narrower cone apex, easier docking
    - ✓ 19.8 mm diameter
- ✓ Software 2.16: Precision, Automation & Flexibility
    - ✓ HD OCT, 2x Resolution
    - ✓ Advanced Automation
    - ✓ Procedure pattern overlays
    - ✓ Supports Bi-Manual technique
    - ✓ Faster overall procedure

Surgical Performance Improvement

Better capsulotomy and lens fragmentation

Product Requirements

The LenSx® SoftFit™ Patient Interface Delivers:

- ✓ Lower IOP
- ✓ Easier docking
- ✓ Patient comfort
    - ✓ Free floating capsulotomy in nearly all cases
    - ✓ Pristine cut edges

A Simple Solution

Proprietary soft contact lens insert

Alcon® LenSx® Laser SoftFit™ Patient Interface

- Current PI Design with extended suction skirt
- Proprietary soft contact lens insert
- Lower IOP – 16 mm Hg increase*
- Simple docking process – better eye control, no fogging

- Improved surgical performance*

New LenSx® Laser SoftFit™ Patient Interface: Reduces Corneal Compression & IOP to 16 mmHg Over Baseline

NEW CAPSULOTOMY PERFORMANCE

New LenSx® Laser SoftFit™ Patient Interface

Eliminates corneal compression

Lowers IOP – 16mmHg increase

Better visibility w/ no fogging

Improves docking and centration

Fixates cornea, no eye movement for precision incisions

Dramatically improves surgical performance

No liquid required……

LenSx® Laser SoftFit™ Patient Interface

New Alcon® LenSx® Laser PI with proprietary soft contact lens technology allows the natural curvature of the cornea to conform to a soft contact lens insert delivering a gentle, secure fit with minimal corneal distortion.

New PI retains all of the features of our single piece curved patient interface and provides additional benefits.

Easier docking

Lower IOP – 16 mmHg increase (over baseline)

Enhanced Patient comfort

Free floating capsulotomy in nearly all cases

Pristine capsulotomy edge

New Surgical Tool That Improves
Refractive Outcomes

Cataract outcomes are not what they need to be

“Accuracy Gap” vs. Refractive Surgery

Increasing expectations (patient/surgeon)

Right Technology at the Right Time

Value Proposition:

Increase accuracy

Improve refractive outcomes

Reduce enhancements

Increase revenue

Maximize capacity

WaveTec's Technology

The first registered with the FDA for use in cataract surgery

Introduced to the market April 2009 as the ORange Intraoperative Wavefront Aberrometer

2011 made changes/ improvements and introduced at AAO 2011 a new aberrometer

70% of the aberrometer hardware has changed

Still utilizes Talbot Moiré interferometry

Large dynamic range -5 to +20D

ORange is now ORA System™ (Optiwave Refractive Analysis)

ORA System™: Designed to
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What Makes ORA New:
Improved Precision and Accuracy

Enhanced calibration routine – increases accuracy across all powers

New light source – cleaner fringe pattern & improved consistency

Improved optics – less sensitive to decentration

Improved algorithms

ELP compensation for Toric lenses

Defocus compensation

Reticle – guide LRI incision and Toric placement

New capture routine

One step

Live video of eye – help surgeon recognize surgical factors

Surgeon outlier cautions

Why?

Desire to improve refractive outcomes of my cataract patients

Bar has been raised because of premium IOL cases

With IOL Master alone only 50% are within 0.50D of target

Desire to increase premium IOL procedures

Improved outcomes would provide a means to accomplish this

Deviation From Target
Less than half are within 0.5 D- Crystalens DATA

Binocular UCNVA
1 Month and 3 Month
Crystalens AO "Plano" Outcome

Achieved Spherical Equivalent vs Intended Target n= 181 within +/- 0.75 (1.5D!)

How to get from these results to a plano outcome

50 % IOL MASTER/etc are within 0.5 D

LASIK/PRK on about 15-20% of these patient to make them close to plano

WAVETEC- ORA to make 82% within 0.5D

With Combo of LenSx and ORA close to 95%

Use advanced instruments to make cataract surgery more reproducible- LenSx

ORA System™: Designed to
Optimize Every Cataract Procedure

ORA's all new Optiwave™ technology takes intraoperative wavefront aberrometry to a ***new level of precision*** providing surgeons a ***higher level of confidence***

Sample ORange Screenshots

WaveTec Outcomes Update
Initial ORA Results

Adapted from my talk at the American College of Ophthalmic Surgery (Aspen 2012)

WaveTec Intraoperative Wavefront Aberrometer
Clinical Applications

Uses the aphakic and pseudophakic refraction to provide guidance for:

IOL power calculations for presbyopic and standard IOLs

Astigmatic management

Toric IOLs:

Cylinder power

Axis placement

Spherical power

Refinement of final lens orientation

Guidance during LRI procedures

IOL power calculations for post refractive patients

Simplified process compared to conventional post refractive power formulas

IOL Power Calculation
Source of Data

Population

All cases from ORA clinical evaluation with 1 month post-op

Wide range of IOL types

No models excluded

Compared to ORange v2.6 results

MAVPE and Distribution
ORange 2.6 / ORA Comparison
One Month Post-op

Dr. Batra MAVPE and Distribution
One Month Post-op
N=20

Dr. Batra UDVA
One Month Post-op
N=20

Crystalens Outcomes with ORA

Evolution of WaveTec Guided Outcomes

Toric IOL Results
Source of Data

Population

All cases from ORA clinical evaluation with 1 month post-op

ORA toric IOL guidance employed

ORA IOL power calculation performed

Alcon and Staar toric IOLs

All cylinder powers

Compared to results from Alcon toric clinical study

ORA Toric IOL Results
Cumulative Post-op Refractive Cylinder

ORA Toric IOL Results
Cylinder Reduction

ORA One Month LRI Results
Postoperative Refractive Cylinder
N=39

Summary: Astigmatic Management

ORA refines toric IOL outcomes by providing guidance for:

Spherical power

Cylinder power

Axis placement

Using ORA for toric IOL cases has resulted in improved refractive and uncorrected acuity outcomes

Guidance for LRIs results in good post-op results for corneal astigmatic management

Post Refractive Results

Post refractive results

Post myopic LASIK cases from WaveTec Post refractive study

Prediction error and cumulative distribution

Comparison to literature

WaveTec Intraoperative Aberrometry
Out Performs Post-LASIK
Patient Outcomes In Literature

Summary: Post Refractive

Excellent refractive and visual acuity outcomes in a very challenging patient group

Refractive predictability

Better than published results derived from standard post refractive formulas

Conclusions

LenSx improves the safety and accuracy of cataract surgery

ORA provides guidance that results in refinement of refractive outcomes for cataract patients

IOL power calculations

Astigmatic management

Toric Lens

Premium Lenses

Post refractive cases

How we use it in practice

All patients screened for cataract surgery given a choice of procedures:

Standard- Basic Cataract surgery covered by insurance

Wavefront optimized Lens with Intraoperative Aberrometry with an LRI if needed (Can be an AMO, Alcon or Bausch and Lomb) w or w/o LenSx

ORA with Toric lens w/ or w/o LenSx

ORA with multifocal or presbyopic lens (Tecnis MF, Crystalens, Restor) w/ or w/o LenSx (soon to be only with LenSx)

Patient pays out of pocket

Bundled in costs for patient

What we have found

Improved Patient satisfaction

More patients 20/20 UCVA (all types of lenses)

More people immediately wanting their second eye done

Less need for enhancements with LASIK

Much happier patient when they see better right away

Went from several per month to 2 in 12 months

30% increase in premium IOL procedures

30% increase in overall cataract volume

Improving Cataract Surgery Outcomes using advanced technologies

Gradual Stepwise approach to improve outcomes

EHR

EPIC/3 D Wave

Meticulous Surgery

Wavetec ORA

Femtosecond surgery

Thank You- Any Questions?

Laser Vision Correction

- Approved up to -12D with 6D cyl
  - Many successful corrections in -8 and above
  - Optics not ideal
    - Due to level of Rx, patients still happy with LASIK/PRK
    - We know better
      - High SA
      - Lower Contrast
      - Higher risk of ectasia

- What are the limits for LASIK?
  - Corneal Thickness - Ectasia
  - Asymmetric Topographies - Ectasia
  - Spherical Aberration – Night Vision
- What are the limits for PRK?
  - Corneal Thickness
  - Spherical Aberration
  - Stromal Haze/Scarring
    - Minimal risk

How Do We Determine Who is Candidate for LASIK?

- Excimer Laser Correction approved up to -12D
- Corneal Thickness determination
  - 15microns per Diopter treated (-8 x 16 = 128 microns)
    - Percent Tissue Altered needs to be <40% (*Santiago AJO 2014*)
      - Ablation Depth + Flap Thickness/Thinnest Pachy
      - 128 microns + 110 microns = 238/595 = 40%
        - -8.00 needs at least 595 micron K
        - -9.00 needs at least 635 micron K

        - -10.0 needs at least 675 micron K
      - Bladed Flaps (140 – 180, we think? – Need much thicker K)
  - Ectasia Risk much higher when PTA > 40%
  - Also use Randleman Scoring system
- Vision Quality
  - Wavefront Optimized Ablations with EX 500
    - Maintains Prolate shape of cornea
    - Reduces Corneal Aberrations
      - More aberrations with higher attempted correction
        - Corneal Higher order aberrations after myopic wavefront-optimized ablations. J Ref Surg 2013 Jan; 29 (1)
    - With higher corrections, lower contrast sensitivity
      - Due to higher spherical aberration and coma
  - We need a better option for the high myopes -

What About PRK?

- Still will use PTA to help determine corneal thickness requirement
  - Obviously, able to treat higher levels of myopia
    - No flap thickness, only epithelium
      - Theoretically, can treat -10 (150 microns) in 500 micron cornea
        - 150 microns + 50 micron epi = 200 microns/500 = 40%
- Risk of Corneal Haze/Scarring increased after -6
  - Using Mitomycin C has reduced risk of haze,

but if develops can be very challenging to treat

- Sia JRS 2014

- PRK for high myopia also has risk of
  - Higher Spherical Aberration/Coma

Should We Perform Refractive Lens Exchange for High Myopes?

- Excellent Surgical Option
  - Better for Patients >45
  - Multiple IOL Options
    - MFIOL
    - Monovision
      - Monofocal
      - Toric IOL
  - Low risk except for RD
    - 25x risk of RD in high myopia
      - *Daien J Ophth 2015*
      - PVD Critical
      - Peripheral Retina Clear

Who is the best candidate for RLE?

- Early Cataracts
- Age >55
- PVD
- Normal Peripheral Retina
- Moderate to Higher Myope
- Hyperopes – Ideal candidate

What about the Pre-Presbyopic High Myopes?

What About Patient Concerns

- Patients' fear of surgery
  - Complications related to "cutting" the cornea
  - They're less concerned about "laser"
- Patients' desire for safety
  - Want to minimize sight-threatening complications
  - Concerns about night vision and aberrations
  - Over 5,000,000 eyes treated with:
    - No reported perforations
    - No reported infections
    - Minimal epithelial defects or ingrowth
- **We Know…**
  - Flap creation is responsible for the majority of the procedure complications and safety issues

Comparing Technology: Blade-Free vs. Blade

- Faster
  - ✓ Less treatment time
  - ✓ Preserves more tissue
- Safer
  - ✓ Preserves more tissue
  - ✓ More Stable
  - ✓ Uniform Thickness
- Smoother
  - ✓ Truly Customized
  - ✓ Vertical adjustments
  - ✓ Better Outcomes
  - ✓ Excellent Stromal Bed Quality

Reported Corneal Complications with Conventional Microkeratome[1]

- Decentered flaps
- Irregular-shaped flaps
- Incomplete flaps
- Button-hole flaps
- Flap laceration
- Epithelial defects
- Limited hinge location
- Poor flap thickness predictability
- Wide range of flap thickness for a given attempted thickness
- Anterior chamber perforation
- Achieved mean thickness less than the labeled head
- Sensitive to preoperative corneal curvature and thickness
- Meniscus-shaped flaps
- Highly variable hinge length
- Flap thickness dependent on translation speed
- Blade quality affects results

The Visian Implantable Collamer Lens (ICL)

- The Visian (ICL) offers:
  - Additive Technology
  - Better Optical quality
    - No alteration of K
  - Stable Correction
    - No regression
  - Can combine with PRK/LASIK
    - Up to -25
  - Even in some Moderate Myopes, ICL may be best option

Never Heard of ICL?

- Available for over 10 years in US
  - Greater than 20 years outside US
- Commonly used in US Military Personnel
- Over 500,000 have been implanted
- Implantable Collamer Lens
  - Collamer material is exquisitely biocompatible

When to Consider ICL

- Any patient over -6, should be considered for ICL
- Dry Eye Patient
- High Demand patients
  - Engineers
  - Photographers
  - Artists
- Patients are unaware of ICL
  - Been told they were not candidate for LASIK

Inclusion Criteria

- Myopia: -3 to -20D (lenses up to -16, so "reduces" correction at higher levels
  - Can combine with LASIK/PRK for higher levels
- Astigmatism: up to 2D of regular astigmatism
  - Can perform LASIK/PRK for higher levels
  - Toric ICL available in EU, awaiting FDA (for past 5 years!)
- Age: Less than 45y
- Anterior Chamber Depth: >3.0mm
- Anterior Chamber Angle: Grade IV

Surgical Procedure

- Laser PI x2 each eye
  - 1 week prior
- Topical Anesthesia
- One eye at a time
- 15 minutes to implant
- IOP check 2 hours post procedure
  - VA improves quickly

Post-Operative Course

- At 2h check
  - VA improving, but cloudy, pupillary block check
- At 1 Day PO
  - Good VA, IOP check, Vault check
- At 1 week PO
  - Stable VA, IOP check, Vault check
- Second eye done at one week, usually
- Same PO course for second eye, post op care transferred after 1wk visit on Second eye

Visian Complications

- Cataract Formation
  - 1.3% in FDA Study
    - 0.3% in pts <45
  - Usually surgical trauma
  - Low Vault
- Pupillary Block
  - If PI not patent
  - New V4c should help with this
- Pigment Dispersion
  - Rare
- Infection
  - Theoretic risk, 1 case in >85,000

Results

- 2010 Military Study
  - Avg SE -6.2
  - Results
    - 66% 20/15 or better
    - 96% 20/20 or better
    - 34% gained at least one line of BCVA
  - Complications
    - 4.8% with glare
      - Iridotomy most common
- Cochran Database Review
  - Phakic IOL preferred by pateints

How Do You Introduce ICL?

- Since these High Myopes have always been told they are not candidates
  - Mention there is a surgical procedure for them
  - Your discussion prior to consult is VERY HELPFUL
    - Most visits, we are trying to educate patient about a better option
      - They feel “LASIK worked for my friend/wife/husband/colleague, so it is what I want”
      - If you have had the conversation as well, they will be more prepared
        - A well-educated patient will make the best decision for their eye health

Visian Summary

- Visian ICL offers optimal correction for High Myopia
  - “High Def Vision”
  - Stable Correction
  - No Dry Eye
  - Low Risk Profile
- At Batra Vision
  - Surgery performed two days apart or bilateral
  - Surgical Co-Management possible

Hitting Your Target: Generating Your Best Outcomes in Cataract Surgery

Question 1

- What is the current percentage of cataract surgery refractive outcomes within 0.5D of target?

- 83%
- 71%
- 64%
- 58%

Cataract Surgery Outcomes[3]

What is “Astigmatism Management”?

Where to Start?

Available Options

Cataract Refractive Diagnostics

Identifying Sources of Variability in our Current Process

Streamlining the Cataract Refractive Process

Question 2

- If a Toric is misaligned by 8 degrees, what is the loss of effect?
  - 8%
  - 24%
  - 12%
  - 34%

Surgical Guidance vs. Manual Marking

The VERION® Image Guided System

Capturing the Patient Image

Microscope Integrated Display

VERION Correcting for Cyclorotation at the LenSx

VERION® Image Guided System and SN6AD1

Centration of ReSTOR

to Pre-Op Pupil

Question 3

- What is you preferred centration option for multifocal IOLs?
  - Centered on Capsulotomy
  - Visual Axis
  - PreOp Pupil
  - Limbus
  - Dilated Pupil

What about Femto?

LenSx® Laser SoftFit™ Patient Interface

- Silicone hydrogel lens insert

Sealing the Incisions Question

- Cyclorotation Management is important to ensure intended effect when executing which LenSx® Laser procedural step(s)?
  - Primary Incision
  - Arcuate Incision(s)
  - Capsulotomy Placement
  - All of the Above

What about Intraoperative aberrometry?

Question 4

- The ORA™ System with VerifEye+ provides streaming refractive information to validate
  - Power
  - Cylindrical Magnitude and Axis
  - Post Refractive IOL selection
  - All of the above

Prior Myopic Refractive Surgery Patients

Improved Astigmatic Outcomes with VerifEye® Technology[4]

- The ORA™ System with VerifEye+™ Technology gives you the confidence to effectively treat astigmatism for toric IOL patients.

What's Next?

Introducing VerifEye+

VerifEye+™ & VerifEye® Technologies

IOL Platform

Fibronectin Binding

- AcrySof® IOL material has the highest fibronectin bioadhesion compared with other hydrophobic acrylic and PMMA IOL materials and has the lowest fibronectin loss after SDS treatment. The higher fibronectin retention observed for AcrySof®

IOL material suggests the presence of stronger bonds between this hydrophobic acrylic surface and the fibronectin protein structure.[1] This may be responsible for the greater IOL stability characteristic of AcrySof® lenses.[8]

Nick Batra, MD
cAse Study

Case : ORA and TORIC IOL

Case Summary and Pearls

- In this case no cyclorotation at the LenSx® Laser

- ORA is used to perform aphakic refraction and adjust lens power by 0.5 D and pick the T7 lens (same as Verion)

- Using ORA the lens is placed at the correct axis until no rotation is recommended by ORA

CTR with LENSX
Dense Cataract with LenSX

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CURRENT POSITION

BATRA VISION MEDICAL GROUP — SAN LEANDRO, CA
Director, Cornea, Cataract and Refractive Surgeon — 2002-Current

EDUCATION

UCSF DEPARTMENT OF OPHTHALMOLOGY — SAN FRANCISCO, CA
Clinical fellow in Cornea and Refractive Surgery (UCSF/Proctor Foundation) — 1999-2000
Heed Foundation Fellow — 1999-2000
Resident in Ophthalmology — 1996-1999

UCLA SCHOOL OF MEDICINE — LOS ANGELES, CA
Intern in Internal Medicine (SFV Program) — 1995-1996
M.D., 1995 — 1991-1995

DARTMOUTH COLLEGE — HANOVER, NH
A.B. in Economics modified with Biology, 1991 — 1988-1991

PUBLICATIONS

Batra VN, Mcleod SD "Phakic IOL's" Ophthalmology Clinics of North America 2001
Batra VN, Turner SG "Quinolone Resistant Staph following LASIK" Poster ISRS 2001
Batra VN, Abbott RA "Bacterial Corneal Ulcers" Ophthalmology for Self Assessment/Review 2001
Abbott RA, Batra VN "Intrastromal Corneal Rings" Duane's Ophthalmology 2000
Batra VN, "Corneal Physiology" for YourDoctor.com (ed G Smolin MD)
Batra VN, "Implantable lens technology for refractive errors" for YourDoctor.com (ed D Hwang MD)
Batra VN, Maloney RK "Refractive outcome in radial keratotomy: does the result of the first eye predict the outcome in the second?" Ophthalmology Digest, Oct 1997
Batra VN, Maloney RK, "Refractive outcome of radial keratotomy: does the result of the first eye predict outcome in the second eye?" American Journal of Ophthalmology, Feb 1997.

MEETINGS/LECTURES/COURSES

"Refractive Surgery Update 2004" San Ramon, CA 2004
"Scleritis, Episcleritis, Endrophthalmitis" UC Berkeley School of Optometry 2003
"Thin Flap Lasik" Course Director ASCRS 2003 (San Francisco)
"Intacs following PRK in Keratoconus" ASCRS 2003 (San Francisco)
"Visx S3 Versus Visx S4 Laser Comparison" ASCRS (San Francisco)
"Intacs in Keratoconus" Cordes Eye Society Meeting 2003
"Wavefront Rountable" Alamo CA 2003
"Scleritis, Episcleritis, Endophthalmitis" UC Berkeley School of Optometry 2002
"New Developments in Ocular Diseases" Eden Hospital Grand Rounds 2002
"Use of Lasers in Ophthalmology" Eden Hospital Grand Rounds 2002
"Scleritis, Episcleritis, Endophthalmitis" UC Berkeley School of Optometry 2001
"Tracking Laser Comparison VISX S3 vs Ladarvision" ISRS 2001 (New Orleans)

"VISX S3 and Autononomous LADARVISION" Cordes Eye Society Meeting 2001
"New Advancements in Refractive Surgery" Eden Hospital Grand Rounds 2001
"Refractive Surgery Advancements and Complications" Commonwealth Club of SF April 2001
"LASIK and other Refractive Surgical Procedures" Rotary Club of Oakland 2001
"SB929 for OD's" Course Director TEIMG February and March Meetings 2001
"Cornea and External Disease" Santa Clara Optometric Society Meeting February 2001
"The Ocular Surface";"LASIK Complications";"Cornea and External Disease" for SB929 TEIMG 2001
"Scleritis, Episcleritis, Endophthalmitis" UC Berkeley School of Optometry 2000
"Xalatan for Corneal Haze following PRK" ASRCS 2000 (Boston)
"Sterile Corneal Infiltrates following PRK" ASCRS 2000 (Boston)
"Ocular Toxicity" Cordes Eye Society Meeting 2000 (San Francisco)
"The role of drug compounding in Ophthalmology" PCCA Meeting 2000 (Key Note) 2000
"Principles of cataract surgery" UCSF Basic Science Course December 1999
"Anterior segment surgical techniques and pearls" UCSF Microsurgery Course Fall 1999
"Intraocular Infection in a Pediatric Consult Service" OMIG 1999 (AAO-Orlando)
"Analysis of the pediatric ophthalmology consult service" 1999 PCOOS Meeting (Vancouver)
"Pediatric Ophthalmology at UCSF" Cordes Eye Society Meeting 1999 (San Francisco)
"Outcomes of the ICRS Phase III Study" presented at UCSF Residents' Day 1998
"Outcomes in refractive surgery" presented at PCOOS Meeting 1997 (San Diego)
"Juxtafoveal telangectasia" case presentation at UCSF grand rounds 1998
"Intraocular pressure measurement" case presentation at UCSF grand rounds 1997
"Hypertensive retinopathy" case presentation at UCSF grand rounds 1997
"Radiographic Assessment of Thoracic Coccidioidomycosis" 1994 American Roentgenray Society (ARS) and 1993 Radiological Society of North America (RSNA).
"Hypersensitivity Lung Diseases" 1992 ARS and 1991 RSNA.
"Cavitary Lung Cancer: Causes of Excavation, Radiographic Features and Differential Diagnosis" 1992 ARS and 1991 RSNA.

WORK EXPERIENCE

Eye Physician and Surgeon — July 2000-February 2003
Turner Eye Institute, Performed Cornea, Cataract and Refractive Surgery

Medical Assistant — Spring 1990, summer 1991
Set up computer database for the office ans assisted in patient care in a private practice setting

Tutor — 1988-1991
Peer tutor in Economics and Physics

SOCIETIES

American Board of Ophthalmology, Diplomate	2000-Current
American Academy of Ophthalmology, Member	1997-Current
American Society of Cataract and Refractive Surgery, Member	1998-Current
Association of American Physicians of Indian Origin, Member	1998-Current
Frederick C. Cordes Eye Society, Member	1996-Current
Student President, Indian Medical Association of Greater Los Angeles	1992-1994
Medical School Curriculum Evaluation Committee, Member	1993-1994
Sales Coordinator, Class of 1995	1992-1994
Big Sibling Coordinator	1992-1993

PERSONAL

Racquetball (finalist, UCLA 1991-1992), basketball, skiing and salt-water fish hobbyist.