

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
- Baxter BioScience - C
- Digopter - C
- Essex Woodlands Health Ventures - C,L
- Glaukos 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
- Transcend Medical - C
- Visiogen, Inc. - C,L,S
- Vista Research - C
- 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.

PTERYGIUM

TECHNIQUES AND TECHNOLOGIES FOR SURGICAL SUCCESS

JOHN A. HOVANESIAN

Available now at www.slackbooks.com
See handout on meeting website.

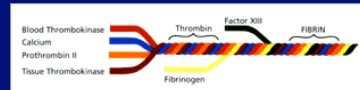
Video at www.bettereyesurgery.com



Course Outline

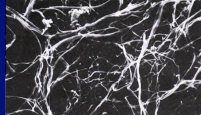
Introduction to Fibrin Tissue Adhesive – Dr. Hovanesian
Lasik Flap Complications – Dr. Hardten
Pterygium & Cataract surgery – Dr. Hovanesian
Corneal Surgery – Dr. Kaufman
PCIOL Fixation – Dr. Agarwal

Fibrin Tissue Adhesive "Tisseel/Artiss" (Baxter Healthcare) Evicel (Johnson & Johnson)

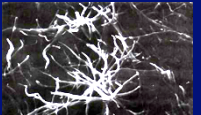


fibrinogen + aprotinin + thrombin + calcium chloride

Scanning Electron Microscopy




Fibrin Adhesive "Clot"




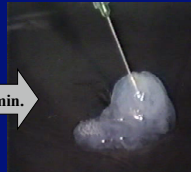
Human Plasma Clot

Mechanical Characteristics



2 - 3 min.





Comparison



- Stronger
- Does not bio-absorb



- Weaker bond
- Absorbs in 7-10 days

Resistance to Stress

Strong against shear stresses

Weak against tensile stresses

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Ideal Indications

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

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Preparation and Handling

<p>Artiss (Baxter)</p> <ul style="list-style-type: none"> • Pre-loaded in syringe • Good for 4 hours, maybe more <p>~ \$100 USD Can <u>NOT</u> use for multiple cases www.baxter.com</p>	<p>Evicel (J & J)</p> <ul style="list-style-type: none"> • Shipped frozen • Good for 30 days after thawed if kept in fridge <p>~ \$100 USD Can <u>CAN</u> use for multiple cases www.evicel.com</p>
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Fibrin Adhesive Pearls

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

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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.

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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

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Method 1: Autograft

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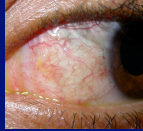
Autograft Surgical Steps

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Pearls for Autografts

- Thin graft
- Include limbal tissue
- Expect chemosis
- Nasal dehiscence is well tolerated



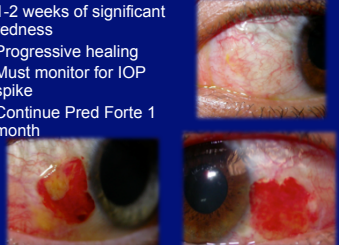
Postoperative Management

- 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

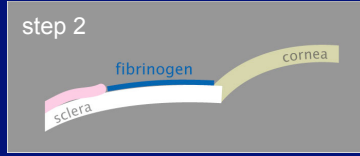
step 1



complete excision of pterygium leaving bare sclera

Pterygium/AMT

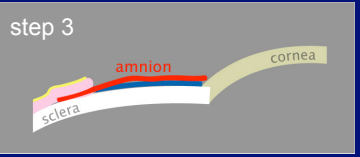
step 2



fibrinogen is sparingly placed on scleral defect

Pterygium/AMT

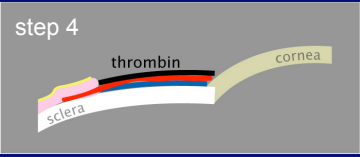
step 3



amnion is placed over defect and 3 to 4 mm under surrounding conjunctiva

Pterygium/AMT

step 4


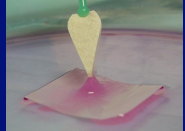




thrombin is placed on top of the amnion graft

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

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Ambio5 vs AmbioDry2

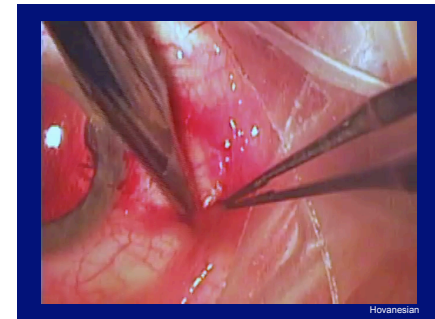


- 110 microns (bond paper)
- 90+ days
- Stroma + epithelium



- 35 microns
- 20 - 30 days
- Stroma + epithelium

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Method 3: Autograft AND Amnion for High Risk Cases




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Thank you!

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