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Figure

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Using scleral indentation to adhere donor in DSAEK

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Dear Editor,

For adherence of donor to recipient, use of air tamponade is important at the end of Descemet's stripping automated endothelial keratoplasty (DSAEK). However, the procedure is difficult in eyes with an iris-lens diaphragm defect and/or with liquefied vitreous. Peng et al reported the use of viscoelastic in these eyes because the air bubble went into the vitreous and could not support the anterior chamber.¹ They suggested the reason the air bubble went into the vitreous cavity was due to low posterior chamber pressure and access between the anterior and posterior chamber. Hence, they injected balanced salt solution into the posterior chamber to normalize intraocular pressure (IOP), followed by a small amount of viscoelastic to support the anterior chamber and then an air bubble into the anterior chamber. This method has the potential complication of viscoelastic induced elevated IOP.

We have an alternative method to avoid the technical difficulties of air tamponade procedure in these abnormally structured eyes in primary DSAEK or reattaching the dislocated graft. When the injected air bubble goes into the vitreous cavity, it means the IOP at the anterior chamber is higher than that in the posterior chamber in addition to their being access between the anterior and posterior chamber, so air was pushed into posterior chamber. When this problem occurs, we lower the anterior chamber pressure by releasing fluid or air from the DSAEK incision wound.

The trapped air will come back to anterior chamber. If the air bubble is small, we can release more fluid from the anterior chamber to further lower the anterior chamber pressure and then slowly inject more air into the anterior chamber. If the globe is too soft, we can first inject balanced salt solution into the posterior chamber.

In the air tamponade procedure, the anterior chamber had better be firmly filled with air; however, it is impossible to keep a huge air bubble at the anterior chamber in these abnormally structured eyes. Hence, when there is a medium to large air bubble in the anterior chamber, we use two cotton swabs to do scleral indentation at the temporal and nasal side far from the limbus simultaneously to elevate the posterior chamber pressure (Figure 1, available at <http://aaojournal.org>). The air bubble will be compressed and congregate near the corneal internal surface. Then, the anterior chamber becomes firm; the air covers and pushes the entire donor against the cornea and the interface fluid is pushed out through the venting incisions, which looks like what happens during the air tamponade procedure in regular DSAEK in “normal” eyes. We adjust the strength of scleral indentation according to whether the air covers the entire donor and whether the interface fluid is pushed out through the venting incisions. We pause for about 5 seconds after about 2 minutes of scleral indentation. After 5 cycles, the air tamponade procedure is finished. We leave the entire bubble in the anterior chamber since we have routinely performed a peripheral iridectomy. We

used the scleral indentation method in 5 abnormally structured eyes in which we could not achieve big air bubbles and a firm anterior chamber with regular air tamponade. No one had graft dislocation postoperatively.

In conclusion, the scleral indentation method allows the air tamponade procedure be performed successfully with a smaller air bubble.

Yi-Yu Tsai, MD, PhD

Chun-Chi Chiang, MD

Taichung, Taiwan

Reference:

1. Peng RM, Hao YS, Chen HJ, Sun YX, Hong J. Endothelial keratoplasty: the use of viscoelastic as an aid in reattaching the dislocated graft in abnormally structured eyes. *Ophthalmology*. 2009;116:1897-900.

Dear Editor:

We change all the grammar errors according to your suggestions.

There are 3 bad sentences and we change them as the following:

1. In the second paragraph:

posterior chamber. [Though in the air tamponade procedure, the anterior chamber had better be firmly filled with air to push the donor against the recipient and seal off the donor edges, it is impossible by regular air tamponade method in these “abnormal” eyes. This sentence is not good and I am not sure how to rewrite it since I am not sure what you mean. Maybe tell me in a few sentences in your cover letter and I can try. or try to change this yourself. I suggest you make this two simpler sentences.]

ANS:

We mean an effective air tamponade in DSAEK has to achieve a firm anterior chamber filled with air; however, in these abnormal eyes, it is impossible to make a huge air stay in the anterior chamber. Hence, it is difficult to have a firm anterior chamber filled with air in these abnormal eyes.

We change the sentence into:

In the air tamponade procedure, the anterior chamber had better be firmly filled with air; however, it is impossible to keep a huge air bubble at the anterior chamber in these abnormally structured eyes.

2. In the second paragraph:

air tamponade procedure in regular DSAEK in “normal” eyes. It also means the

strength of scleral indentation is enough. [I do not understand this last sentence.

Enough for what?] We ~~take~~ pause for about 5 seconds ~~break~~ after about 2 minutes of

ANS:

We mean the air tamponade in regular DSAEK in “normal” eyes, the anterior chamber is firm; the air covers and pushes the entire donor against the cornea and the interface fluid is pushed out through the venting incisions. When we find the situation in scleral indentation in abnormal eyes, it means the strength (force) of scleral indentation is enough (not too small) at that moment and we don’t need to compress the eyeball further.

We change the sentence into:

We adjust the strength of scleral indentation according to whether the air covers the entire donor and whether the interface fluid is pushed out through the venting incisions.

3.

scleral indentation. After 5 cycles, the air tamponade procedure ~~was~~is finished. The whole air was left in the anterior chamber because we routinely did peripheral iridectomy [bad sentence and I am not sure what you mean. Is it: We leave the entire bubble in the anterior chamber since we have routinely performed a peripheral iridotomy]. We used the scleral indentation method in 5 abnormally structured eyes in

We change the sentence according to your suggest into:

We leave the entire bubble in the anterior chamber since we have routinely performed a peripheral iridectomy.

Sincerely yours,

Yi Yu Tsai, MD, PhD

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