Author’s response to reviews

Title: The application of wide-field laser ophthalmoscopy in fundus examination before myopic refractive surgery

Authors:

Lin Liu (sdiulin60@126.com)
Fang Wang (milwang_122@msn.com)
Ding Xu (daisyxu70@hotmail.com)
Chunlei Xie (xiechunlei86@126.com)
Jun Zou (zoujun70@126.com)

Version: 1 Date: 14 Jun 2017

Author’s response to reviews:

Point-by-point response to editor and reviewers

1. Editor Comments:

The manuscript can be significantly improved with a major revision. There are contradictory statements in the manuscript that need to be reconciled. Furthermore, the Discussion should include recommendations as to how patients proceeding to LASIK should be managed.

Answer: Thanks for your advice. There are some contradictory statements in the manuscript due to inaccurate words. We have corrected it. In addition, the discussion have supplemented how patients proceeding to LASIK should be managed as follows in the revised version (see the last sentence in the discussion):

“A complete fundus examination should been underwent before refractive surgery, especially the Goldmann three-mirror contact lens examination and wide-field laser ophthalmoscopy.”
2. Reviewer reports:

Jessica IW W Morgan (Reviewer 1): The purpose of this paper is to compare the efficiency of the Optos wide-field SLO at detecting retinal complications from myopia in comparison with the Goldmann three-mirror contact lens examination and the mydriatic slit-lamp examination. The Optos wide-field SLO detected statistically higher frequencies of retinal complications from myopia compared with slit-lamp examination. The Optos SLO performed comparably to the Goldmann three-mirror contact lens examination in all areas except for vitreoretinal adhesions for which the Goldmann three-mirror examination was superior.

Major Comments:

1.) What seems to be missing from this manuscript is a short discussion about what the authors would recommend now knowing the results of this study. Is the Optomap sufficient to replace the Goldman? Is the Goldman alone recommended? Should both be done prior to LASIK?

Answer: Thanks for your suggestions. We have supplemented this facet of the study as following: “Diagnostic imaging probably has become a significant supplement of traditional slit-lamp examination. Mackenzie et al used the Optomap Panoramic200 wide-field confocal scanning laser imaging system for detecting peripheral retinal lesions, and found the Optomap with high specificity and moderate sensitivity for lesions posterior to the equator.” (See the fourth paragraph in the discussion)

The Optomap is insufficient to replace the Goldmann. So both Optomap and Goldmann should be done prior to LASIK. We have added it in the revised manuscript (See the last sentence in the discussion).

2.) A short paragraph discussing the following would also make the paper more impactful: Do the results of these exams influence the outcome for patients to get LASIK? Do having these retinal complications exclude patients from undergoing LASIK?

Answer: Thanks a lot for the suggestion. The results of these exams will influence the outcome for patients to proceed LASIK in this study. Four patients who have retinal breaks underwent prophylactic laser photocoagulation to seal the breaks with the informed consent of patients, even though they were asymptomatic. One of the four patients, who was peripheral retinal break
with shallow detachment, was performed advanced corneal surface ablation and the others were performed LASIK at least 2 weeks post-photocoagulation. The retinal detachment has not been occurred since the follow-up in this study. We have added it in the revised manuscript. (See the fourth paragraph in the discussion).

It should be emphasized that if the peripheral retinal break with shallow detachment or multiple peripheral retinal breaks were found, LASIK will not be performed in our study. For this kind of situation, we will recommend advanced corneal surface ablation.

3.) Several portions of the current manuscript appear to contradict each other, leading the reader wondering whether the study can give the reader information about how this information should influence practice. Examples:

Page 7 first sentence and fifth sentence are directly contradictory: "vitreoretinal adhesion detection, the Goldman three-mirror contact lens examination had a better performance than the Optomap 200Tx (p<0.05)." and "There was no statistical difference between the Optomap 200Tx and Goldmann three-mirror contact lens (p>0.05.)"

Answer: Thanks a lot for the comments. We felt very sorry that we did not describe it clearly.

For vitreoretinal adhesion detection, the Goldman three-mirror contact lens examination had a better performance than the Optomap 200Tx (p<0.05)

For the retinopathy detection of white without pressure, lattice degeneration, cream sample and pigment degeneration, and retinal breaks, there was no statistical difference between the Optomap 200Tx and Goldman three-mirror contact lens (p>0.05).

Page 9 sentences on lines 15-30. 1st sentence: "Optomap…was less than with the Goldmann…” 2nd sentence: "showed no statistical significance between…[the two exams]" 3rd sentence: "Optomap…was less than when using the Goldmann…”  Page 8 line 44-46: "Optomap 200Tx examinations was similar to the Goldmann"

Answer: We did not clarify it clearly. In fact, the detection numbers of the peripheral retinal lesions using the Optomap 200Tx, such as the cream sample and pigment degeneration, seemed
to be less than with the Goldmann three-mirror contact lens examination, but no statistically significant was reached (A p value> 0.05). We have corrected it in the revised manuscript. (See the sixth paragraph in the discussion)

Other comments:

1.) Page 7 line 57: "It is now possible to scan 200 degrees of the retina." 200 degrees is measured from the center of the eye. It would be better to report visual angle which is far less than 200 degrees. The optomap also scans a farther extent horizontally than vertically which should also be included in any discussion of field size.

Answer: We totally agree your statements. But we actually photographed and recorded the images with more than 200 degrees through four directions (Temporal, Nasal, Superior and Inferior) guiding and normotopia for each eye. The visual angle might be far less than 200 degrees without direction guiding. We have added it in the revised manuscript. (See the third paragraph in the Materials and methods).

The optomap scans a farther extent horizontally than vertically. These sentences were displayed in the discussion as below:

“We suggest that this was mainly due to the examination being restricted by the eyelids and eyelashes, particularly for patients with hollow eyeballs and small palpebral fissures. This may lead to a smaller angle of view in the vertical direction.”

2.) Page 8 the entire paragraph beginning line 17: "Because of its high efficiency…” is not relevant and should be deleted.

Answer: Thanks for your advice, "Because of its high efficiency…” had been deleted in revised version. We accept your advice and correct it.
3.) Page 8 line 22: All 83 eyes were treated for myopia complications? Please clarify.

Answer: Four patients who have retinal breaks underwent prophylactic laser photocoagulation to seal the breaks with the informed consent of patients, we have added it in the revised version. (See the fourth paragraph in the discussion)

4.) Page 8 line 32: Sentence beginning "Lengyel I et al reported a detection rate of 81.1% in eyes with age-related macular degeneration…" is not relevant and should be deleted. The next sentence in the same paragraph is repeated from the results section. The last sentence in the same paragraph beginning "For peripheral retinal lesions,…" is new info but probably belongs in the Results section that compares the three methods (page 6 line 44) rather than in the discussion.

Answer: Thank you for the advice. According to the suggestions,"Lengyel I et al reported a detection rate of 81.1% in eyes with age-related macular degeneration…"and the repeated sentence from the results section have been deleted in the revised version. The last sentence have been moved to the results section.

5.) Table 1 is completely written in the text and is not needed.

Answer: Following your advice, the Table 1 had been removed in revised manuscript.

Minor comments:

1.) Page 5 line 5: The axial lengths reported in the paper text are different from the table.

Answer: The axial length was 24.47–28.49 mm as in the manuscript. I'm sorry for the omission of our edit form.
2.) Page 6 line 9, line 22, line 34 (start of each paragraph describing three tests): What does "38 eye (24.3%) were detected with myopia"? All eyes in the study (78) had myopia, so how is myopia "detected"?

Answer: Thanks for your advice, the "38 eye (24.3%) were detected with myopia" should amended by "38 eye (24.3%) were detected with myopic conus ", we have made the modification in the revised version.

3.) Page 7 line 45: typo should be "vitreous and retina" rather than vitreous and retinal"

Answer: The suggestions are very valuable. “vitreous and retinal” have been changed by “vitreous and retina” in the revised manuscript.

4.) Page 8 top: "This can provide a much larger image of the peripheral retinal than the traditional Optomap 200." This is not relevant to the current manuscript.

Answer: Thanks for your advice. We accept your advice completely, and delete it in revised version.

5.) Page 8 line 54: firstly is misspelled.

Answer: Thanks for your reminding. We have changed “firstiy” into “firstly”.