

Lasik in Difficult Situations

BY

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LASIK may NOT be a simple procedure

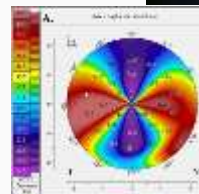
• Especially when facing such situations:

- High refractive errors
- Amblyopia, anisometropia
- Corneal Pentacam difficulties (Thin, Steep, KK suspect)
- Pediatrics, Older age, Mentally retarded Pts.
- Large pupil, Aniridia, Albinos, Nystagmus
- Local ocular pathologies (dry eye, Herpetic keratitis, Glaucoma, Myopic Chorioretinal deg, RD,...)
- Systemic diseases (DM, collagen diseases, thyroid orbitopathy, ...)

High refractive errors

- Myopia > 8-10D, Hyperopia > 4-6D, Astigmatism > 3-6D

- Residual stromal bed = Ablation depth
- Regression
- Residual errors, Surprises
- Thermal and humidity effects



Corneal
thickness

Refractive
error

Pupil size

Error
corrected

Flap
thickness

Ablation
zone

The larger the ttt zone, the BZ , Flying spot lasers, and Custom LASIK, the larger the ablated corneal tissue is.

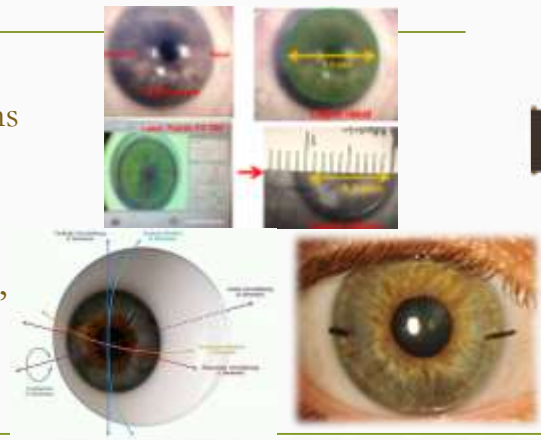
$$PTA = (FT + AD) / CCT$$

If PTA is $> 40\%$, it is significantly associated with the development of ectasia in eyes with normal preoperative topography.

A patient with a large myopic correction, large pupil, and thin cornea ? Advise against laser surgery and suggest an alternative refr. procedure.

High refractive errors

- **Myopia** $> 10-12D$; Femtosmile, monovision, Post seg. complications
- **Hyperopia** $> 4-6D$; Femtolasik, regression, accommodation
- **Astigmatism** $> 3-6D$; Femtolasik, axis marking, Cyclotorsion (25 Hz within a 15-degree).



Amblyopia = lazy brain = **Hopeful case**

- Documentation
- Special consent
- Full correction
- Exercise (occlusion/ penalization+ 2 pencil test)
- Prolonged close FU + report.



Anisometropia

- Documentation
- Special consent
- Monovision
- Exercise (occlusion/ penalization+ 2 pencil test)
- Prolonged Close FU+ report



Corneal Pentacam difficulties

- **Thin cornea;** <470 μ m

Hysteresis

PRK, Thinner femtoflap, Femtosmile Vs. ICL

- **Steep cornea;** >47 D

Femtolasik, smile

- **KK suspect;**

1st Glasses+ FU 3-6m

2nd Customized PRK+ combined epi-Off CXL

- **Thick cornea;** >580 μ m

Specular Microscopy

- **Flat cornea;** <38D

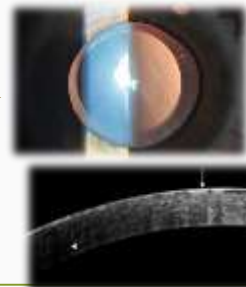
ICL

- **Pannus** and Vascularization

&mild surface **irregularities;**

AS-OCT

Customized PRK



Age of the patient

- **Pediatric:**

(unstable refraction, Hysteresis, cooperation)

Amblyopia???!!!

IV anaesthesia, fixation& centration, Shield Vs. Femtosmile

- **Mental Pts.**

OBSOLETE



- **Older pts;**

(Higher order aberrations, associated ocular diseases, lack of accommodation, T3 dry eye,.....)

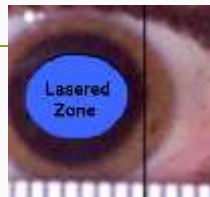
Pt. selection, thorough ophthalm. examination, repeated ref. trials, ...

Customized (Topo Vs. WF guided laser ablation)and full distant correction Vs. Presbyond Vs. Monovision



Large pupil, Aniridia, Albinos, Nystagmus

- **Large pupil ;** (Large Ablation zone & depth, Hyperopia & astigmatism, glare, poor scotopic vision, Tracking system)



- **Aniridia, Albinos, Nystagmus;** (Pentacam, eye tracking system 1050 (fps), iris registration software, target fixation & centration.)

Low vacuum Vs. IV anaesthesia+ fixation, fast laser Fluence



Local ocular pathologies

- Dry eye
- Herpetic keratitis
- Pseudophakia, PKP
- OHT, Glaucoma, Filtering surgery.
- Myopic Chorioretinal deg.
- RD (Buckle, Vitrectomized , SO filled,...)
- Neuropathies.

Dry eye

- Careful Screening To exclude.....
- Routine pre-operative ttt.
- Femtosome>> Lasik> PRK
- Prolonged course of PF tear substitutes (months).



Herpetic keratitis



- Recurrence & reactivation.

Prophylactic topical & systemic, pre- & post-operative antiviral (only a 50% reduction in the risk of recurrence).

- **Contraindications:** corneal anesthesia, vascularization, recent attack
- PRK ????!!!!!

Pseudophakia

- Bioptics
- PRK, femtosemle, femtolasik Vs. IOL exchange



Penetrating keratoplasty

- Irregular astigmatism, High residual refractive error
- PRK, femtosemle, femtolasik



Ocular HTN & Glaucoma



- High suction pressure, post ablation IOP measurement, bleb interfere with suction ring, Steroid induce glaucoma
- PRK >> Femtosome or F. lasik with decreased suction time
- Care with post-operative steroids & antiglaucoma drugs



Myopic Chorioretinal degeneration and RD.

- Suction ; retinal tears , MH & Subfoveal hge, PVD & RD
- Late flap dehiscence during argon laser Or RD surgery
- Scleral buckle interferes with suction ring, recurrent RD, Buckle removal induced error.
- Careful examination of the retinal periphery , refractive surgery corrects only the refractive aspect and not the complications of the myopic eye
- ICL >> Femtosome or F. lasik with decreased suction time



Home Message

- A good lasik surgeon knows well when **not to operate**
- A good lasik surgeon knows how to **avoid complication** more than how to manage.
- Patient must know well details and **touch** the target of procedure.
- Detailed **consent and documentation** is a matter
- The target of ordinary lasik surgery is 6/-----happy, but of difficult cases is 6/-----**better and safe.**



Thank
You