Visual Quality After SMILE and LASEK for Mild to Moderate Myopia

We read with interest the article by Yu et al., in which the authors compare the results obtained with small incision lenticule extraction (SMILE) versus LASEK performed to correct moderate myopia. We have several comments to make regarding this study.

First, the statement made by the authors in the introduction section that SMILE has been demonstrated to obtain better quality of vision and more precise correction of myopia (quoting the study by Sekundo et al.) as a reference is clearly incorrect and it is an evident misquotation. The study by Sekundo et al. is not a comparative study, it is only a descriptive study, and only the results obtained using SMILE in an unselected myopic population are reported. Furthermore, the accuracy of the correction obtained by Sekundo et al. (80% with less than 0.50 diopters (D) residual refractive error) is clearly worse than the results reported previously by our team, also using femtosecond laser-assisted LASIK to correct myopia in an unselected population (thus with the same amount of myopia) and showing that 90% of eyes had less than 0.50 D postoperative refractive error after femtosecond laser-assisted LASIK.

Second, the statement made by the authors, also in the introduction section, that “SMILE leads to smaller corneal biomechanical changes and subsequently the induction of fewer higher-order aberrations” quoting the article by Ortiz et al. as a reference is also a clear misquotation. Ortiz et al. compare the changes in the anterior corneal curvature after flap creation with either a mechanical microkeratome or a femtosecond laser-assisted LASIK laser. In this case, the reference quoted by the authors as a scientific proof of their statement deals with a completely different issue.

Misquotation in the scientific literature should not be accepted because the purpose of a well-written article is to increase our scientific knowledge and should be based on previous scientific findings (quoted as references), not in nonscientific statements, and even worse, based in a fiction, as the introduction of the article by Yu et al. seems to largely be.

In addition, we believe that the main conclusion of the article by Yu et al. is clearly biased. In other words, what the authors really compare are the results obtained by SMILE versus LASEK performed without using intraoperative mitomycin C, and using an ablation profile not provided (unfortunately) by the authors in the methods section. It is well known that mitomycin C inhibits the haze that may appear after surface ablation. Even mild degrees of haze make the subjective visual function of the patient worse, with more haloes, etc. In fact, this is just what the authors found in their study.

On the other hand, almost every modern excimer laser (such as the MEL 80) has advanced profiles of ablation, designed to reduce (or even to customize) the spherical aberration. The authors should clarify what profile of ablation was used in their study.

REFERENCES


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The authors have no financial or proprietary interest in the materials presented herein.

Reply

We thank Drs. Teus and Garcia-Gonzalez for the letter regarding our article “Comparison of Visual Quality After SMILE and LASEK for Mild to Moderate Myopia.”

The first concern raised is that we quoted the article by Sekundo et al. to interpret the surgery effect of SMILE and femtosecond laser-assisted LASIK. The reference should have been to the article by Lin et al. Unfortunately, due to our typographical mistake, the reference was misquoted. We apologize for not identifying this error even after multiple rounds of proofreading.

The second point concerns the quotation of the study by Ortiz et al. The sentence, “this is due to the fact that SMILE is a flapless, minimally invasive, and all-femtosecond laser refractive procedure, which leads to smaller corneal biomechanical changes and subsequently the induction of fewer higher-order aberrations” was initially two separate
sentences. The first sentence was, “this is due to the fact that SMILE is a flapless, minimally invasive, and all-femtosecond laser refractive procedure.” It refers to the study by Lin et al. to interpret this feature of SMILE. It is an objective fact that we did not add this reference. The second sentence was, “the femtosecond laser procedure leads to smaller corneal biomechanical changes and subsequently the induction of fewer higher-order aberrations.” It refers to the study by Ortiz et al. to interpret that femtosecond laser-assisted LASIK was better than LASIK. After editing and embellishing, the sentences became one, and with the results by Lin et al. and the article by Ortiz et al., it is possible to speculate that the all-femtosecond laser procedure SMILE can lead to smaller corneal biomechanical changes and the induction of fewer higher-order aberrations; however, this is not what we intended.

In addition, the LASEK was performed with the tissue-saving ablation profile and without MMC, and there was no patient in the LASEK group having haze until 3 months postoperatively. Thus, we do not believe that the halos in our patients came from haze.

We appreciate the opportunity to clarify these misunderstandings about our study methodology and results.

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