Fibrin adhesives for Ocular Surface procedures

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Disclosures

• Alcon – Consultant
• Allergan – Consultant
• Bausch and Lomb - Consultant

Ocular Surface Reconstruction

• An important surgical approach to patients with conjunctival and corneal limbal stem cell deficiency
Ocular Surface Damage

Injury

- Acid
- Alkali
- Thermal
- MM-C
- Radiation
- Drug induced
  - Chronic glaucoma therapy
  - Preservatives

Ocular Surface Damage

Inflammatory Disease

- Stevens-Johnson syndrome
- Ocular cicatricial pemphigoid
- Severe atopic disease

Ocular Surface Damage

Congenital Disease

- Aniridia
- Rosacea
Ocular Surface Damage
Multiple ocular surgeries
- Glaucoma procedures
  - MM-C
- Previous limbal based surgery

Ocular Surface Damage
Others
- Contact lens induced
- Peripheral inflammatory corneal disease
- Neurotrophic keratitis

Ocular Surface Reconstruction
Surgical techniques
- Living related conjunctival/corneal allograft
- Ex vivo expansion autografts
- Amniotic membrane
- Kerato-limbal allograft from cadaver (KLAL)
Advanced surgical techniques

- Use of tissue glue adhesives
  - Fibrin sealant: (Tisseel, Evicel and others)

Fibrin sealant: Tisseel, Evicel and others

- Components of Tisseel VH fibrin sealant:
  - Sealer protein (Human Fibrinogen from pooled plasma)
  - Fibrinolysis inhibitor solution (previously bovine, now synthetic)
  - Thrombin (Human, from pooled plasma)
  - Calcium chloride

Fibrin sealants

- Separate the components into 2 syringes
- Forms solid coagulum within 3–5 min of delivery
- 70% of ultimate strength attained in the first 10 minutes; full strength reached in about 2 hours
Fibrin sealants

- Advantages
  - Biocompatible, with minimal inflammation or FB reaction, and no tissue necrosis
  - Safe and effective
  - Shortened surgical time, probably less inflammatory than suture, rapid healing, and improved patient comfort

Videos

- The use of tissue glue adhesives in ocular reconstruction surgery
Post-op KLAL with fibrin glue