Fibrin glue coating of the surgical surfaces may facilitate formation of a successful bleb in trabeculectomy surgery.

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Abstract:

Trabeculectomy is commonly conducted when medical therapy fails to control intraocular pressure (IOP). The success of trabeculectomy for the treatment of glaucoma depends on the wound-healing response at the subconjunctival filtering bleb site. Postoperative scar formation is a serious problem in this surgery. Current strategies to counteract scarring include local antimetabolite treatment, which is associated with severe side effects, limiting its application. Therefore, additional means to safely modulate wound healing are desirable. In ophthalmic surgery, fibrin glue is used mainly for sealing and hemostatics purpose. Fibrin glue coating of tenon face of conjunctiva, scleral surface, reverse face of scleral flap and scleral bed with insoluble fibrin glue can halt both ooze bleeding and vascular leakage. By retarding the first step of wound healing, less postoperative inflammation may occur. Additionally aqueous humor flows through a fibrin glue coated interface. Therefore, we hypothesize that fibrin glue coating of the surgical surfaces in trabeculectomy surgery may yield less subconjunctival fibrosis and more successful bleb. To the best of our knowledge, no basic research has yet been performed regarding fibrin glue coating for halting the vascular leakage and easing the aqueous drainage into subconjunctival space in glaucoma surgery.