

FP 2880



Evaluation of novel planning settings in the reduction of Opaque Bubble Layer in LASIK flaps created with the FS200 femtosecond laser

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Purpose

- To evaluate the extent and incidence of Opaque Bubble Layer (OBL) in LASIK flaps created with the Alcon/WaveLight FS200 femtosecond laser as a result of a recent change in flap programming parameters aiming to further reduce the indent and the extent of OBL.

A.John Kanellopoulos and George Asimellis, *Digital analysis in flap parameter accuracy and opaque bubble layer objective assessment in femtosecond laser assisted LASIK. A novel technique. Clinical Ophthalmology. 2013;7:343-51*

A.John Kanellopoulos and George Asimellis, *Essential Opaque Bubble Layer elimination with novel LASIK flap settings in the FS200 Femtosecond Laser. Clinical Ophthalmology. 2013;7:765-70*

A.John Kanellopoulos and George Asimellis, *FS200 femtosecond laser LASIK flap digital analysis parameter evaluation; comparing two different types of patient interface applanation cones. Clinical Ophthalmology. 2013;7:1103–08*

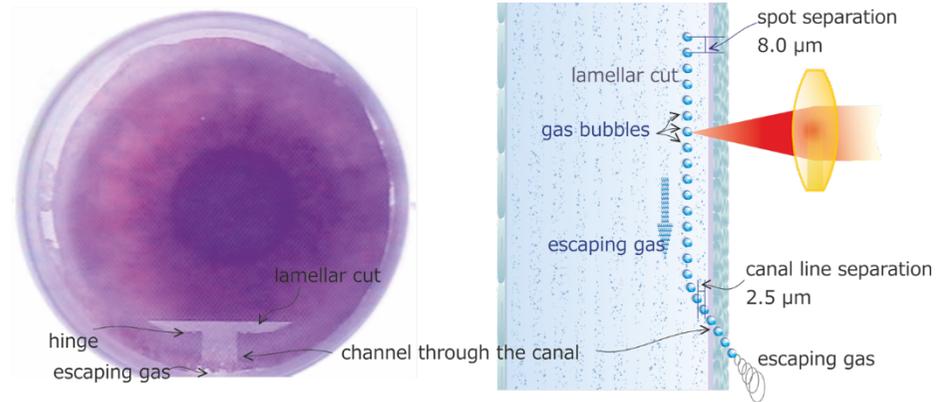


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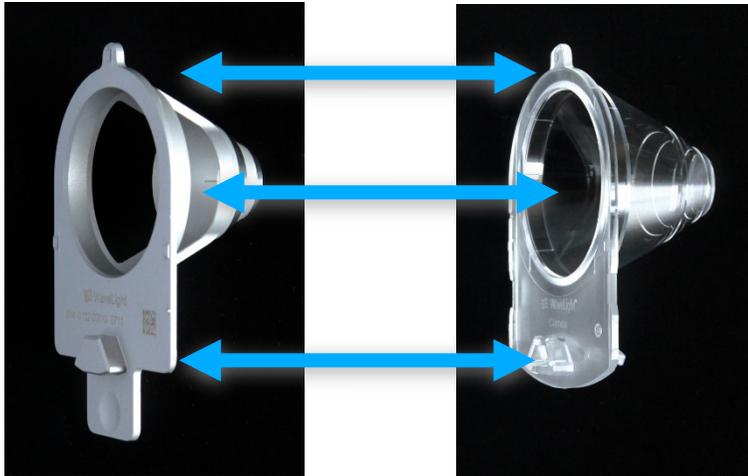


Materials

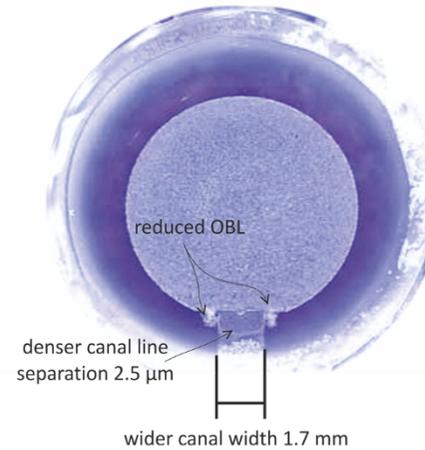


- Metal

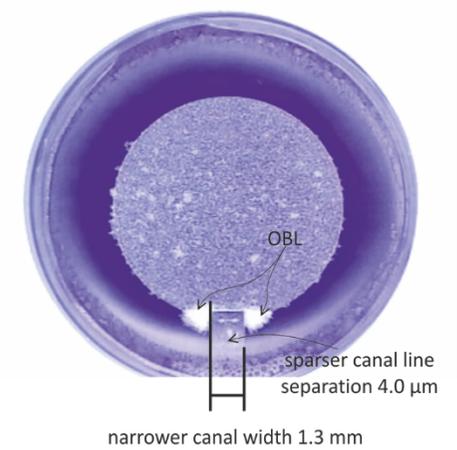
- Molded Plastic



Example from Group A



Example from Group B



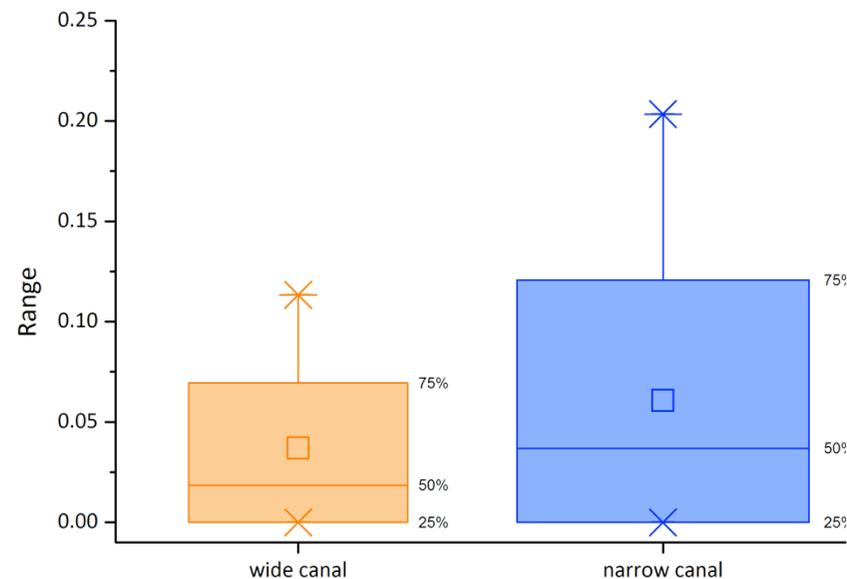
Methods

- Intraoperative digital images of the flaps from 36 consecutive patients (72 eyes) subjected to bilateral femto-second-assisted LASIK were analyzed with computerized proprietary technique.
- The OBL incident and extent was measured and reported as % over the entire flap area. In this group A, flap creation was performed with a 1.7 mm wide canal, implemented as an updated design, aiming to reduce OBL extent.
- The same OBL parameters were investigated and compared in an age- and procedure-matched group B, in which the previous standard setting of 1.3 mm wide canal was implemented.



Results

- In group A, in which the updated canal width parameters were employed, the average extent of OBL was in average 3.69% of flap area (range from none to 11.34%).
- In group B the respective values were 6.06% (from none to 20.24%).
- We found the difference to be statistically significant (one-tailed $p < 0.001$).



Conclusions

- This study suggests that there is significant reduction in OBL incidence and extent when employing novel LASIK flap ventilation canal parameters of width and spot line separation.

