Reviewer’s report

Title: Early bleb parameters as long-term prognostic factors for surgical success: a retrospective observational study using three-dimensional anterior-segment optical coherence tomography

Version: 1 Date: 23 Dec 2018

Reviewer: Akiko Narita

Reviewer's report:

In this study, Utako Tsutsumi-Kuroda et al. evaluated early filtering blebs after trabeculectomy and investigated the bleb parameters associated with surgical success using 3D AS-OCT. The study appears potentially interesting for readers, but some issues must be addressed before the study can be reconsidered.

1) The title doesn't seem to match the content of this study. The authors state on page 1, lines 52-56, "The object of this study is to investigate the effect of early bleb parameters measured by three-dimensional anterior-segment optical coherence tomography on the surgical success of trabeculectomy". The authors should use "surgical success" instead of "surgical failure" in the title.

2) The details of the surgical procedure, including the design of the conjunctival and scleral flaps, and the post-operative therapy regimen should be described. They may potentially affect the bleb morphology.

3) The imaging protocol needs to be better illustrated and the bleb parameters should be defined. How was the bleb wall intensity calculated/measured? In a limited area or the whole area of the bleb? This needs more detailed explanation.

4) In terms of the success criteria, were needle bleb revisions included in the additional glaucoma surgeries?

5) How many eyes had hypotony after trabeculectomy?

6) Regarding Table 1, 4 eyes are not included in the Cause of glaucoma. The authors need to show the glaucoma type of the remaining 4 eyes.

7) The authors state on page 6, lines 10-14, "Other bleb parameters including the thickness and intensity of the bleb wall did not show the relationship with the long term IOP control. That was contradicted with the previous knowledge conducted by two-dimensional OCT". This point is a matter for debate. The references they cite do not show the early bleb features that might predict surgical success. If one reads and refers to the following publication: Br J Ophthalmol. 2018;102(6):796-801, Characteristics of early filtering blebs that predict successful trabeculectomy identified via three-dimensional anterior segment optical coherence tomography, the authors should compare the bleb parameters associated with successful outcomes with those in the above publication.

8) It is advisable that the authors show the limitations of this study clearly in the Discussion section.

9) It would be helpful if the authors presented a range of patient images, perhaps to illustrate the conclusions reached in the paper.

10) The number at risk needs to be added to Figure 1.
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Unable to assess

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review

Quality of written English
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?
5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests.

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal