

Response to comment on: Continuous intraoperative optical coherence tomography-guided shield ulcer debridement with tuck in multilayered amniotic membrane transplantation

Sir,

We thank you for reading our manuscript on “Continuous intraoperative optical coherence tomography-guided shield ulcer debridement with tuck in multilayered amniotic membrane transplantation” with such great interest.^[1] As far as we understood, the authors have the following queries:^[1]

- Orientation of amniotic membrane graft
- Experience of topical immunosuppressants (tacrolimus and cyclosporine) in such cases of severe vernal keratoconjunctivitis.

In shield ulcer, the main cause of epithelial defect is mechanical (papillae) along with chemical mechanism (eosinophilic major basic protein).^[2] Thus, the primary aim of performing amniotic membrane graft (AMG) was to provide mechanical protection to the growing epithelium. Hence, we believe keeping the basement membrane (BM) side up or down would not make that much difference in such cases.

The inner layer acting as a graft has the purpose of filling-in the defect and replaces the absent stromal matrix, which it can efficiently do with BM down also.^[3] In addition, the AMG with BM down can still provide the growth factors by the mechanism of diffusion or dispersion to the surrounding growing epithelium.

Lastly, inflammation rather than growth factor deficiency is the main culprit in shield ulcer. The stromal matrix of AMG has several ways to reduce the local inflammation. These include suppression of the inflammatory signaling factors; entrapment of inflammatory cells (e.g., eosinophils and the EMBP that plays central role in pathogenesis of shield ulcer) from other tissues and rapid induction of apoptosis of inflammatory cells.^[4] Thus, the stroma reduces inflammation locally and keeping it up towards the growing epithelium may prevent the exposure to inflammatory mediators and hasten shield ulcer healing.

However, we cannot say conclusively that the technique we followed is 100% perfect. To define the ideal orientation of AM in shield ulcer, one has to conduct some controlled trial.

We agree with the authors that the AMG should be done with stroma side up when used as a patch in persistent epithelial defects or non-healing ulcers to provide growth factors, which would promote epithelial healing.^[1] But as we have clarified in the above discussion, the purpose of AMG was different in our cases.

Regarding our experience with topical immunosuppressants (tacrolimus and cyclosporine) in such cases of severe vernal keratoconjunctivitis, we would like to add that both of these agents are effective. However, there are still some unanswered questions such as optimal duration, dose/frequency and indications of their use. Currently we are using them as steroid sparing agents only.

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Conflicts of interest

There are no conflicts of interest.

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