Fibrin glue for opposing wound edges in "Top Hat" penetrating keratoplasty: A laboratory study.

Authors: Bahar I., Kaiserman I., Slomovic A., McAllum P., Rootman D.

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Abstract:

PURPOSE: To evaluate the advantages of fibrin glue for opposing wound edges in Top Hat penetrating keratoplasty (PKP). METHODS: Twenty human corneoscleral rims were mounted on an artificial anterior chamber. Eight corneas underwent traditional PKP, 6 underwent Top Hat PKP, and 6 underwent Top Hat PKP by using fibrin glue for opposing wound edges. Mechanical stability was evaluated after placement of 8 and 16 interrupted sutures. Wound bursting pressure and induced astigmatism were evaluated. RESULTS: In the traditional PKP group, wound bursting pressure was 25.2 and 59.1 mm Hg after placement of 8 and 16 sutures, respectively. In the Top Hat PKP, leakage occurred at 57.6 and 103.8 mm Hg after placement of the 8 and 16 sutures, respectively. In the Top Hat PKP + fibrin glue group, wound leakage occurred at 144.6 mm Hg after placement of the 8 sutures and at >158 mm Hg after placement of 16 sutures. The Top Hat PKP + fibrin glue group induced astigmatism of 2.5 D, whereas the traditional PKP group and the Top Hat PKP group showed an induced astigmatism of 3.1 D each. CONCLUSIONS: The use of fibrin glue in Top Hat PKP was found to be more mechanically stable than traditional sutures.