Reviewer’s report

Title: Quantitative Analysis of Macular Contraction in Idiopathic Epiretinal Membrane

Version: 1 Date: 10 February 2014

Reviewer: Hiroki Nomoto

Reviewer’s report:

The authors quantified a displacement of macular capillaries between pre- and post-vitrectomy for ERM patients by using infrated photographs. The displacement was measured by two parameters (VLA, FBL) that the authors had predetermined by themselves. The changes of VLA and FBL significantly correlated with the changes of macular thickness. On the other hand changes of visual acuity didn’t have any correlation with the changes of VLA and FBL. There are some questions need to be addressed.

Major Compulsory Revisions-

1. The authors employed the VLA and FBL for quantifying changes of capillaries position. Why did authors choose to use those parameters? It seems that the present manuscript doesn’t clarify an appropriate reason. Especially, what do authors think the difference of meanings between VLA and FBL? Are VLA and FBL both necessary to quantify the changes? If it is so, it should be needed to explain.

2. With figure 3A and 3C, these figures should be contained same patients. However, there is an inconsistency for patients between 3A and 3C. In Figure 3A, there are 2 patients between 3000 and 4000 #VLA. On the other hand, 3 patients are in the same range in Figure 3C. What causes this disagreement?

3. It would be helpful for readers to understand the results by adding actual measurement values (VLA, FBL) and OCT results in Figure 2 as a case of patients.

3. Discussion section first paragraph, “Compared with previous study......”, which study?

4. As the authors mentioned, results could be much affected by which capillaris oberevers chose. In discussion section, authors explained the validity for their method. But I think it’s not enough to justify their method. The method in this study is authors’ original and novel one. Readers would wonder what extent are the results reliable. That’s why I think it is important for the authors to show a variability (e.x. median and IQR) of capillaries movement for each observer.

5. The authors concluded that their method could be useful for quantifying the improvement in retinal surface distortion. It seems that “the improvement” isn’t an appropriate word. Their method, indeed, could measure a capillaries movement distance between pre- and post-surgery, but it isn’t always “the improvement”.

7. When and for what the authors expect their method to be used?

Minor Essential Revisions-
1. In results section 5 paragraphs, an abbreviation “VA” has used. It would be better to note what is “VA”, though readers would be able to guess the “VA” means visual acuity.

Discretionary Revisions-
1. Generally, one of typical symptom for ERM is metamorphopsia. It would be better to compare the changes between capillaries movement and metamorphopsia.
2. It seems that it would be ok without Figure 2C and 2D.
3. The authors’ method measured just a distance from foveola and length not to be mentioned about a direction. To evaluate relationships between visual function and anatomical structure, the movement direction would be an important factor to affect functional changes especially for metamorphopsia. It would be better to evaluate the direction if the authors are able to analyse it by ImageJ.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Not suitable for publication unless extensively edited

Statistical review: No, the manuscript does not need to be seen by a statistician.