

THE OUTCOME OF DESCMET MEMBRANE ENDOTHELIAL KERATOPLASTY (DMEK) WITH DIFFERENT TAMPONADE MATERIAL

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BACKGROUND

DMEK is a partial thickness cornea transplant involving replacement of the host Descemet membrane (DM) and endothelium by donor DM and endothelium. Several types of materials can be used as a tamponade during DMEK. The study was conducted to compare the outcome of different tamponade material in DMEK.

METHODS

Retrospective, interventional case series (N=8)
 • Diagnosis: Pseudophakic bullous keratopathy, Fuchs' endothelial dystrophy
 • Visual acuity: 6/120 and worse

DMEK:

- Self-prepared tissue by a single surgeon
- Donor tissue with endothelial cell density >2400 cells/mm²
- 3 types of tamponade material

20% sulfur hexafluoride (SF6) gas (n=3)

Air (n=2)

12% perfluoropropane (C3F8) gas (n=3)

Outcome

Graft detachment rate

Rebubbling rate

Graft survival rate

DISCUSSION

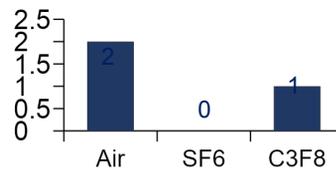
The usage of air as a tamponade material has been revealed to lead to early graft detachment (thus, the need for rebubbling is higher) compared to the other two material ($P < 0.05$), as shown by previous studies^{1,2,3}. However, there is scarce study that compares all three material to analyse the correlation of tamponade material with the graft detachment. A large sample size of study need to be conducted to find statistically significant evidence of the correlation. In addition, we found out that there is no case of graft detachment in all cases with successful DMEK, inciting whether there is correlation between graft detachment with graft survival. Due to the limitation of our study with very small sample size (N=8), future study with bigger sample size is needed to prove whether the current outcome can be replicated or showed a different results. The outcome of the study is vital for surgeon to consider better tamponade material on their future operation.

CONCLUSIONS

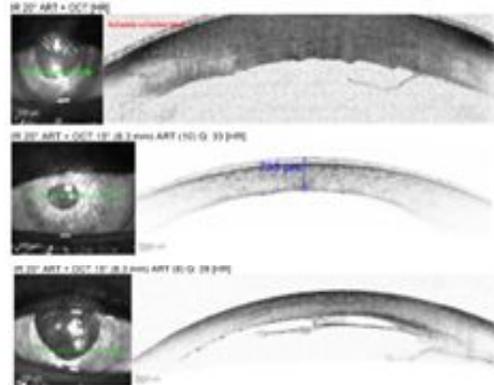
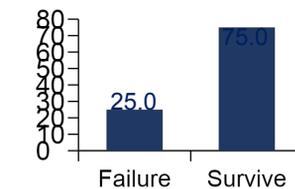
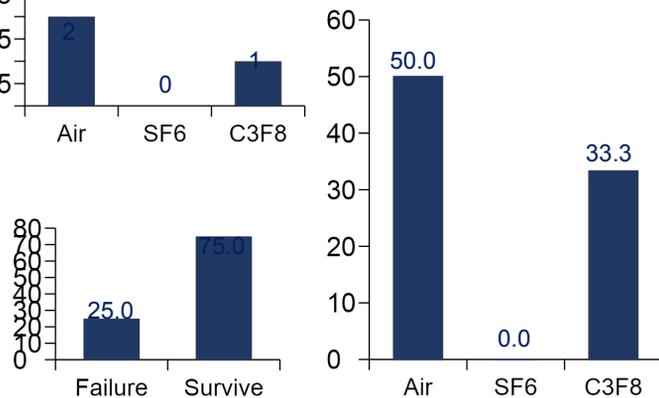
1. 20% SF6 gas provides superior tamponade effect compared to both air and 12% C3F8 gas.
2. The detachment rate influenced graft survival. Air tamponade showed higher rebubbling rate.
3. Further study need to be done with large sample size to support current study.

RESULTS

Rebubbling Rate



Graft Detachment Rate (%)



AIR

SF6

C3F8

REFERENCES

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