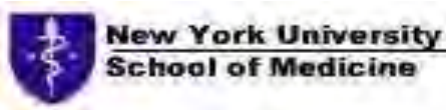


Laboratory Evaluation of a novel technique for myopia correction: Continuous wave laser cornea shrinkage coupled with CXL.

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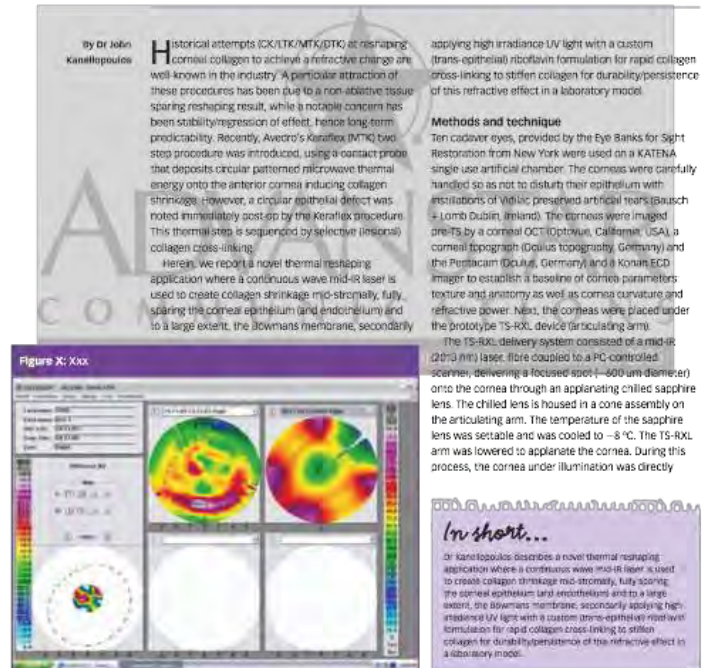


Financial Interests:

- Alcon/Wavelight,
- Bausch & Lomb,
- Seros Medical,
- Revision Optics,
- Ocular Therapeutix,

Laboratory evaluation of a novel technique for myopia correction

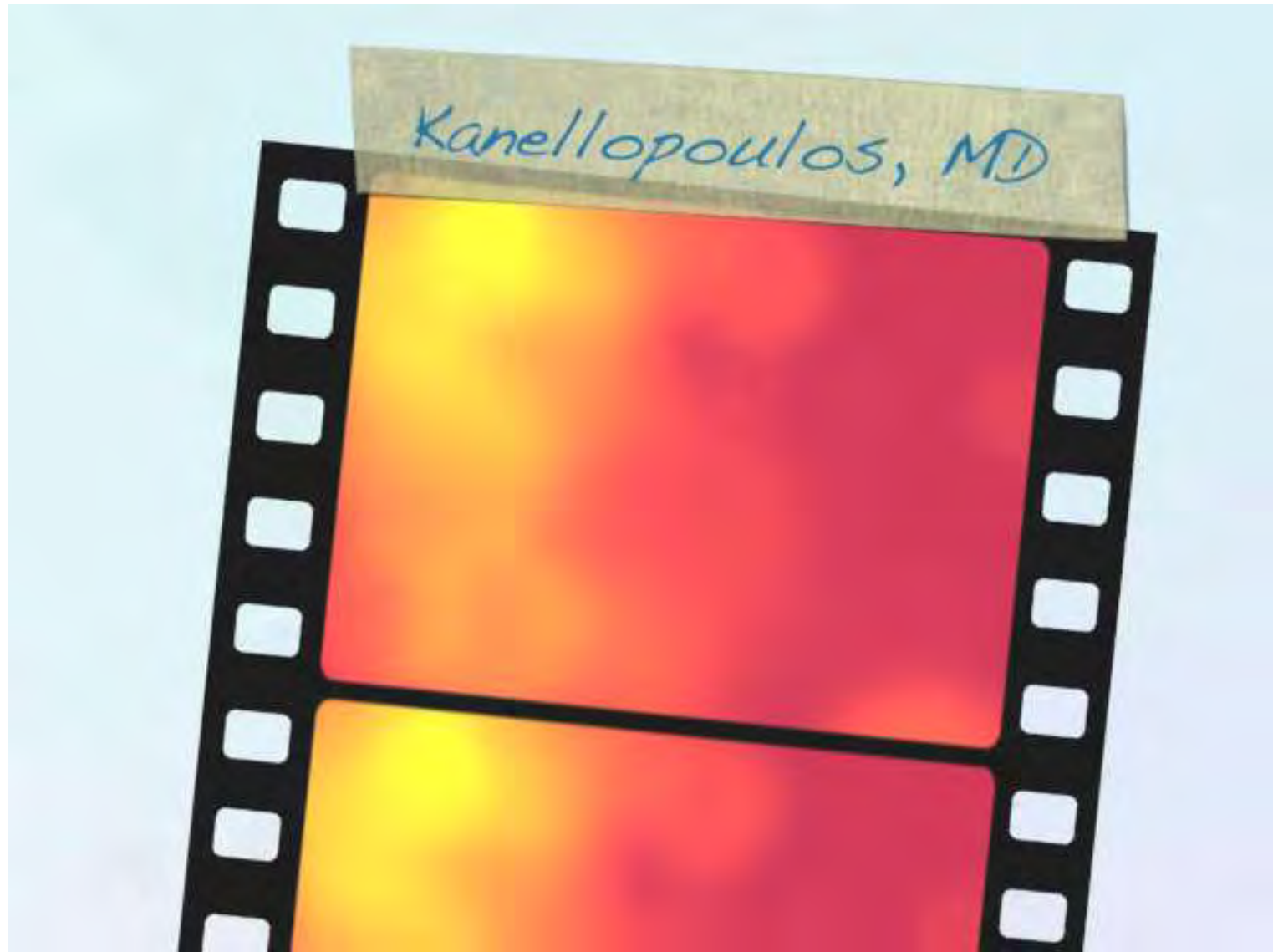
Continuous wave laser (CWL) cornea shrinkage coupled with CXL



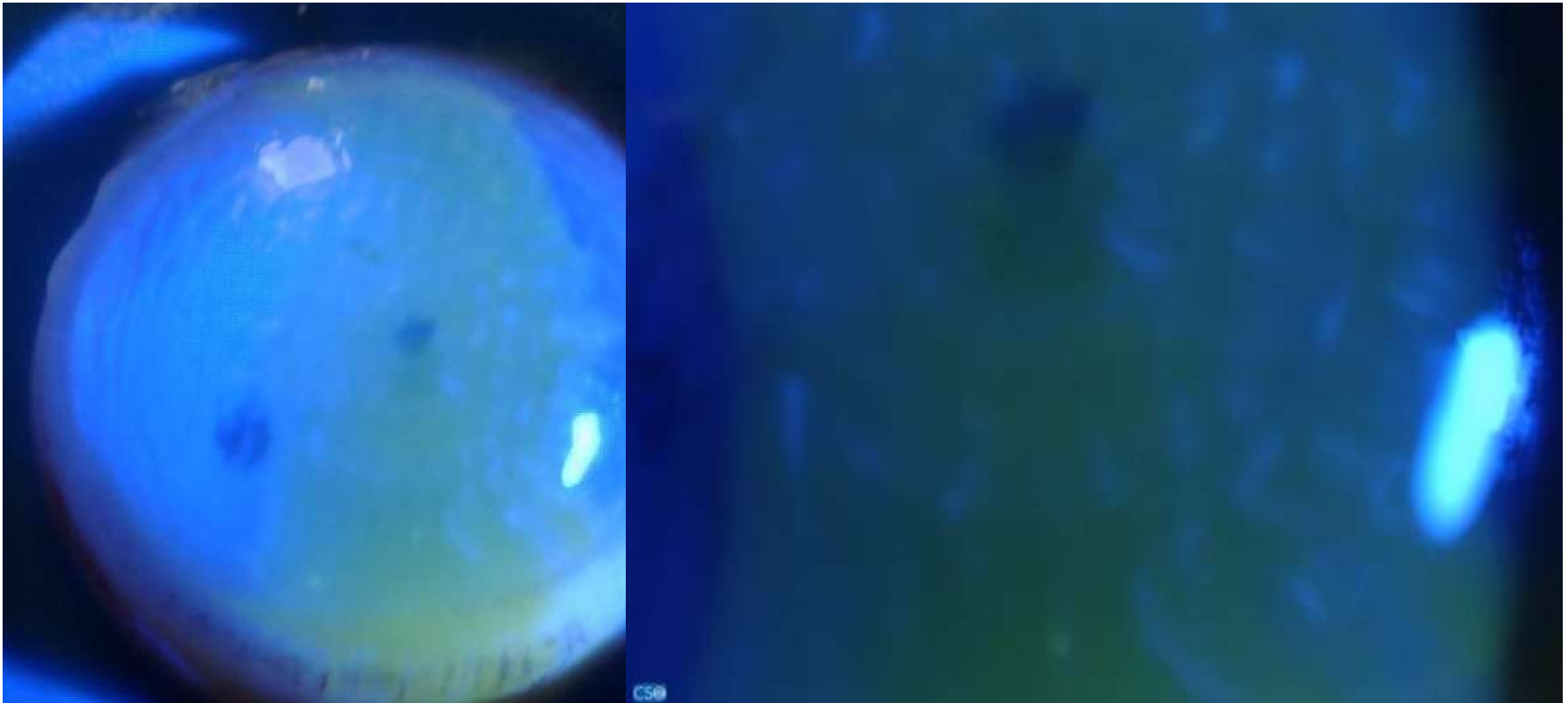
Methods:

12 cadaver corneas were evaluated with pre- and post-operatively with fluorescein dye staining, biomicroscopy, placido disc topography, Pentacam tomography and cornea OCT. Utilizing a cooled sapphire applanation disc 3 concentric ring-like intrastromal shrinkage treatments were applied with a continuous wave laser. CXL was then performed with the epithelium on, using 0.1% riboflavin solution and 10mw/cm² UV irradiation.

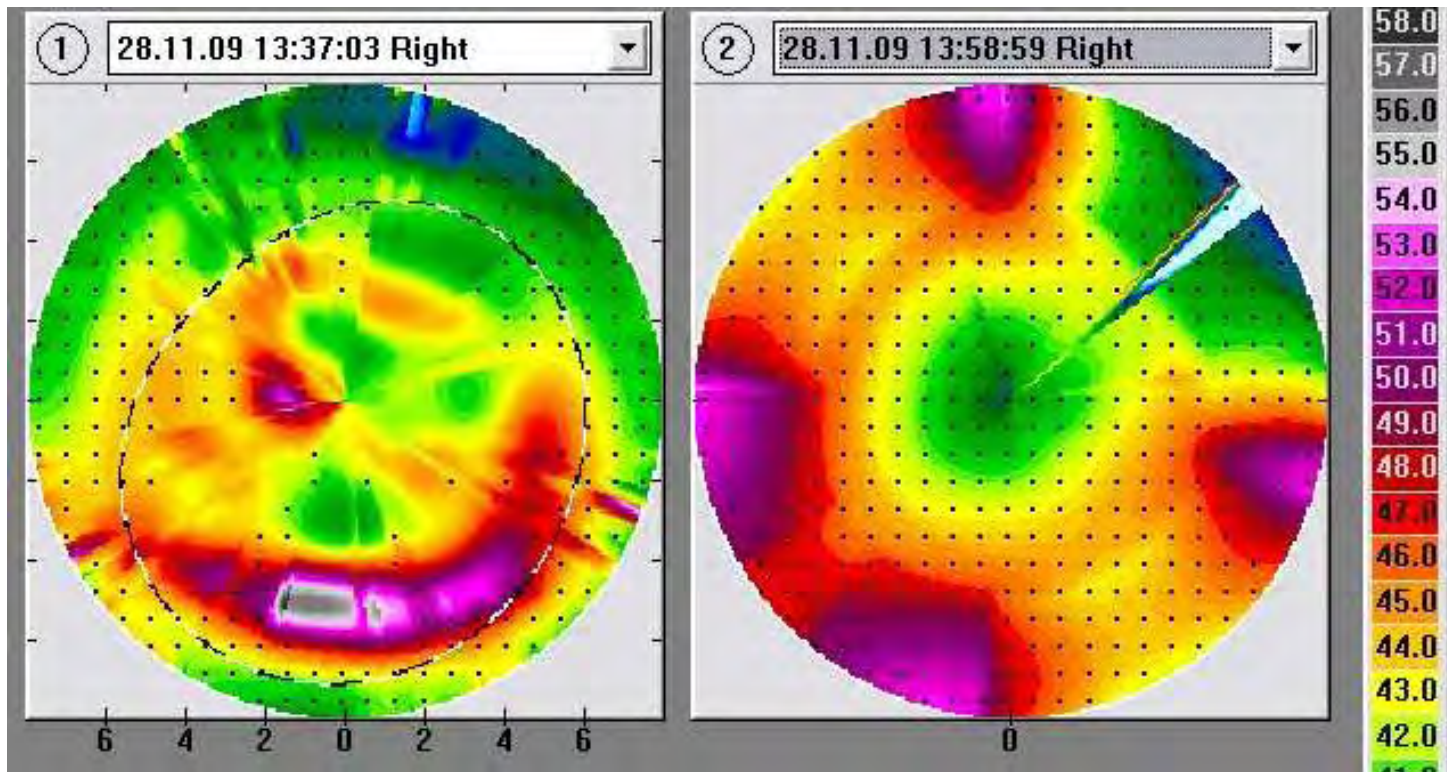




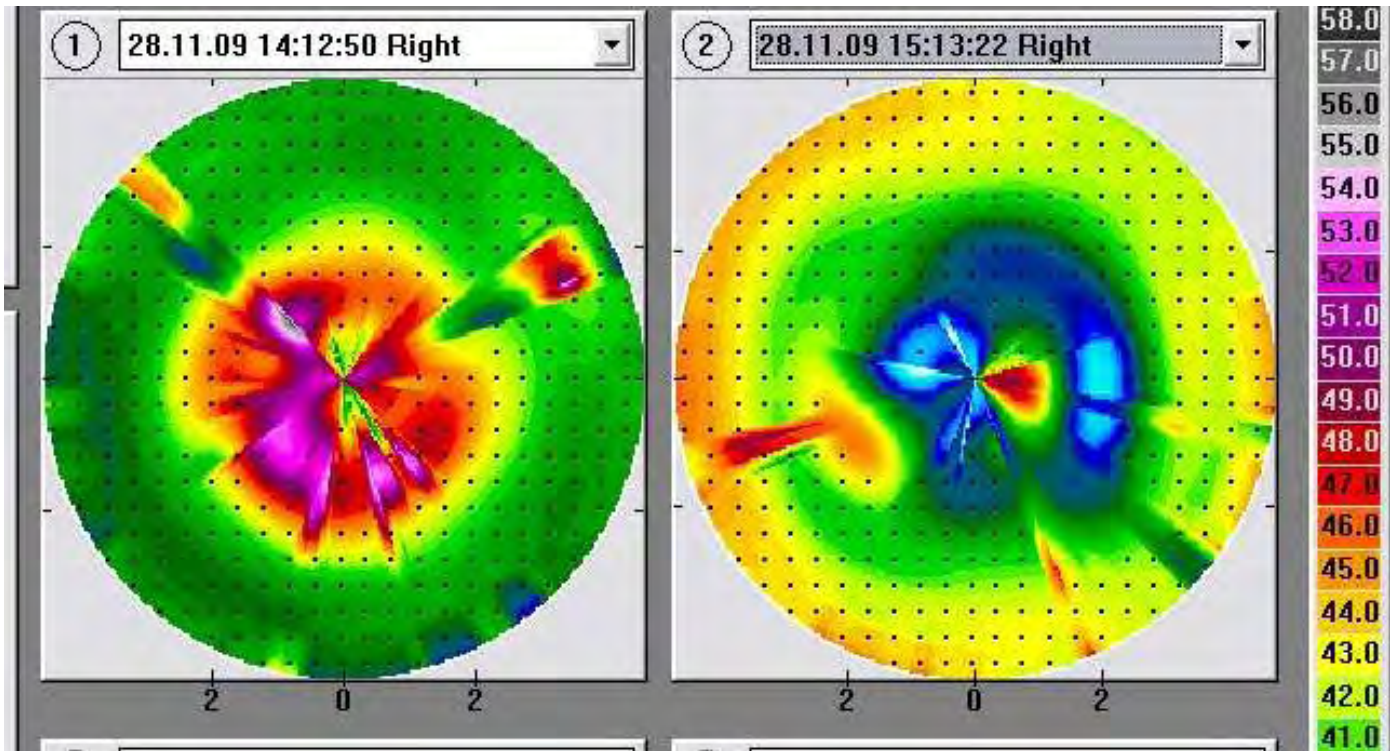
No epithelial defect



Central flattening



Flattening of cornea

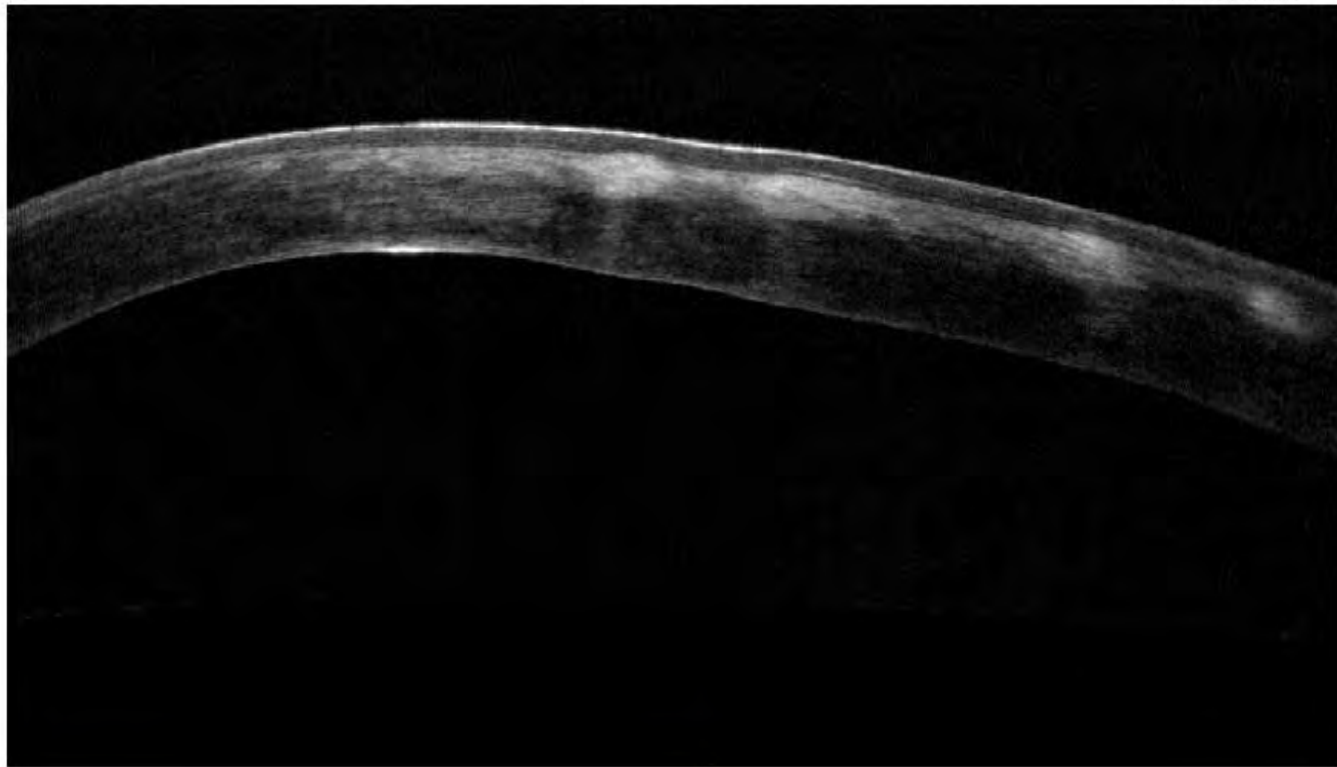


Cornea OCT changes

OD

LL - Line 551 = 40.8

6.00mm Scan Length



250 μm



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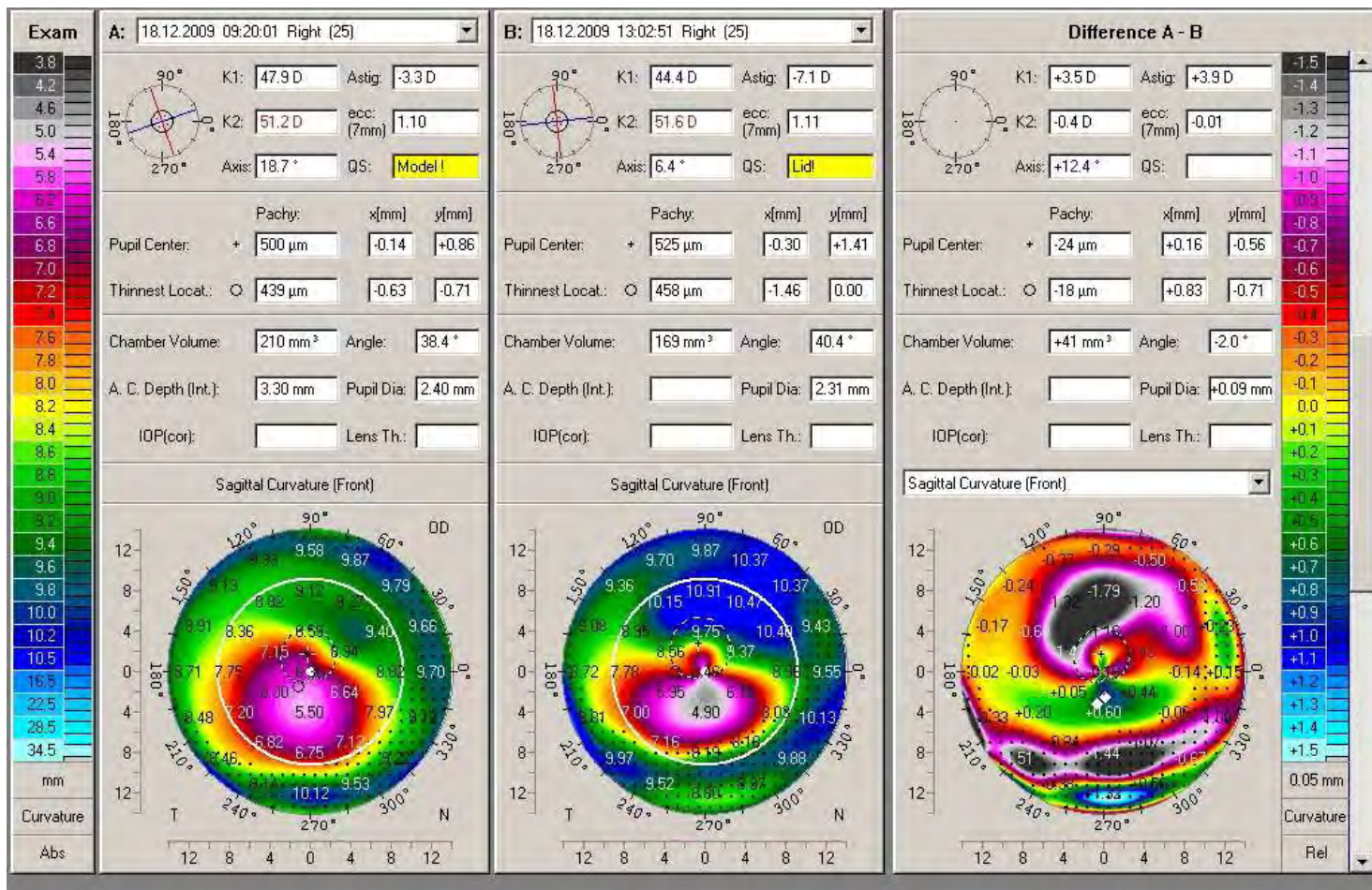


10 minutes postop



Cone “shrinkage” and CXL

6 diopters of flattening WITHOUT tissue removal!



8 months follow-up

No regression of the flattening effect!

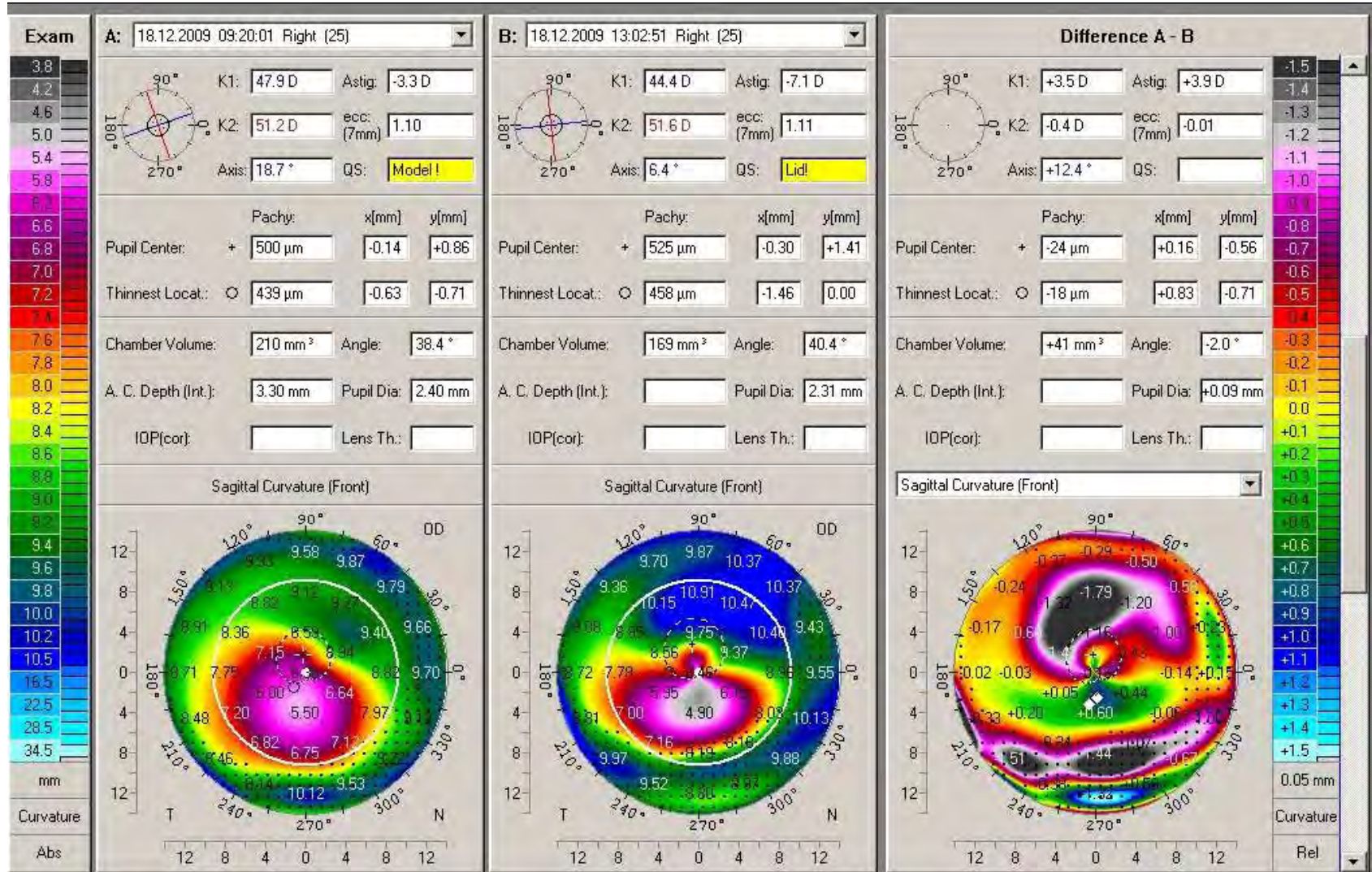


New York University
School of Medicine

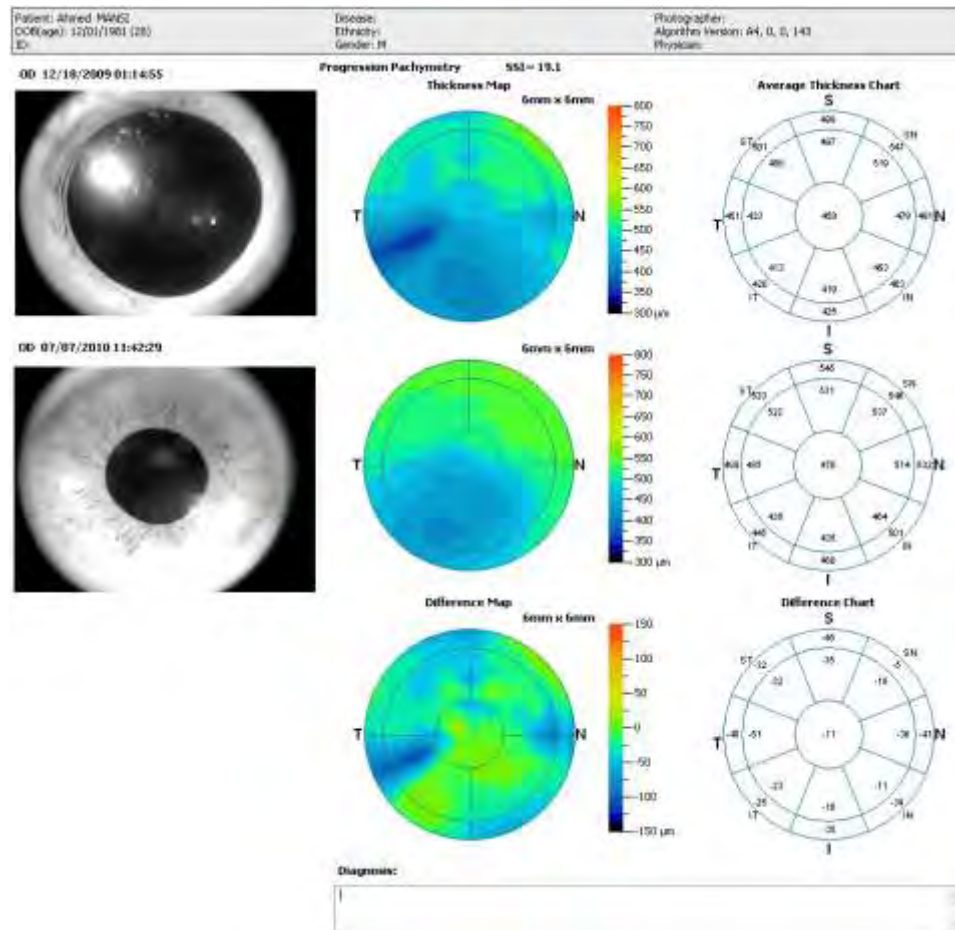
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8 months follow-up-no regression!



OCT pach difference 8mos

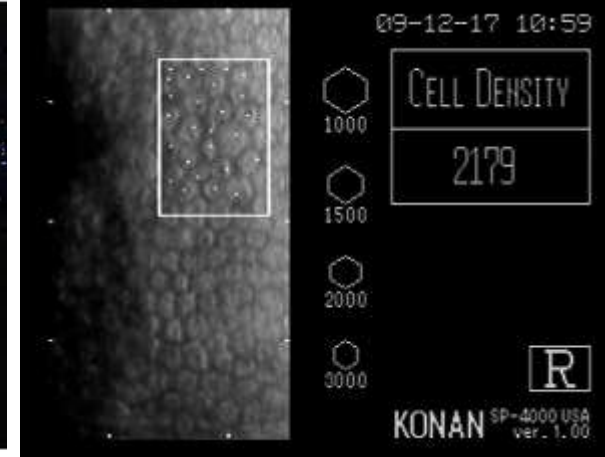
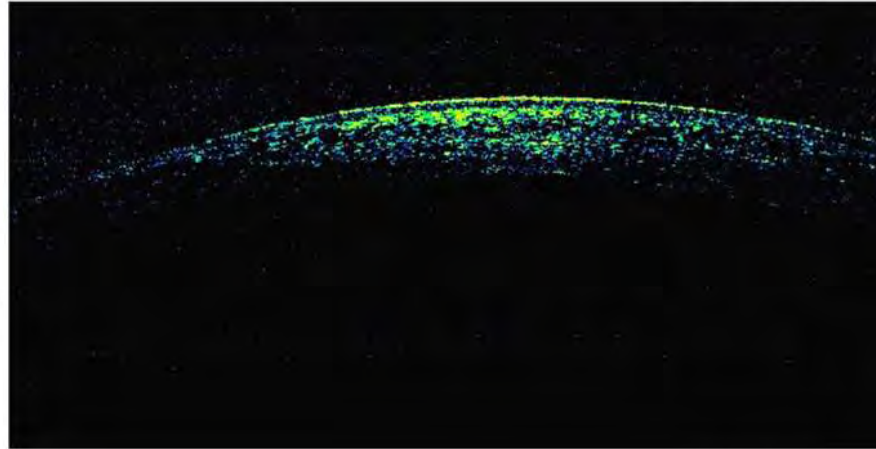
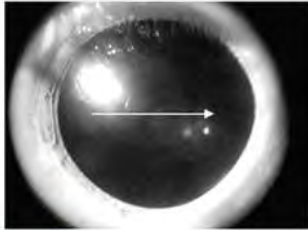


OCT images pre-post 8 mos

OD 12/18/2009 01:15:54

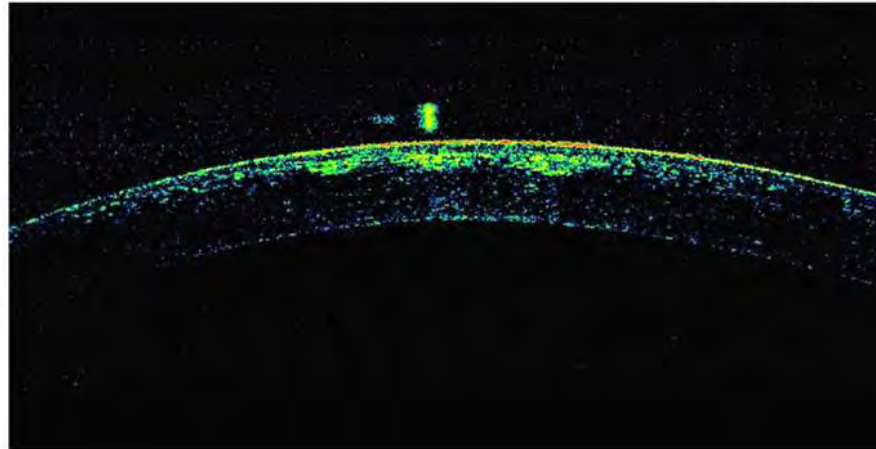
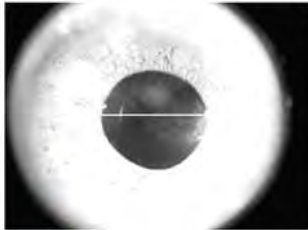
CL - Cross Line SSI= 19.1

6.00 Scan Size (mm)



OD 07/07/2010 11:46:08

6.00 Scan Size (mm)



Results: The laser treatment was noted by mid-stroma whitening, but no epithelial defect. Both topography measurements documented significant uniform cornea flattening of 4-8 diopters in a central round zone of 5 mm. cOCT documented stroma hyperefectivity 50 to 350 microns depth.

Conclusions: This novel, minimally invasive laser and CXL technique may provide an alternative for myopic cornea correction without tissue removal. Further studies are required to validate the efficacy and long term stability of these findings.



Thank you

