Author’s response to reviews

Title: Changes in ocular biometric measurements after vitrectomy with silicone oil tamponade for rhegmatogenous retinal detachment repair

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Dear Fabio,

Sincerely we thank you for your kindly help with careful revision and generous recognition to our manuscript entitled "Changes in ocular biometric measurements after vitrectomy with silicone oil tamponade for rhegmatogenous retinal detachment repair", which we previously submitted to BMC Ophthalmology.

We now revised our manuscript according to your reasonable comments and made it more elaborate under your guidance, with all the changes highlighted in the manuscript. Also, we added our reply to each issue from the respectful reviewers in this revision.

Once again, thanks for your constructive comments and suggestions, and we are looking forward to your kindly reply.

Regards,

Qingchen Li, M.D.
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Reviewer reports:

Reviewer 1:
This retrospective self-control study on 63 phakic macula-off RRD eyes was conducted to compare the ocular biometric changes before and after vitrectomy with silicone oil tamponade. In the abstract section, the authors concluded "There are prolongation of AL and ....". In the Discussion section Page 8, Lines 23-25, they mentioned ".... measurement error of AL is the major cause of postoperative myopic shift". By the end of the Discussion section they concluded the
change in AL as underestimation!!. As a reader, I was confused because the three terms (prolongation, measurement error and underestimation) are not the same.

A: Thanks for pointing out our deficiency. We are sorry for using the three different terms since the expressions about the biometric change of AL were neither unified in previous studies. It might be difficult to decide which term is most appropriate because the original AL is impossible to obtain unless there was a record before RRD occurred. To make it clear, we unified the expressions throughout the manuscript into underestimation, which was more commonly used [Retina 2014, 34(7):1415-1420.], [Eye (Lond) 33(11): 1756-1761.] et al.

Measuring the ocular biometric values should be performed at fixed time points after surgery e.g. 1 week, 1 month, 3 months and after silicone oil removal. This will allow more accurate assessment of the changes and whether these changes were temporary or permanent. Also, this could detect whether these changes were mainly related to presence of silicone oil inside the eye or to the surgery itself. It is also difficult to assess accurately the degree of postoperative myopic shift in silicone oil - filled eyes.

A: Thanks for your professional suggestions. They may greatly upgrade the level of the study, and give the final answer to the scientific issue. We would continue our research to improve the imperfections, which are difficult to alter in this retrospective study.

Reviewer 2:
This study aimed to describe the changes in ocular biometric measurements after vitrectomy with silicone oil tamponade for rhegmatogenous retinal detachment repair. The Authors found not only the underestimation of AL but also the thickening and anterior shifting of the crystalline lens. The manuscript is well-written. The idea behind the paper is very interesting and clinically relevant, but the manuscript needs revision to be published. Comments below are provided.

* In Participants" section (page 3, line 52): All biometric examination of the recruited patients demonstrated a correct eye alignment with respect to the pupil center? Were all the scan correctly interpretable according to artifacts related to poor fixation or eye movements during the examination?

A: Thanks for your suggestion. According to the former studies [Eye (Lond) 26(10): 1344-1348, and Eye (Lond) 33(11): 1756-1761], the manufacturer of IOLMaster does not recommend the use of measurements with signal-to-noise ratio (SNR) value less than two, so we only included measurements with an SNR of >2 to ensure a reliable quality of eye alignment and fixation. And we supplemented it in the revised manuscript.

* In the Results (page 5 line 9), the Authors stated: "Examination failure rates of preoperative AL, ACD and LT were 28.6%, 22.2% and 14.3%, and these of postoperative data were 0, 15.9% and 3.2%, respectively." Were these patients excluded from the analysis? What was the final number of the included eyes? These points need clarification.

A: We would like to express our sincere thanks for your question. Patients with missing data were excluded from statistical analysis, and only those who had both the preoperative and postoperative
data could be included. The final number of the included eyes for AL, ACD, LT, LP, RLP and LRD were respectively 45, 42, 53, 36, 28 and 28, as shown in Table 1.

* The mean AL of the study group was 23.94±1.82 mm. The patients were classified into two subgroups (page 5 lines 35-38): "highly myopia group" with AL >=26.00 mm and "moderate to low myopia group" with AL