ReLACS
Refractive Laser Assisted Cataract Surgery
Overview and Benefits

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ASCRS
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Relevant Financial Disclosures

- AMO

Thousands laser pulses are connected together in a raster pattern to create a cleavage plane.
Refractive Laser Assisted Cataract Surgery

Refractive Laser Assisted Cataract Surgery

Background

• Over 300 laser cataract surgery units (LCS) units placed in US
• Efficacy has been demonstrated
• Multiple generations of corneal femtosecond lasers required prior to majority in keratome marketshare
  – Marketshare: 0% in 2001 → 55% in 2010

ReLACS
Proposed Benefits

- Image guidance
- Bladeless
- Less intraocular energy
- More precise and reproducible capsulotomy shape and size
  - ELP
- Integrated astigmatism correction

Technologies

- LensX (Alcon)
- Catalys (Optimedica/AMO)
- LensAR
- Victus (Technolas/ Bausch + Lomb)

First Optimedica Catalys in South Carolina
Catalys Experience
Magill Vision Center

- Placed August 2013
- 6 Surgeons have used device
  - 3 Residents
- 4 Surgeons Certified
  - 1 Resident
- 111 procedures performed to date
- 62 procedures performed personally

Capabilities

- Image guidance
- Corneal Incisions
- Capsulotomy
- Fragmentation
- Astigmatic incisions

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Femtosecond Incision

Femto Laser vs. Manual Incisions
High Resolution OCT

Capabilities

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- Astigmatic Incisions
Fragmentation Patterns

LOCS I-II Grid Complete

LOCS II-III Grid Complete

LOCS III Grid Quad

LOCS III-IV Grid Quad

Capabilities

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Femtosecond Laser Assisted Astigmatic Keratotomy Enhancement in Post LASIK Pseudophakia

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Case Presentation

• 76 YO Female c/o blurry vision
• S/p hyperopic LASIK
• S/p phaco PCIOL
• Blended vision
  – OS Dominant eye
• K. Sicca
• Desires enhancement for OS distance

Pre-Op
1.0 D

MRx = +0.75 – 1.00 x 95

Waring IV, GO
Tomography Comparison

Pre-Op 1.0 D

Post-Op 0.2 D

Pre MRx +0.75 – 1.00 x 95

Post MRx = Plano sphere

Therapeutic Laser Assisted Cataract Surgery
TLACS

Angle OCT Pre-Post DLR
Hyperope DLS with Narrow Angle Glaucoma OS

Pre-operative
Angle=23.1°  Angle=31.0°
IOP=33
UCNA = J1+

Post-operative
Angle=42.6°  Angle=42.5°
IOP=15
Post LPI, no IOP lowering medications

Scheimpflug Pre-Post DLR
Hyperope DLS with Narrow Angle Glaucoma OD

Pre-operative
Angle=24.8°  IOP=32
UCDA = 20/10

Post-operative
Angle=41.5°  IOP=16

Hyperope DLS Narrow Angle Fuch’s Pre-Post DLR Comparison

Waring IV, GO

Waring IV, GO
Summary

• ReLACS is a significant advance in cataract surgery
• First generation lasers are superb
  – Incisions, capsulotomy, lens fragmentation, LRI
• Like femtosecond keratomes, we can anticipate improvement in performance
• Efficacy has been established
• Superior safety relative to manual remains to be seen
Thank you

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