Reviewer’s report

Title: Visual and Optical Quality Outcomes of SMILE and FS-LASIK for myopia in the very early phase after surgery

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Reviewer: Alejandro Tello

Reviewer's report:

In the Abstract, second line, it reads: " …frequently applied to cure…". It should read: "……frequently used to treat…"

In the Abstract, line 5, it reads: "…procedures for the treatment of myopia (the major type of refractive errors) in the early phase,…". This adjective is not clear. Although in some countries of Southeast Asia myopia is the most common refractive error, currently this is not the case in many countries [for instance in a recent national study in a country in South America prevalence estimates of refractive errors were: hyperopia 32.3%, myopia 12.9%, mixed astigmatism 2.8% and anisometropia 1.9% (Galvis V, Tello A, Otero J, Serrano AA, Gómez LM, Camacho PA, López-Jaramillo JP. Prevalence of refractive errors in Colombia: MIOPUR study. Br J Ophthalmol. 2018 Jun 26. pii: bjophthalmol-2018-312149. doi: 10.1136/bjophthalmol-2018-312149. [Epub ahead of print]). Therefore the sentence could read simply: "…procedures for the treatment of myopia in the early phase,…".

In the Abstract, line 6, it reads: "…the divergence of OSI (Objective…". It should read: "…the differences of OSI (Objective…"

In the Abstract, line 10, the sentence: "…After analysis, the divergence of OSI, MTF cutoff…", should read: "…After analysis, the differences of OSI, MTF cutoff…"

In the Abstract, line 11, the sentence: "…were not significantly between SMILE and FS-LASIK (p>0.05)…", should read: ""…were not statistically significant between SMILE and FS-LASIK (p>0.05)…"

In the Abstract, line 11, the sentence: "…the value of OSI in SMILE group were significantly higher than those of FS-LASIK group at 2h and 4h after surgery (p<0.05)…", should read: "…the values of OSI in SMILE group were significantly higher than those of FS-LASIK group at 2h and 4h after surgery (p<0.05)…"

In the Abstract, line 13, the sentence: "…As for the subjective symptoms, the number of patients in SMILE group were lower than those in FS-LASIK…" should read: "…As for the subjective symptoms, the number of patients in SMILE group complaining of (include here the explored symptoms) was
lower than those in FS-LASIK…"

Page 1, line 41. The sentence: "…to cure myopia…" should read: "…to treat myopia…".

Page 1, line 45. In the sentence: "…for the treatment of myopia (the major type of refractive errors) in the early phase…", the use if the words "major type" is not clear. Although in some countries of Southeast Asia myopia is the most common refractive error, currently this is not the case in many countries [for instance in a recent national study in a country in South America prevalence estimates of refractive errors were: hyperopia 32.3%, myopia 12.9%, mixed astigmatism 2.8% and anisometropia 1.9% (Galvis V, Tello A, Otero J, Serrano AA, Gómez LM, Camacho PA, López-Jaramillo JP.Prevalence of refractive errors in Colombia: MIOPUR study. Br J Ophthalmol. 2018 Jun 26. pii: bjophthalmol-2018-312149. doi: 10.1136/bjophthalmol-2018-312149. [Epub ahead of print])]. Therefore the sentence could read simply:"…for the treatment of myopia in the early phase…"

Page 1, line 47. The sentence: "…the divergence of OSI (Objective…" should read: "…the difference of OSI (Objective…"

Page 1, line 57. The sentence: "…After analysis, the divergence of OSI, MTF…", should read: "…After analysis, the differences of OSI, MTF…"

Page 1, line 60. The sentence: "…were not significantly between SMILE and…", should read: "…were not statistically significant between SMILE and…"

Page 2, line 1. The sentence: "…value of OSI in SMILE group…" should read: "…values of OSI in SMILE group…".

Page 2, Line 3. The sentence: "…As for the subjective symptoms, the number of patients in SMILE group were lower than those in FS-LASIK…", should read: "…As for the subjective symptoms, the number of patients in SMILE group complaining of (include here the explored symptoms) was lower than those in FS-LASIK"

Page 2, line 20. There are some issues in the sentence: "…Recently, Small Incision Lenticule Extraction (SMILE) procedure has been applied, and gradually substituted the conventional Femtosecond Laser-assisted in situ keratomileusis (FS-LASIK) in the clinical treatment for myopia and myopic astigmatism[1-4]…" Firstly, the "conventional" LASIK is not the Femtosecond Laser-assisted, but the microkeratome assisted. Secondly, in order to state what the authors indicated with regard to the frequency of SMILE procedures in the world, they would need statistical data to support the affirmation. In fact, it is very improbable that globally the number of SMILE procedures reach the number of FS-LASIK, and in addition it is very probable that the number of microkeratome assisted LASIK procedures far exceeds the number of the other two techniques added (SMILE & FS_LASIK).

Page 2, line 45. The sentence: "…was regarded as the safer.." should read: "…has been regarded as a safer..

Page 2, line 49. The sentence: "..with the risk of post-operational corneal flaps.." is not clear. The authors maybe meant: "..with the risk of post-operative corneal flap complications.."
Page 2, line 49. The sentence: "...It was also postulated that the visual recovery would take longer time for SMILE compared with LASIK..." should read: "...On the other hand, it has been postulated that the visual recovery would take longer time for SMILE compared with FS-LASIK..."

Page 2, line 53. The sentence: "...It had been reported that both SMILE and FS-LASIK were safe, effective..." should read: "...It has been reported that both SMILE and FS-LASIK are safe, effective..."

Page 2, line 55, the sentence: "...after assessing clinical parameters after surgeries for follow-up studies enduring months..." is not clear. Probably the authors meant: "...when assessing clinical results several months after the surgeries..."

Page 3, line 7. The sentence: "...post-operational visual recovery..." should read: "...post-operative visual recovery..."

Page 3, line 16. The sentence: "...30 subjects respectively for the SMILE and FS-LASIK group (60 eyes for each group)...." Should read: "...: "...30 subjects (60 eyes) for each group (SMILE and FS-LASIK) ...."

Page 3, line 18. It reads: "...All of the subjects were voluntary to undergo SMILE or LASIK..." It is very important to clarity whether both eyes of each patient were assigned to one group (both for SMILE or both for FS-LASIK) or if the distribution was performed by eyes.

Page 3, line 28. It reads: "...There was no significant difference for best corrected visual acuity (BCVA)...". According to the current standardized terms it should read: "...There was no significant difference for corrected distance visual acuity (CDVA)...." (Dupps WJ Jr, Kohnen T, Mamalis N, Rosen ES, Koch DD, Obstbaum SA, Waring GO 3rd, Reinstein DZ, Stulting RD. Standardized graphs and terms for refractive surgery results. J Cataract Refract Surg. 2011 Jan;37(1):1-3. doi: 10.1016/j.jcrs.2010.11.010.)

Page 3, line 57. It reads: "...As for FS-LASIK, track distance...". What was the devide used to perform FS-LASIK?

Page 4, line 24. The sentence: "...Spherical refractive errors were automatically corrected by the double-pass system, whereas cylindrical defects were corrected by external cylindrical lenses" is not clear and seems to be superfluous.

Page 4, line 40. The sentence: "...the divergence of OSI..." should read: "...the differences of OSI..."

Page 4, line 45. It reads: "...visual acuity of > 4.7 and 4.9 at different time...". What is the notation of visual acuity used when indicating these values: > 4.7 and 4.9? It should be an easier to understand one: LogMAR or Snellen (meters or feet).

Page 5, line 7. The sentence: "...with no significant differences existed..." should read simply: "...with no significant differences."

Page 5, line 18. The sentence: "...recovered to above 4.7,...". What is the notation of visual acuity used when indicating these values: above 4.7. It should be an easier to understand one: LogMAR or Snellen (meters or feet).

Page 5, line 24. The sentence: "...In the above 4.7 group, 2 hours...". What is the notation of visual acuity used when indicating these values: above 4.7. It should be an easier to understand one: LogMAR or Snellen (meters or feet).

Page 5, line 26. The sentence: "...the vision of 36 eyes (60%) taken SMILE..." should read: "...the vision of 36 eyes (60%) that underwent SMILE..."

Page 5, line 26. The sentence: "...than those taken LASIK procedure (75%)...." should read: "...than those that underwent LASIK procedure (75%)...."

Page 5, line 24, 28, 32, 34 and 36. The sentence: "...above 4.7 group...". What is the notation of visual acuity used when indicating these values: above 4.7? It should be an easier to understand one: LogMAR or Snellen (meters or feet).

Page 5, line 36, 39 and 42. The sentence: "...above 4.9 group...". What is the notation of visual acuity used when indicating these values: above 4.9? It should be an easier to understand one: LogMAR or Snellen (meters or feet).

Page 5, line 39. The sentence: "...taken SMILE..." should read: "...that underwent SMILE...

Page 5, line 41. The sentence: "...the amount taken LASIK ...." should read: "...the amount of those that underwent LASIK...

Page 5, line 47. The sentence: "...taken LASIK, though...." should read: "...that underwent LASIK, though...

Page 5, line 56. The words: "post-operational" should read: "post-operative"

Page 6, line 6. It reads: "We also investigated the incidence of subjective symptoms of the two groups". It is necessary to clarify what symptoms were explored both before and after the surgeries.

Page 6, line 30. The words: "of post-operation" should read: "after the surgery"

Page 6, line 34. The words: "in the very-early phase" should read: "...in this very early postoperative period"

Page 6, line 51. The sentence: "About 20%-50% of patients reported dissatisfaction after treated by FS-LASIK [8,10-12]" is too unspecific. Authors should explain at what time point are the mentioned
patients reported dissatisfaction and the probable causes of that. It seems a too high percentage!

Page 7, line 1, the sentence: "SMILE procedure only cuts a small incision of the corneal, there is few possibility of impairing the corneal nerves, which might be the major reason for the less reporting of dry eyes postoperatively" is inexact. The most probable cause is not that there is few possibility of impairing the corneal nerves, but the fact that FS-LASIK by creating a complete lamellar flap (only with a small hinge without cut) cause a greater disruption of the dense subbasal nerve plexus and stromal corneal nerves whereas in SMILE there is less area of damage to the corneal nerves. However, as it has been shown in a prospective, randomized clinical trial (contralateral-eye study), corneal sensation measured by the Cochet-Bonnet esthesiometry had a significant decrease in after both types of surgery, although with more pronounced effects after F-LASIK surgery as compared to SMILE surgery. In this study by Demirok et al, there were no differences, however, in dry eye symptoms between the two groups (Demirok A, Ozgurhan EB, Agca A, et al. Corneal sensation after corneal refractive surgery with small incision lenticule extraction. Optom Vis Sci. 2013; 90(10): 1040-1047).

Page 7, line 15. It reads: "...Therefore, the selection of SMILE and LASIK should depend on the requirement of patients on the velocity for visual recovery..." It is not really possible to make this statement because the results shown are in fact to early (2 to 4 hours after surgery) and it is considered normal that the vision will take at least one day to have an acceptable quality with any refractive procedure. It is probable better simply to eliminate this comment.

Page 7, line 46. It reads: "...The selection of SMILE and LASIK procedures should be based on the personal requirements of patients on the velocity for visual recovery...". It is not really possible to make this statement because the results shown are in fact to early (2 to 4 hours after surgery) and it is considered normal that the vision will take at least one day to have an acceptable quality with any refractive procedure. It is probable better simply to eliminate this comment.

Figue legends:

Figure 2: It reads: "...above 4.7 and 4.9 of patient undertaken SMILE or FS-LASIK.". What is the notation of visual acuity used when indicating these values: 4.7 and 4.9? It should be an easier to understand one: LogMAR or Snellen (meters or feet).

Supplementary Table 1.
The column heading reads "BCVA" and should read: "CDVA". The explanation of the acronyms must be included. The notation of CDVA is not clear. It should be an easier to understand one: LogMAR or Snellen (meters or feet). What does F value mean?

Since supplementary Table 1 and Figure 1 show the same information, one of them is enough. I think the Table gives clearer information, and therefore the Figure 1 should be eliminated.

Figure 3:
It read: "Comparison of clinical parameters and for SMILE and FS-LASIK." It should read: "Comparison of clinical parameters for SMILE and FS-LASIK."
In the figure 3 the words "Preoperation" and "postoperation" should be changed to "Preoperative" and "postoperative"

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No

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