



المؤتمر السنوي الدعوى للجمعية الزمعية المصرية
INTERNATIONAL CONGRESS OF THE
**EGYPTIAN
OPHTHALMOLOGICAL
SOCIETY**



Corneal or Lenticular Refractive Surgery: When and why?

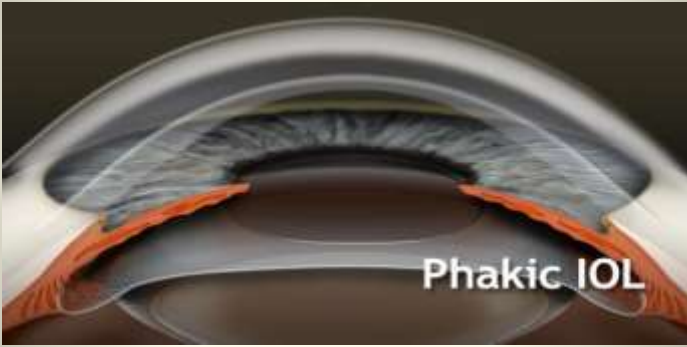
Symposium of the Hellenic Society of
Intraocular Implant and Refractive Surgery
Cairo, 14/3/2018



14-16
March, 2018
Cairo, Egypt



Phakic IOLs



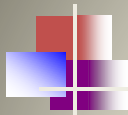
Phakic IOL

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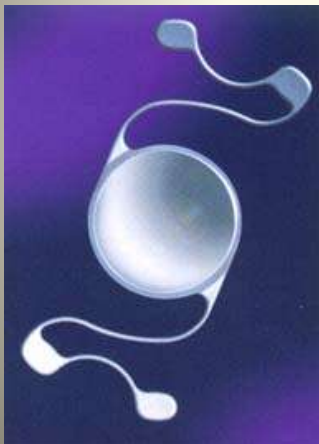


Phakic IOLs

- An intra-ocular lens is placed inside the eye in front of the patient's natural lens.
- These are available in three types
 1. Anterior chamber angle fixated IOL – Nuvita (Bausch & Lomb), Kelman duet, I care (corneal), Vivarte (Ciba vision)
 2. Iris supported phakic IOL – Verisyse/ Artisan (AMO/Ophtec)
 3. Plate lens that fits between the iris & the crystalline lens – Starr implantable contact lens (ICL), PRL (Ciba).



Angle-fixated Anterior Chamber Phakic IOL

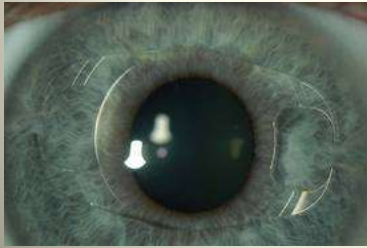


Kelman Duet
Two pieces phakic IOL



Iris fixated AC phakic IOL – Verisyse phakic IOL

- Most commonly used phakic IOL
- One-piece design



- Posterior Chamber IOLs first developed by Prof. Fyodorov since 1991



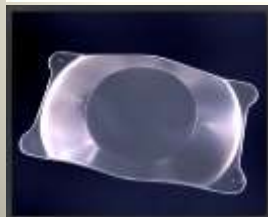
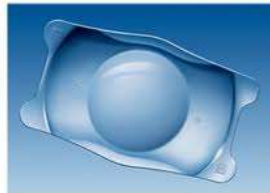
Posterior chamber free-floating Phakic IOL PRL(Zeiss)



- PRL is not any more available



ICL and Toric ICL



ICL and Toric ICL

- Posterior chamber lens
- Collamer material
- Lens power for Myopia: -3 ~ -23 D
- Lens power for Hyperopia: +3 ~ +21 D
- Toric correction:
 - +1 to +6 D individual cylinder axis
- Topical anesthesia
- Simoultaneous bilateral approach

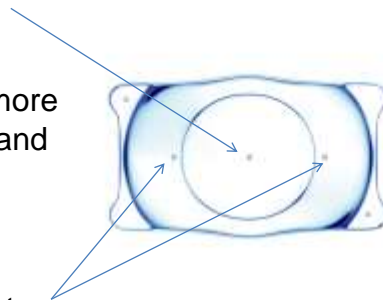


The Design of the Port – ICL V4C

• 360 μ m port in the center of the optic.

• Designed to restore more natural aqueous flow and eliminate the need for iridotomies.


• 360 μ m Peri-optic ports are designed to facilitate viscoelastic removal.





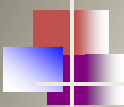


VISIAN ICL V4C








Advantages

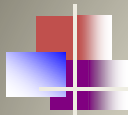
- Quality of vision
- Biocompatibility
- Wide treatment range
- Stable results
- Small incision required
- **Reversible**, if necessary



Advantages

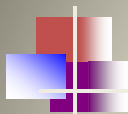
- Can treat patients with thin cornea's
- Does not alterate cornea
- Can treat myopia >10 D
- Can treat hyperopia > 5 D





Who is suitable for ICL?


- Individuals who have very high degrees of hyperopia or myopia
- Those who have had previous refractive surgery and did not attain the desired results
- Patients who are free from corneal disease and glaucoma and have healthy eyes
- Presbyopic
- Pediatric



Patient selection

- Age 21-45
- Stable refractive history
- ACD > 2.8 mm
- Irido-corneal angle > 30°
- Endothelial cell count >2500 cells/mm²
- No ocular pathology





Factors that led to greater adoption

- Improvements in lens designs
- Publications of longterm clinical results
- Realization among surgeons that LASIK alone cannot address all refractive errors



Broadened ICL indications

- Lower degrees of Refractive errors
- Correction of residual refractive errors after
 - LASIK
 - Corneal transplant
 - ICRS implantation
 - Corneal collagen cross-linking
 - Pseudophakia





Broadened indications (cont.)

- Can be used:
 - Forme fruste keratoconus
or keratoconus suspect
 - Stable keratoconus
 - Children with high anisometropia
 - Bioptics is a combination of phakic IOL and LASIK




Contraindications

- ACD less than 2.8 mm.
- Anterior chamber angle less than Grade II as determined by gonoscopic examination.
- Endothelial density <2500 cells/mm².





Contraindications

Certain medical conditions, such as

- Pregnancy or nursing
- AIDS
- uncontrolled diabetes and
- immune disorders




Preop Examination

- UCVA & BCVA
- Manifest & Cycloplegic refraction
- Corneal topography
- Applanation tonometry
- Biomicroscopy
- Fundus examination
- W-W measurement
- Corneal pachymetry
- Endothelial cell count
- Pupil Size

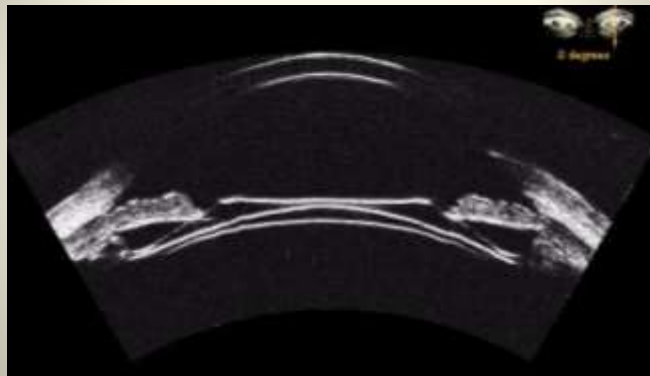



ICL Selection: White-to-White Current Recommendations

- White to White (caliper method recommended)
 - Verify using: Orbscan, UBM, Other






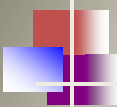
Proper Sizing is important - Biomechanical properties of ICL allow wide range of vault (150-750 micron)








Size matters...

- Undersized => Low vault
 - Anterior Subcapsular Cataract
 - Rotation
- Oversized => High vault
 - Pigment dispersion syndrome
 - Angle closure glaucoma
 - Pain

Differences with Cataract surgery

- ICL Loading is half the procedure
- Incision -Two side ports + temporal entry
- Working space – Boundaries
- Central 6mm zone = No touch zone
- Preserve the lens vs remove the lens
- Morning procedure
- REVERSIBLE



Complications

- Over-, undercorrection
- Cataract 1.45%
- IOP rise (temporary)
- Endophthalmitis
- Endothelium?
- Reversible - Replacement



Surgical procedure





Future improvements

- Easier implantation
- Lens sizing
- Aspheric and wavefront optimized customized lenses for highly aberrated eyes



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Thank you



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