

Clinical evaluation of foldable acrylic phakic IOL (fP) implantation to treat anisometropia after AthPROTOCOL ASCRS 2012



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Financial interests (AJK)

- Alcon/Wavelight
- Bausch & Lomb
- Seros Medical
- Avedro
- Ocular Therapeutix
- Keramed



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Introduction:

- Phakic IOL implantation is a valid option in the correction of high myopia and myopia in cases with thin or irregular cornea.
- We have worked with several anterior chamber and posterior chamber phakic IOLs with all advantages and potential disadvantages.

Disadvantages of PC phakic IOLs

- risk for papillary block,
- the need for a peripheral iridectomy,
- cataract formation due to lens injury during the procedure
- glaucoma due to angle obstruction
- Dislocation in the posterior pole
- Pigment dispersion



The Athens Protocol: same day PTK > topoPRK > MMC > CXL (7mW/cm² x 15 min)

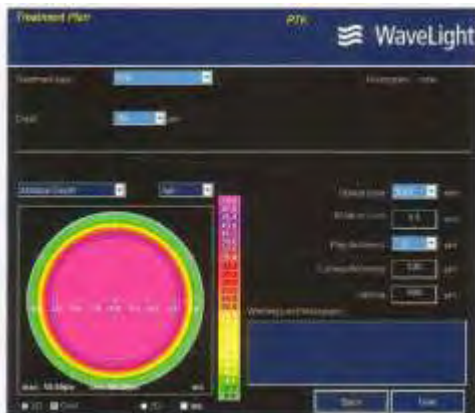


Figure 4.1: Epithelium removed with 50 micron PTK

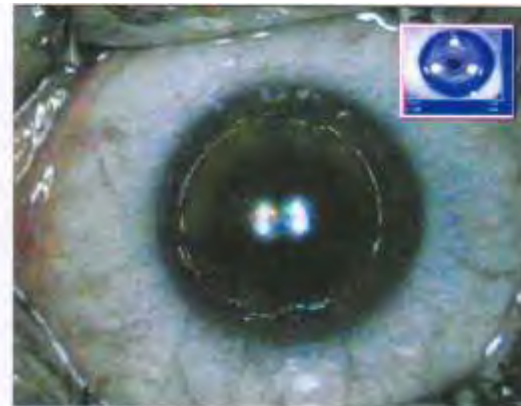


Figure 4.3: Topography-guided PRK to correct part of the refractive error (TCAT treatment plan) maximal thickness removal 50 microns

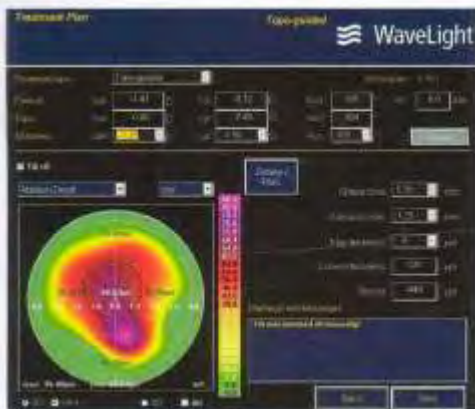


Figure 4.2: TC at treatment plan

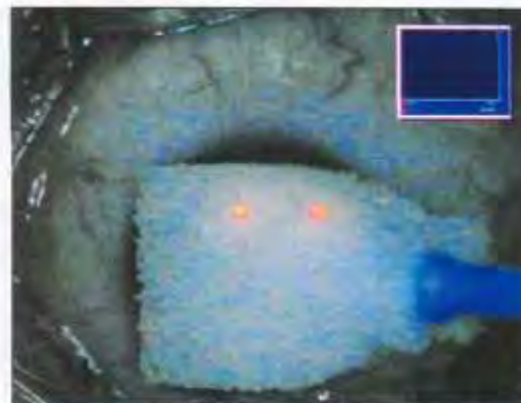
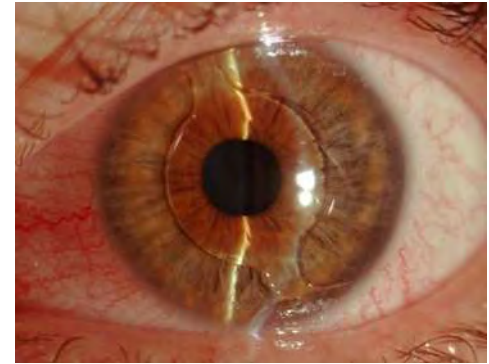


Figure 4.4: MMC solution 0.02% for 20 seconds



Cache

- The hydrophobic acrylic material used in the cache phakic IOL has been extensively used in routine cataract surgery implantation with excellent results and biocompatibility. We decided to evaluate the safety, efficacy and clinical parameters of the Cache, phakic IOL (Alcon, Fort Worth, TX) in the visual rehabilitation of high myopia (HM).

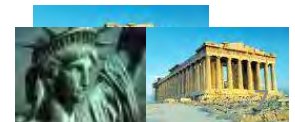
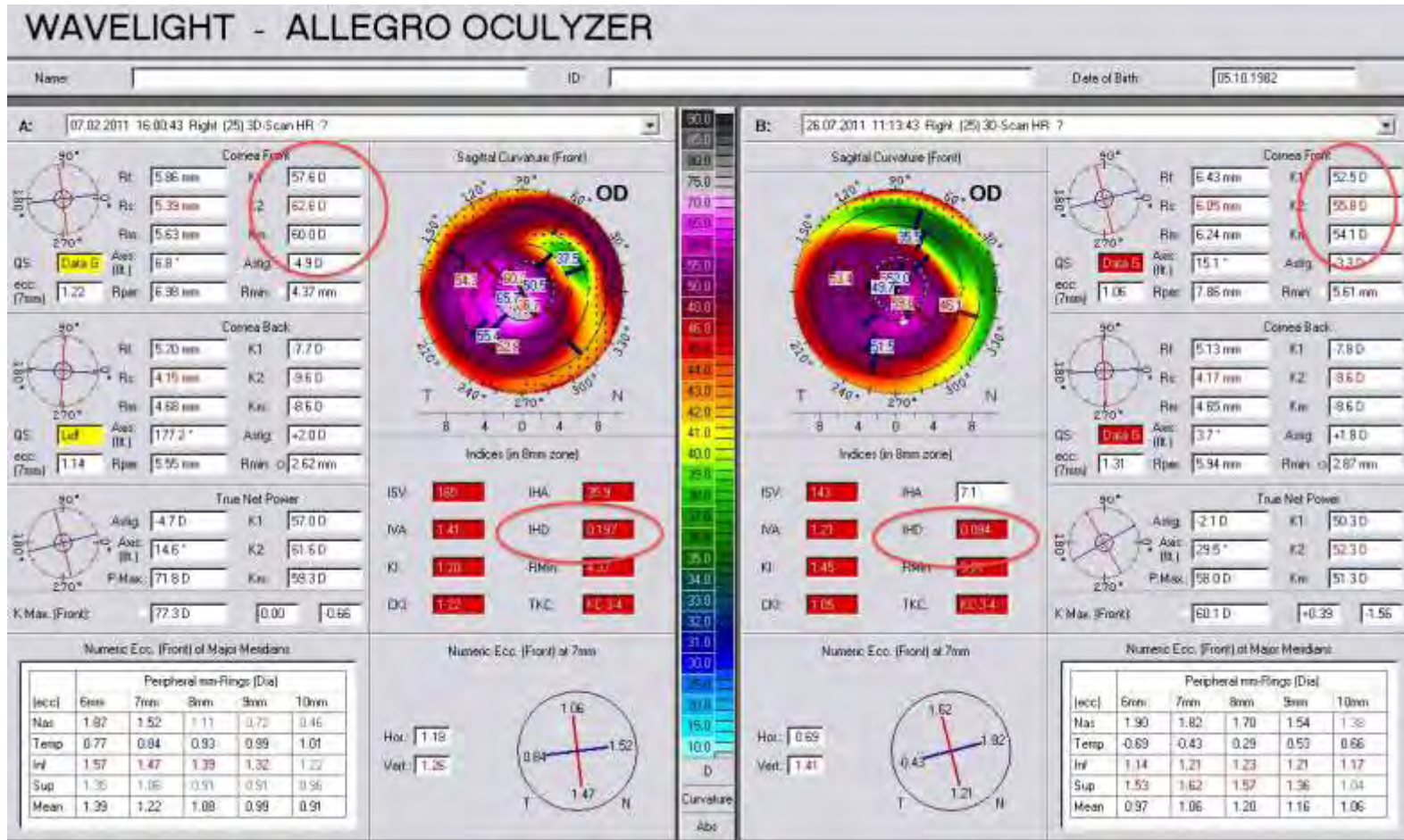


Methods

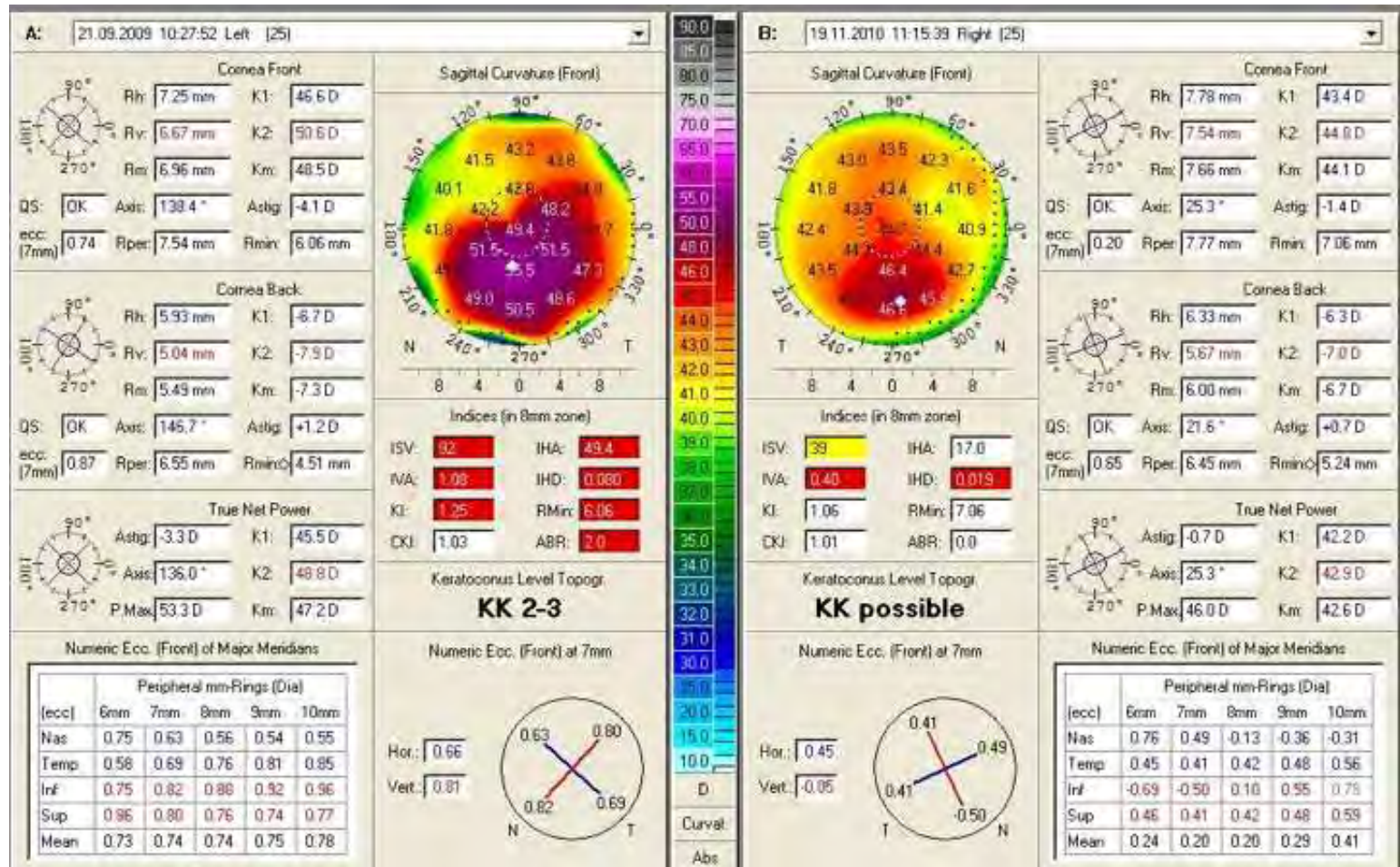
We studied 15 eyes of 15 consecutive patients at least 6 months following the Athens Protocol for ectasia management and improvement of BSCVA, were evaluated pre- and 6 months post- operatively for: age, UCVA, BSCVA, refraction, cylinder (C), topographic cylinder change (TCc), endothelium (ECC and possible complications.



Topometric parameter improvement: IHD



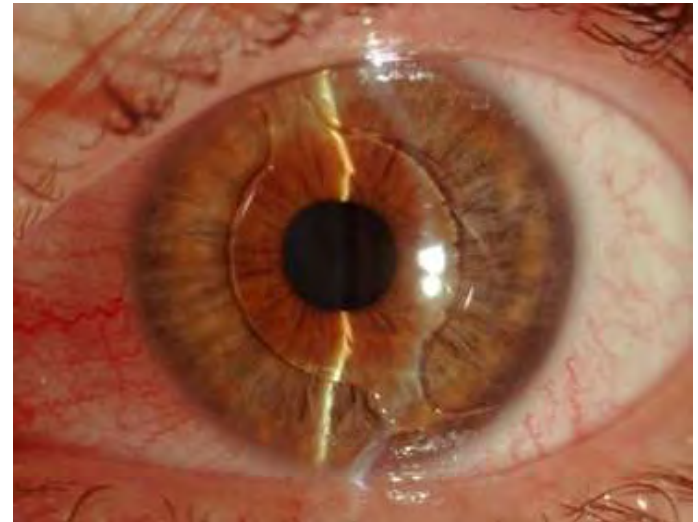
Average K from 48.5 to 44
 Refraction -2.5-4.5@155 (20/70) to -1-1.5@10 (20/20)



Results:

- The mean age was 27 years and mean values pre- and post-op were respectively: UCVA: from 20/400 to 20/32,
- BSCVA: from 20/40 to 20/28, (mag effect)
- Spherical equivalent reduction from 10.2 to 1.5 diopters,
- Cylinder: from -2.75D to -1.75 D, Topographic Cylinder change: -0.35D, Endothelial cell count CC: 2650, 2550.
- No complications were encountered in his small group.

1 day post-op: 20/20



Conclusions:

- This phakic IOL appears to be safe and effective in high myopia in stabilized KCN eyes.
- Significant advantages include:
 - a simple implantation technique,
 - the very small incision needed (2.2-2.5mm),
 - no need for peripheral iridectomy,
 - little anterior chamber angle changes from the haptics.

Haptics viewed by gonio



Potential limitations

- AC depth
- Calculation of white to white-potential misfit
- Addressing high astigmatism-toric?
- The lens centers in the AC, not the pupil
- Long term Endothelial cell studies necessary
- Potential risk for retina complications needs to be assessed by larger studies



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