Comparison of 1000 Femtosecond to 1000 Mechanical Microkeratome LASIK Cases

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Methods

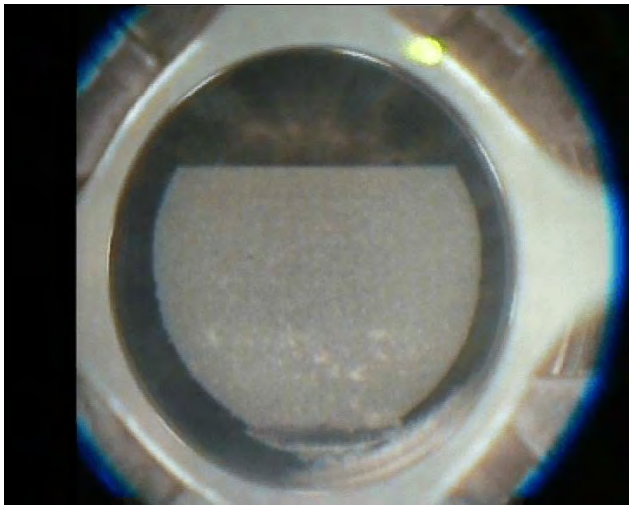
- 1000 consecutive cases in our refractive surgery center in Athens, Greece are screened for the following elements:

Refraction, BSCVA, UCVA, pentacam topography (Wavelight oculyzer), 4-wavefront analysis (Wavefront Tsernning analyzer), pupilometry (Procyon),

6-contrast sensitivity (Vector Vision) and a complete slit lamp biomicroscopy including dilated fundus exam.

The results were compared retrospectively with a matched group of 1000 cases treated previously with the M2 microkeratome and the same excimer laser (Wavelight 400Hz EyeQ)

Video



Results

- In 1.000 consecutive cases using the Intralase FS60 femtosecond laser and the Wavelight 400Hz Eye-Q:
- we treated 825 myopic eyes and 175 hyperopic eyes.
- The results were for myopia pre-op UCVA 20/80 to 20/17 with mean flap thickness 105 microns (+/-5), hyperopia 20/60 to 20/15 with mean flap 132 microns (+/-7) .

Results (2)

- Of the 1000 cases, there were 3 minor flap mishaps. One of these was managed intra-operatively (loss of suction) the other 2 cases were retreated within two months of the primary procedure with PRK and without loss of BSCVA.
- There was no flap slippage, epithelial ingrowth or diffuse lamellar keratopathy (DLK) in any case - compared to 12 cases with a mechanical microkeratome

Intralase FS 60 Vs M2 1000 cases

incomplete flaps	3 2-Completed 1-PRK	6- all PRK
Flap striae-suturing	0	6
Epi ingrowth	0	22
flap myopia	105 +/- 5 8.1mm	100 +/-25 8.9mm
flap hyperopia	135 +/- 7 9.4mm	127 +/- 35 8.9 mm
buttonhole	1	3
Epi-abrasion (ABM dystr)	2	65
DLK Light HSS	0 (maybe 1 late post abrasion) 0	0 0

Conclusions

- In this large study we found that: for a single surgeon and utilizing the same excimer laser, femtosecond compared to mechanical microkeratome LASIK appears to be superior as it reduces the risks for DLK, flap complications (such as striae, epithelial abrasions and ingrowth -especially in hyperopic cases) and may result in safer, more effective visual rehabilitation