Fibrin glue in cornea epithelial cell migration.

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Abstract:

Purpose: Fibrin glue has been used successfully in numerous ophthalmic surgical procedures. Recently fibrin glue has been used in limbal stem cell transplantation to reduce both operative time and negate the need for sutures. The aim of this study was to determine the effects of fibrin glue on epithelial cell migration in vitro. Methods: Cornea-scleral rims were split to retain the superficial layer. Rims were cut into 8 equal sized pieces and were either placed on culture plates with or without fibrin glue. Rims were cultured over a 16 day period to allow epithelial cells to growth. Epithelial cells were photographed and immunofluorescence for anti- fibrin was performed. Results: Explants that were glued demonstrated delayed epithelial cell growth and migration, compared to explants without glue. By Day 16, all fibrin glue had dissolved permitting cells to freely migrate and expand. Conclusions: Fibrin glue delays epithelial cell growth and migration and thus can be used to our advantage in limbal stem cell transplantation.