A biological tissue adhesive and dissolvent system for intraocular tumor plaque brachytherapy.

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Abstract:

PURPOSE: To examine a novel technique for simplified placement and removal of plaque brachytherapy by fibrin glue and urokinase (medac Gmbh, Hamburg, Germany). MATERIALS AND METHODS: In six enucleated porcine eyes, plaques were placed on the episclera and fibrin glue was applied to cover it. Urokinase was used to dissolve the glue in three eyes and saline was used in three eyes. Adhesion strength was measured further on 15 plaques affixed to porcine eyes (glued in five with intact conjunctiva, glued in five with removed conjunctiva, and sutured in five). RESULTS: Saline had no effect on the glue-plaqueeye complex, whereas the urokinase (0.38 mL +/- 0.08 mL) easily dissolved the adhesion between the glue layer and surrounding tissues. The weight required to detach the plaques was 0.349 kg +/- 0.173 kg for glued eyes with intact conjunctiva, 0.405 kg +/- 0.083 kg for sutured eyes (P = .59), and 0.032 kg +/- 0.004 kg for glued eyes without intact conjunctiva (P ? .015). CONCLUSIONS: The usage of the biological adhesive and dissolvent system was applicable for plaque surgery in an ex vivo animal model.