

Femtosecond-Assisted Laser in situ Keratomileusis with De Novo Flap Creation Following Previous Microkeratome Laser in situ Keratomileusis [Letter]

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Dear editor

I have read with great interest the article by Rush et al. on 'Femtosecond-Assisted Laser in situ Keratomileusis with de novo Flap Creation Following Previous Microkeratome Laser in situ Keratomileusis'.¹ I would like to compliment the authors for describing an effective technique for creating a new flap with the femtosecond laser in patients undergoing repeat LASIK after previous microkeratome LASIK. However, I would like to raise a few queries.

Firstly, vertical side cut configuration of the flap reduces the chances of epithelial ingrowth when compared with an angulated cut.^{2,3} The authors in this article mention a 30 degree cut and fortunately none of the eyes had an epithelial ingrowth in the post-operative period.

Secondly, the maximum flap diameter by default mentioned in the article is 9 mm. Some of the eyes underwent hyperopic and high astigmatic corrections where the ablation zone is usually larger than myopic ablations and predominant ablations happen in the near periphery of the cornea. It is not clearly mentioned about any modifications done for such corrections.

Thirdly, all the eyes had a flap diameter (9 mm) so that it could fit outside the prior microkeratome flap. The mean intended flap depth for the study population was 158.8 ± 23.2 microns with range of 130–190 microns with 9 of the flaps (52.9%) posterior to the original flap. That means that 8 out of 17 eyes had the new flap anterior to the existing flap. If the new flap diameter was larger and anterior to the prior microkeratome flap, the new flap while lifting could lead to a 360 degree peripheral ring-like tear due to the cuts between the old and new flaps. Hence, careful and slow dissection of the new flap has to be done so as not to cause any amputation or loss of peripheral part of the flap (corneal tissue).

Also, performing another interface with a femto energy in an eye with an existing flap can lead to other complications such as vertical gas breakthrough.⁴ The original interface might act as a low-resistance pathway for the gas bubbles to expand, resulting in formation of a buttonhole. This phenomenon has to be kept in mind when performing a femto flap in such operated corneas.

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It has been hypothesized that performing the ablation at a different plane than the original ablation might have an adverse effect on the visual outcomes.⁵ It would have been better if the authors had mentioned the higher order aberrations in the post-operative results.

Disclosure

The author reports no conflict of interest in this communication.

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