Solving High Myopia Problems: Iris Fixated IOLs: Installation and Removal

David R. Hardten, M.D.
Minneapolis, Minnesota

Have done research, consulting, or speaking for:
Allegan, AMO, Carl Zeiss, Cov-Gard, ESI, HumanOptics, Guide, ODS, Quantel, TLCV

Some of the information may represent off-label uses of approved drugs or devices.

D.R. Hardten, M.D.
www.mn-eye.com
Ph: 612-813-3600  Fax: 612-813-3636

Initial Step: Commit to their Usefulness

Why Phakic IOLs?

- They play a real role in the management of higher refractive errors
- Technique is learnable by intracocular surgeons
- Verisyse and ICL Visian IOL now approved
- Two implants increases options
- This is technology that can be additive to the technology needed by patients seeking LASIK
- This is technology that can be additive to the surgeon doing NLR or cataract surgery

Why a phakic IOL?

High Corrections with Retention of Accommodation

- Removable (no tissue removed)
- Both IOLs in clinical trials >90% ± 1 D of target
- Both IOLs in clinical trials >90% 20/40 or better UCVA
- Improvements in BCVA on average
- Low risk of complications
Complications

Complications can Occur

Bilateral Vision – Too Long – Angle Closure with decreased endothelial cell count
Visian – Too Tight Enclavation with High Lens Rise with Posterior Synechiae

Pre-Verisyse or Visian Planning

Borderline AC depth - 3.04 mm
Mid peripheral rise in iris

Ultrasound Biomicroscopy (UBM)

normal eye
anterior lens
vitreous and anterior conjunctiva
choroid
iris
sclera
iris body

Courtesy of Thomas C. Page, PhD, MPH
ClearView™ (patents pending, ESI, www.clearview.com)
VuMax™ (patented, www.vumax.com)
Suggested Safety Parameters

OCT – Anterior Chamber Dimensions

CLR = Crystalline lens rise

Anterior movement of lens of about 20 microns per year

Baïkoff, G.: JCRS 2006; 32:1827

Pre-Verisyse or Visian Planning

AC too shallow

2.0 mm endo

Advanced Software Developments

Pentacam – software for Verisyse Planning –

Helpful in Visian also

Preop Visian

Select Visnyse

Preop Visan

100 power

Evaluate clearances

Endo Clearance Ave

Change = 0.44mm

Diff’s Predicted

Ave = 0.02 mm
**Advanced Software Developments**

**Pentacam – Extrapolation to Visian**

- Select Verisyse Prep
- 6.5 size Ave = 2.08 mm
- 10D power Predict = 1.62 mm
- Evaluate clearances

- Endo Clearance Ave = 0.44 mm
- Change = 1.56 mm
- Diff = 0.02 mm
- Diff to Predict Ave = 0.02 mm

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**Verisyse Enclavation**

**Phakic IOLs**
- Preoperative PI’s critical
- Two paracenteses
- 10 and 2 o’clock
- Orient towards the midperipheral iris
- Wound should be relatively short
  - Long wounds make lens insertion more difficult

- Memorize AC depth
- Preview position of claws
- Small portion of iris
- Watch natural lens during enclavation
- Lift iris into claw
- Refill AC to proper depth when evaluating centration
Key Steps to Insertion

Verisyse IOL

Laser Vision Correction Enhancements

LVC after ph-IOL

- 22 eyes with at least 1 mo f/u (mean 5 mos)
- Mean SE last f/u = +0.12 ± 0.31 D
- Mean Astig = 0.25 ± 0.31 D
- UCVA 20/25 or better = 82%
- UCVA 20/40 or better = 95%
- In eyes with original BCVA 20/20
  - UCVA 20/25 or better = 94%
  - UCVA 20/30 or better = 100%
- No eyes with loss of BCVA

Case Example – LVC after Verisyse

Wavefront Treatment after Verisyse

MR: -2.50 + 1.25 x 25
WR: -3.53 + 2.11 x 36
HOA: 0.86 μ
Coma: 0.41 μ
Trefoil: 0.79 μ
SA: 0.19 μ

Postop PRK – Custom
UCVA = 20/20
Eventually Cataract

Eventually All Phakic IOLs Will be removed

Steps To Removal

I prefer: Superior Scleral Incision for Removal of Verisyse
Then Clear Cornea for IOL

Verisyse Removal
De-Enclavation

The Unique Step

Conclusions

Phakic IOLs
- Excellent addition to comprehensive refractive practice
  LASIK
  PRK
  Phakic IOLs
  Natural Lens Replacement
  Presbyopic IOLs
  Refractive Cataract Surgery
- Enhancement possible with PRK or LASIK
- Rates low (<10%)
- Eventual Cataract Removal