Use of Fibrin Tissue Adhesive and Amnionic Membrane in Conjunctival, Corneal and Refractive Surgery

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I have the following financial interests or relationships to disclose:
• Abbott Medical Optics  - C,L,O,P
• Allergan, Inc.     - C
• Bausch & Lomb Surgical - C,L,O
• Cadila    - C
• Essex Woodlands Health Ventures  - C
• GlaxoSmithKline Corporation  - S
• I-Therapeutix    - C,O,S
• Inspire Pharmaceuticals Inc  - L
• IOP Inc    - C,L,S
• Ista Pharmaceuticals - C,L
• Ivantis    - C
• Ocular Therapeutix - C,L,O,S
• ReVision Optics     - C
• Sirion Therapeutics, Inc  - C,L
• Transsaden/Medical - C
• Visionsen Inc  - C,L,S
• Vistakon Johnson & Johnson Visioncare, Inc  - C,P,S
• Vitreoretinal Technologies  - O

This course contains “off-label” recommendations that arise from the clinical experience of the instructors.

Available now at www.slackbooks.com

See handout on meeting website.

Video at www.bettereyesurgery.com

Course Outline
Introduction to Fibrin Tissue Adhesive – Dr. Hovanesian
Lasik Flap Complications – Dr. Hardten
Pterygium & Cataract surgery – Dr. Hovanesian
Corneal Surgery– Dr. Kaufman
PCIOL Fixation – Dr. Agarwal

Mechanical Characteristics

Comparison

• Stronger
• Does not bioabsorb

• Weaker bond
• Absorbs in 7-10 days
Resistance to Stress

- Strong against shear stresses
- Weak against tensile stresses

Ideal Indications

- Low tension wounds
- 7-10 day adhesion
- Rough surfaces (de-epithelialized)
- OK to use between other surfaces

Resistance to Stress

Preparation and Handling

Artiss (Baxter)
- Pre-loaded in syringe
- Good for 4 hours, maybe more
- Cost for multiple cases: $100 USD
- www.baxter.com

Evicel (J & J)
- Shipped frozen
- Good for 30 days after thawed if kept in fridge
- CAN use for multiple cases
- ~ $100 USD
- www.evicel.com

Ideal Indications

- Ideal for low tension wounds
- 7-10 day adhesion
- Rough surfaces (de-epithelialized)
- OK to use between other surfaces

Fibrin Adhesive Pearls

- Less is more
- Thin layer – squeegee
- Avoid manipulation after polymerized

Slowing Polymerization

Dilute thrombin (black label) with BSS

- 1:1 10-15 seconds
- 1:10 45-60 seconds
- 1:100 120 seconds +

Does not reduce tensile or shear strength.

Use of Fibrin Tissue Adhesive in Pterygium Surgery

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Pterygium: 3 Techniques That Work

1. Autograft: easy, 5% recurrence
2. AM graft + MMC: easy, 5% recurrence
   For surgeons doing bare sclera
3. Autograft + subconj AMT: more effort, <1% recurrence
   For surgeons doing autografts

Method 1: Autograft

Autograft Surgical Steps
**Pearls for Autografts**
- Thin graft
- Include limbal tissue
- Expect chemosis
- Nasal dehiscence is well tolerated

**Postoperative Management**
- Patch/shield overnight
- Drops
  - Prednisolone acetate 1% QID x 1 month
  - Fluoroquinolone QID x 1 week
  - NSAID x 1 week
- Follow-up 1 week

**Healing After Autografts**
- 1-2 weeks of significant redness
- Progressive healing
- Must monitor for IOP spike
- Continue Pred Forte 1 month

**Method 2: Pterygium/AMT**

**step 1**
Complete excision of pterygium leaving bare sclera

**step 2**
Fibrinogen is sparingly placed on scleral defect

**step 3**
Amnion is placed over defect and 3 to 4 mm under surrounding conjunctiva

**step 4**
Thrombin is placed on top of the amnion graft

**Mitomycin 0.02%**
- Use pledgets in subconj area
- Avoid exposure to bare sclera
- 2-3 minutes
- Irrigate with 30cc of BSS to wash away MMC
Different Forms of Amniotic Membrane

**AmbioCraft** vs **AmbioFlyx**
- 110 microns (bond paper)
- 90+ days
- Stroma + epithelium
- 35 microns
- 20 - 30 days
- Stroma + epithelium

Method 3: Autograft AND Amnion for High Risk Cases

Video

Thank you!