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Treating Complex Macular Pathologies with Epiretinal Human Amniotic Membrane Grafting

Ahmet Hondur; Qun Zeng; Tongalp H Tezel

+ Author Affiliations & Notes

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Abstract

Purpose : To investigate the anatomical and visual outcomes of epiretinal human amniotic membrane (hAM) grafting in complex macular pathologies.

Methods : Twenty one consecutive patients were included. The primary pathologies were chronic, large (≥700 microns) failed macular holes (14 eyes), macular holes associated with foveoschisis (3 eyes) and retinal detachment (4 eyes) in degenerative myopia. All eyes underwent 27-gauge vitrectomy, internal limiting membrane peeling, epiretinal hAM grafting and endotamponade with either gas (11 eyes) or silicone oil (10 eyes).

Results : Patients were followed up for 16±9 (2-32) months. All macular holes demonstrated anatomical closure with restoration of the foveal contour and resolution of foveoschisis and/or retinal detachment. Silicone oil was removed in 5 eyes. Slippage of the hAM was seen only in one eye in the early post-operative period, but the hole remained closed. No scarring or inflammatory reaction was observed. The visual acuity improved in all eyes except in one that remained

stable. Overall, mean best-corrected visual acuity improved from logMAR 1.28±0.52 (20/312) to logMAR 0.82±0.38 (20/130) at the final visit. OCT demonstrated gradual closure of the ellipsoid defect along with improvement of foveal sensitivity in microperimetry. A robust activation of the glial wound healing response was demonstrated in the immunohistochemistry of a removed hAM specimen.

Conclusions : The use of an epiretinal hAM graft for complex macular pathologies provides a controlled glial wound response and a scaffold that attracts activated glia to the wound site, leading to complete anatomical healing of the macular defects.

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