Fibrin adhesives for Ocular Surface procedures

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Disclosures

- Alcon – Consultant
- Bausch and Lomb - Consultant
• 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
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)
Ocular Surface Reconstruction
Surgical techniques

Enhanced with the use of tissue glue adhesives

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