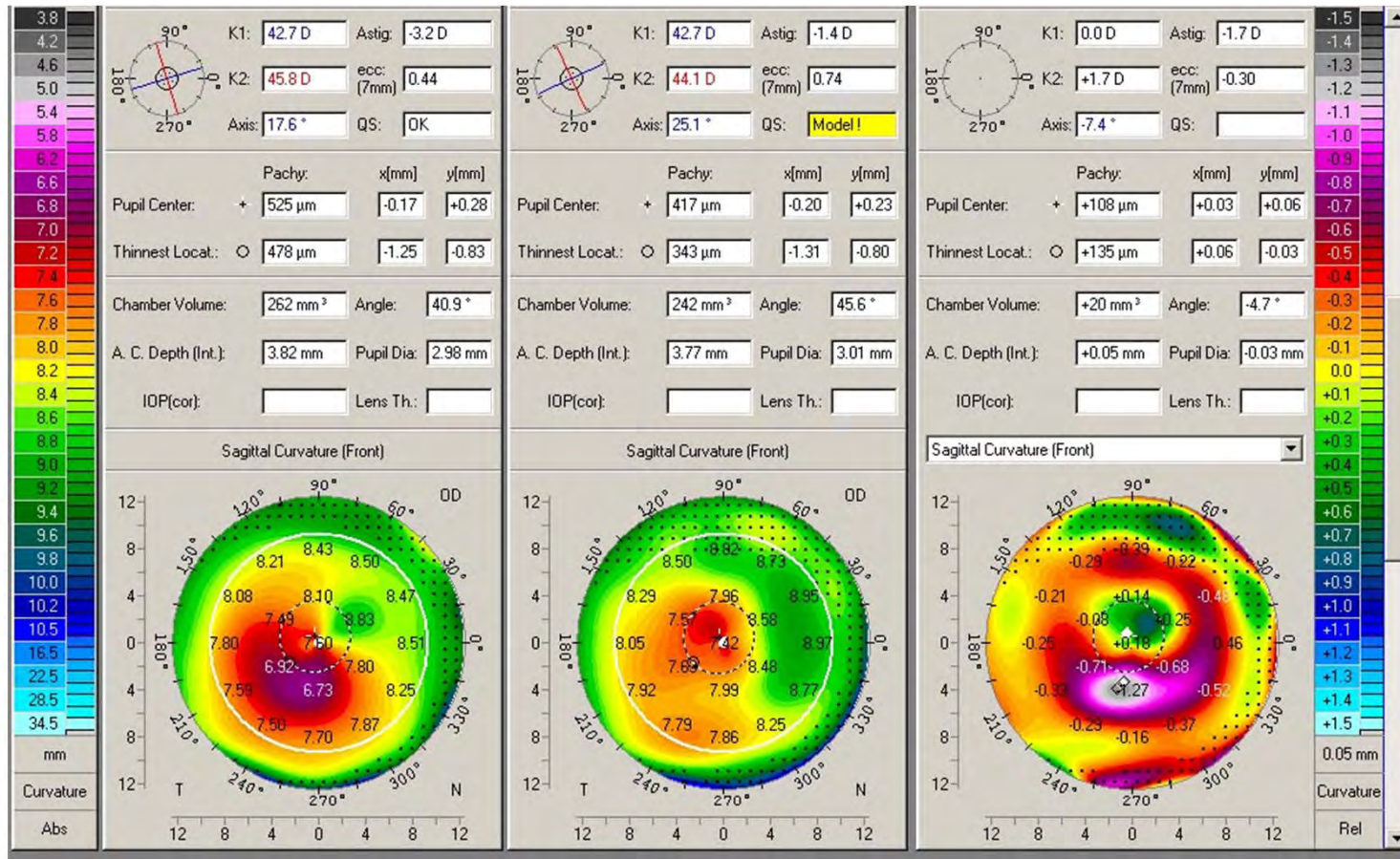


# Short and long term complications of combined topography guided PRK and CXL (the Athens Protocol) in 412 keratoconus eyes (2-7 years follow-up)



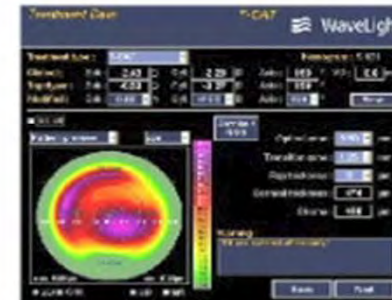
**Anastasios John Kanellopoulos, MD**  
 Director, Laservision.gr Institute, Athens, Greece  
 Clinical Professor NYU Medical School, NY  
 Financial Interests: Alcon. Wavelight

# Post-LASIK ectasia in a pilot +1.50 -2.50@135: 20/40 Athens Protocol: PTK + topoPRK( +1 -1.75@ 140) + CXL At 3 years UCVA to 20/15!

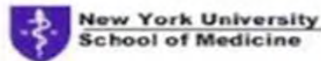


# Video

Short and long term complications of combined topography guided PRK and CXL (the Athens Protocol) in 412 keratoconus eyes (2-7 years follow-up)



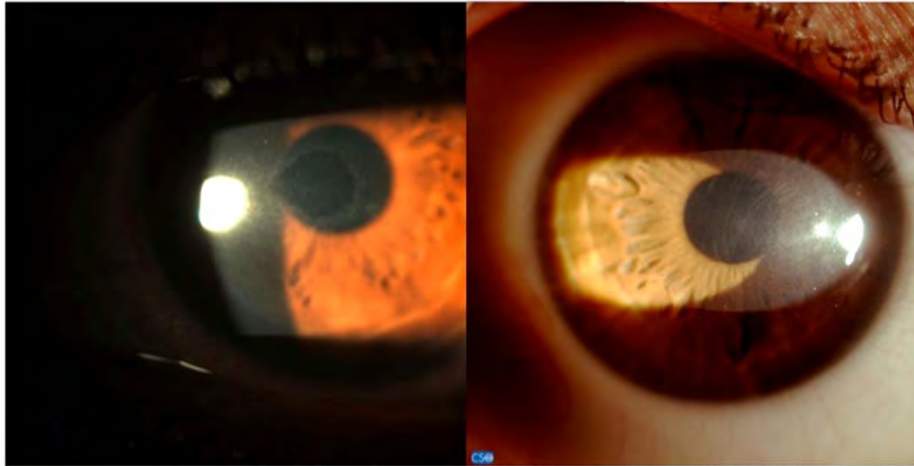
Anastasios John Kanellopoulos, MD  
Director, Laservision.gr Institute, Athens, Greece  
Clinical Professor NYU Medical School, NY



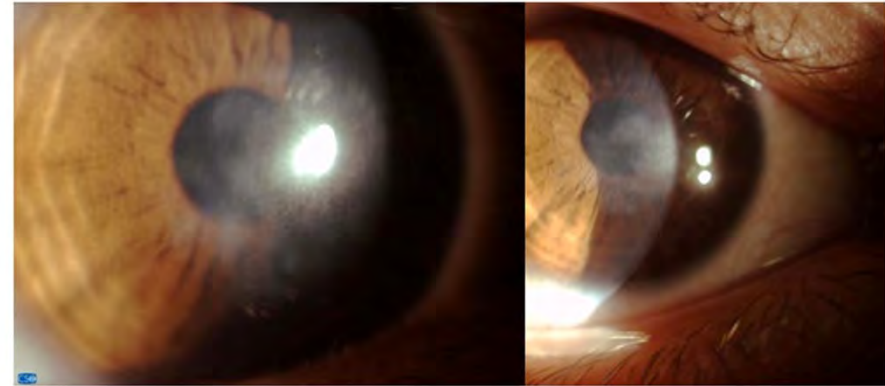
# Complications encountered:

- **Delayed epithelial healing:**
- Epithelial healing occurred in 75% of the cases on day 4, 15 of the cases by day 5 and 10% by day 10.
- **Postoperative pain:** 45% of the cases reported no significant postoperative pain, 25% described moderate postoperative pain and 30% severe post-operative pain over the first post-op day.
- **Epithelial scarring:** 25% of the cases showed Saltzman's-like epithelial scarring that persisted for an average 1 month, and resolved with lubrication (30%), bandage contact lens use and lubrication (25%), autologous serum administration besides, only 5% retained long term scarring
- **Regression:** 1.5% required second CXL treatment for regression
- **Other reports:** Infection, Herpetic keratitis, melts

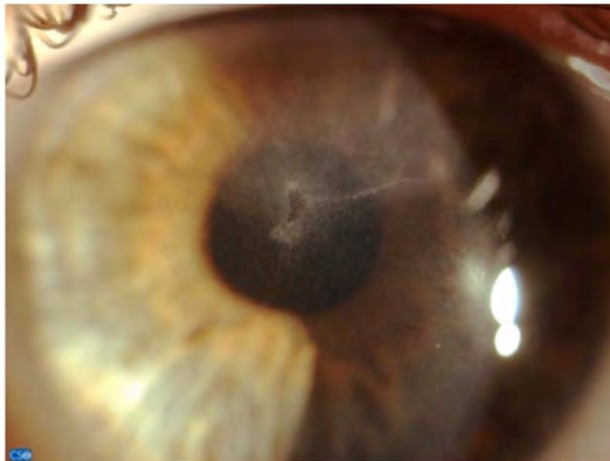
Healing delay-day4-ok on 1 month



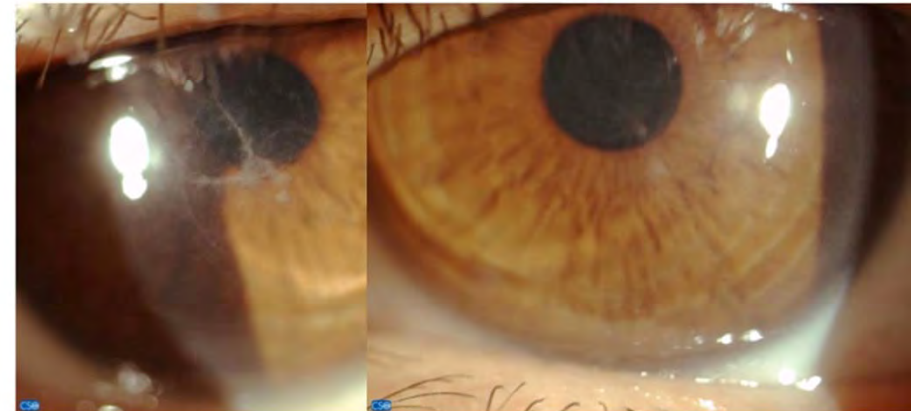
PRK-like haze 1 year after, in heavy sunbathing improved with steroids



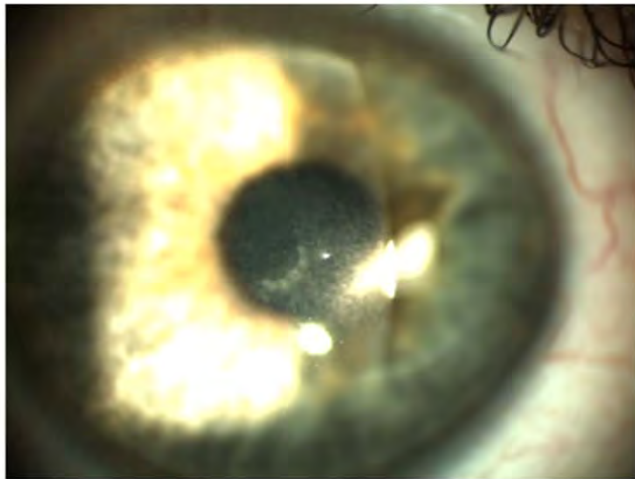
Week 2



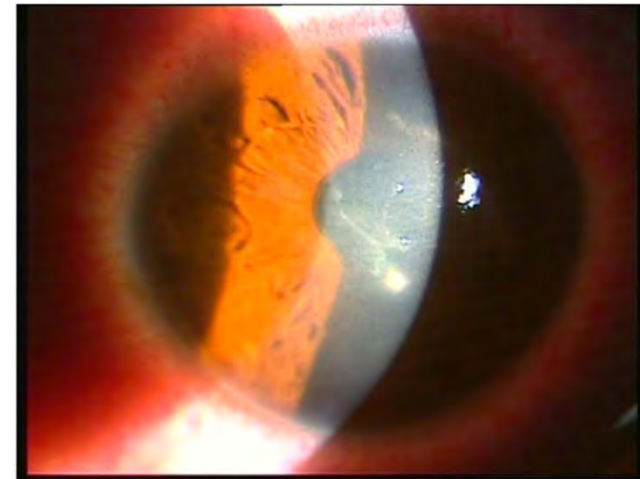
Week 2



Salzman's-like nodule(s) can persist to 3 months postop



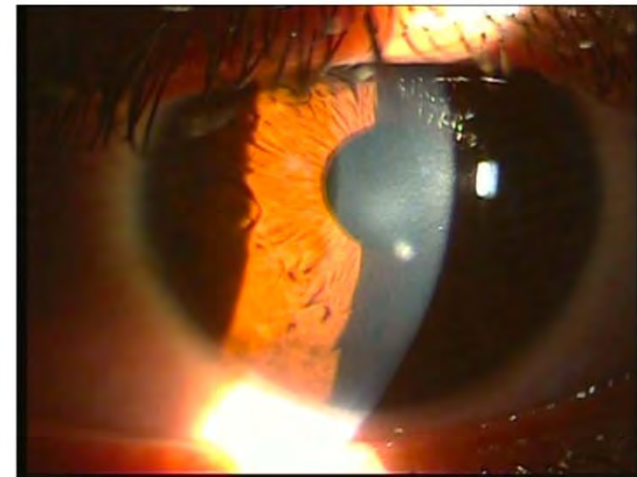
Delayed epithelial healing with  
white spots



Haze



Faint Scar and white spot



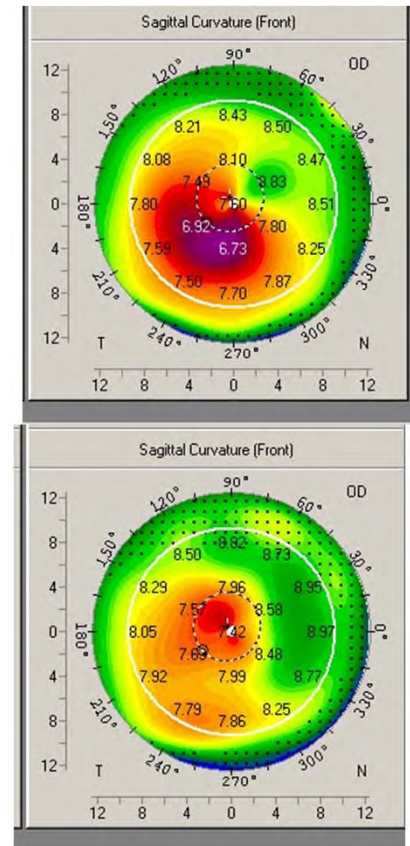
# Management

- Autologous serum
- Scraping the hyaline scar
- Bandage contact lens
- Ample Lubrication
- Blepharitis treatment (HC, Minocycline)
- Cyclosporine A drops (Restasis)



# Combined same-day topo guided PRK and CXL appear to be superior to the rehabilitation of KCN and ectasia.

- 1-one procedure
- 2-less PRK-associated scarring
- 3-Better riboflavin penetration
- 4-Less shielding of UV by Bowman's-wider CXL area
- 5-redistribution of cornea strain (biomechanics)
- 6-No need to remove cross-linked cornea
- Underscore refraction





# Conclusions

- Our experience additionally suggests synergistic effect when the two modalities (tgPRK and CXL) were combined.
- **Minor complications included post-op haze and delayed epithelial healing. There were minimal cases registered that failed to stabilize.**
- In our experience the Alcon/Wavelight topography guided platform has been very effective in predictably offering cornea normalization and enhanced visual function



**Thank You!**

**[www.brilliantvision.com](http://www.brilliantvision.com)**

