Human fibrin tissue adhesive for sutureless lamellar keratoplasty and scleral patch adhesion: a pilot study.

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Abstract:

PURPOSE: To determine whether a fibrin adhesive can facilitate the performance of sutureless lamellar keratoplasty and attachment of amnion to bare sclera.

DESIGN: Prospective, noncomparative case series.

PARTICIPANTS: Six patients, 5 of whom underwent lamellar keratoplasty and 1 who received an amniotic patch of the sclera and cornea. Institutional review board approval was not required for these therapeutic treatments.

METHODS: In 5 patients, the epithelium was removed from the corneal surface, a free cap, 200- micro m thick, was cut with a microkeratome, and a human fibrin tissue adhesive (Tisseel VH Fibrin Sealant; Baxter Healthcare Corporation, Glendale, CA) was applied to the cut surface of the corneal stroma. A 200- micro m thick, microkeratome-cut lamellar graft was placed in the stromal bed without sutures, and a bandage soft contact lens was applied. The lens was left in place for 1 week and then removed. In 1 patient, the adhesive was applied to bare sclera for attachment of amniotic membrane after removal of a conjunctival melanosis. All patients were followed up for 3 months after surgery.

MAIN OUTCOME MEASURES: Tissue adhesion, corneal clarity, and visual acuity.

RESULTS: All 5 lamellar grafts healed and remained clear, although final visual acuity varied with visual potential and astigmatism. The amniotic membrane graft also adhered well to the bare sclera.

CONCLUSIONS: The fibrin adhesive provided satisfactory attachment without sutures for lamellar keratoplasty and amniotic patching. It should be effective for sealing of clear cornea incisions, LASIK flaps, and conjunctival and skin grafts. An adhesive that has been designed specifically for ophthalmic applications and is more convenient to use would be desirable.