Author’s response to reviews

Title: Individualized Penetrating Keratoplasty using Edge-trimmed Glycerol-preserved Donor Corneas for Perforated Corneal Ulcers

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Author’s response to reviews:

Dear Editor,

Thank you for your careful review and your encouraging comments, as well as for the valuable advices. We are pleased that the Reviewers found our work of considerable potential interest and appreciate the thoughtful comments, which were very helpful in revising and strengthening the paper. We have revised the manuscript to address all concerns according to your and reviewers’ comments.

Here are your comments:

Editor Comments:
- Interesting report. You should better highlight the limits of retrospective design.
- Revision for English language and style is mandatory.
- The surgical procedure for case #5 is not fully clear. How was anterior graft trimmed?

As your suggestion, we have highlighted the limits of the retrospective study in our revised Discussion (line 213, page 9).
We have reedited the English language and style with the help of American Journal Experts, one of the recommended companies.

We also made some modifications for more clear description in the surgical procedures. For your question about Case 5, in which the patient had a $4 \times 2.5$ mm corneal perforation (Fig. 1A, green dotted circle) with a large area of iris prolapse below the central region of the cornea, and had a small corneal ulcer (Fig. 1A, yellow dotted circle). Considering the small size of the ulcer area, we treated this case with Penetrating Keratoplasty (PK) with an edge-trimmed PK corneal graft as shown in Table 1. In brief, we carefully excised necrotic tissue around perforation and ulcer to build a recipient bed with sloping surface. After marking a matched outline on the posterior surface of donor corneas using corneal trephine, we trimmed a wedged edged shape along the mark using an ophthalmic surgical blade (#11) to match the recipient bed (Surgical Process section, line 109, page 5 and Fig. 3A-E).

Below are the point-by-point responses to Reviewers’ comments. The Reviewers’ comments are shown in italics.

Thank you again for considering our manuscript and your guidance on the required revision.

Best regards,

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To Reviewer #1

Comments to author

Accept without revision.

Many thanks for the comments “Accept without revision” from Reviewer #1. We have revised our manuscript according to the Editor’s and Reviewers’ suggestions as mentioned in the letter. And we appreciate the rechecking for our revised manuscript.

To Reviewer #2

Comments to author

I think this paper is a very interesting one, and I have only a few comments to the authors:

We appreciate Reviewer #2’s positive evaluation of the clinical use of our surgical technique.
1. In my opinion, the present paper shows a good approach to small or puntual perforations. Do you think this technique could be used in more severe cases?
   It’s a meaningful question. We think this technique also have advantages in treating corneal perforation with a large size or in some severe cases, especially when fresh donor corneas are not available. In future studies, we would try to use this technique in more severe cases when fresh donor corneas are not available. We have integrated it into the revised Discussion section (line 170, page 7).

2. It would have been interesting to check endothelial cell count before and after the procedure. We appreciate the constructive suggestions from the reviewer and we agree it. Checking the endothelial cell density by in vivo Confocal Microscopy could have be done to better evaluate the residual corneal endothelial function before and after the procedure. In the present study, we mainly evaluated the corneal endothelial function by measuring central corneal thickness (using AS-OCT) and observing the transparency of the cornea and the graft. As a retrospective study, unfortunately, the clinical indexes (including the corneal endothelial cell count before and after surgery, the AS-OCT results) were not fully obtained. We have discussed the question in the revised manuscript (Discussion section, line 197, page 8) and we will include it into our future study.