Fibrin adhesives for Ocular Surface procedures

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Ocular Surface reconstruction is an important surgical approach to patients with conjunctival and corneal limbal stem cell deficiency

There are multiple causes for limbal stem cell injury

Ocular Surface Damage Injury

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

Disclosures

- Alcon – Consultant
- Bausch and Lomb - Consultant
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)

Enhanced with the use of tissue glue adhesives

- Fibrin sealant: (Tisseel, Evicel and others)

Fibrin sealant: Tisseel, Evicel and others

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

Fibrin sealants

- Forms solid coagulum within 2–5 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,
  - less inflammatory than suture
  - rapid healing
  - improved patient comfort

**Surgical videos**
- The use of tissue glue adhesives in ocular reconstruction surgery

**Post-op KLAL with fibrin glue**