

# The Greatest Anterior Segment Disease and Contact Lens Complications Course Ever

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### FINANCIAL DISCLOSURE FORM DR JACK L. SCHAEFFER

I HAVE RECEIVED HONORARIUM, COMPENSATION, OR SERVE AS AN ADVISOR TO THE FOLLOWING COMPANIES

- 
- ALCON
- ALLERGAN
- AMO/ABBOTT
- ARCTIC/DX
- ATON
- BAUSCH AND LOMB
- COOPERVISION
- ESSILOR
- ISTA
- HOYA
- OPTOVUE
- OPTOS
- VISTAKON
- ZEISS VISION

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2017 Disclosure Form Name: Paul M. Karpecki, OD

Company Name	How We Received	Service Role
Acute Pharmaceuticals	Consulting Fee	Consultant
Allergan	Consulting Fee	Consultant
Alcon	Consulting Fee	Consultant
AMO	Consulting Fee	Consultant
AMO/ABBOTT	Consulting Fee	Consultant
Arctis Lens	Consulting Fee	Consultant
Bausch & Lomb	Consulting Fee	Consultant
Becton Dickinson	Consulting Fee	Consultant
Carlson	Consulting Fee	Consultant
Ciba Vision	Consulting Fee	Consultant
Cooper Vision	Consulting Fee	Consultant
Essilor	Consulting Fee	Consultant
HOYA	Consulting Fee	Consultant
IBA Vision	Consulting Fee	Consultant
Optovue	Consulting Fee	Consultant
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Tea Labs	Consulting Fee	Consultant
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I have no direct financial interest in any company or product that is mentioned in this lecture.

**I am on the speaker panel for:**  
Alcon  
Allergan  
Abbott Medical Optics  
Bausch & Lomb  
BVI  
TeaLab

**I am a consultant for:**  
Alcon  
Allergan  
Abbott Medical Optics  
BioTissue  
Lunova  
OcuSOL  
TeaLab

Marc K. Bloomenstein OD, FAO

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## Dilation Vs Optomax

- The two together delivers a the highest level of Comprehensive Eye Care
- If you have to choose just one:  
DILATE, DILATE, DILATE

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## Telephone Consultations

30 YO WF

Telephone symptoms:  
sore upper lid, painful spot on lid

Internal Hordeolum??

Ready to Dx on telephone: decided to see the patient

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## Bacterial Conjunctivitis?

Extremely Tender Upper lid  
Upper lid swelling  
Excessive Mucous production

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## Bacterial Conjunctivitis Orbital Cellulitis?

Tx:  
PO

Augmentin PO 875 Mg Bid

Ocular  
Zymaxid OS q 2 h

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## Day 2

Facial Pain Headache  
Fever  
Referral to PCP, R/O Orbital Cellulitis  
Dx Severe Sinus infection:  
Contd Meds PO ( Augmentin)  
Antibiotic Injection in office  
Sinus infection  
Lid swelling with Pain

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- Admitted for pain control and IV antibiotics
- Proptosis, edema and pain with eye movement progressed despite broad spectrum IV antibiotics
- Urgent DCR performed



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## Chronic Unilateral Conjunctivitis

- 63 yo male with rosacea on chronic doxycycline referred with 'recurrent eye infections'
- Topical antibiotics would clear symptoms 'a little'
- Cultures grew out candida species
- Altered ENT microflora with chronic doxycycline



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## Chronic Chemosis after Blepharoplasty



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## Lid Disease- Infection

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## Treatment

- Keflex 500 Mg BID
  - Cephalexin
- Bactrim: double strength: BID
  - Trimethoprim/ Sulfamethoxazol
- Augmetin 875 mg BID
- Miboflow
- Hot compress ( Written instructions)

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## Treatment

- Keflex 500 Mg BID
  - Cephalexin
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- Hot compress ( Written instructions)

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## Chalazia

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### Periman IPL Protocol

- Prep: Trader Joe's or Simple micellar make up remover wipes. Commercial eyelid wipes as needed. Proparacaine, PF APTT, sterilized laser-grade corneal shields, thin-medium layer of clear ultrasound gel (take great care to avoid gel getting into eyes), applied with long edge of tongue depressor.
- Step 1: Full face rosacea pass (choose either telangiectasia or erythema based on clinical findings)
- Step 2: Toyos settings tragus to tragus, double pass
- Step 3: Switch to small light guide, treat lids, avoid eyelashes by 2mm, double pass
- Step 4: Aesthetic clean up: angioma (VL presets), facial telangiectasia (VL presets), chalazia etc. For chalazia, stack 3 extra Toyos pulses.
- Post-Procedure: remove gel with long edge of tongue depressor, gauze remove residual (again, take great care no gel gets into eyes), wipe with warm water. Pat into skin one drop Alphagan P mixed with EtakID or Skin Medica tinted sunscreen. Place 1:16 dilution of Alphagan P in Refresh Mega into eyes.



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## Caniliculitis/Dacryocystitis

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## Treatment

- Keflex 500 Mg BID
  - Cephalexin
- Bactrim: double strength: BID
  - Trimethoprim/ Sulfamethoxazol
- Augmetin 875 mg BID
- Hot compress ( Written instructions)
- MiBo Flow

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## Doctor number 3

- 68 YO female
- Pain discomfort 2 years OU
- OD > OS
- 3 rd doctor
- Treatment
- Restasis BID

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## Concretions Management

- Asymptomatic- neglect (@ 6% become symptomatic)
- Symptomatic
  - Fine tipped forceps delivery
  - 25 ga needle
  - Education R.E. recurrence

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## Allergic Dermatitis

- Elocon
- Mometasone Crème
- Lotemax ung

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## Rosacea

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## Eyelash Complications

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## EyeLash Whiplash

- Hygiene suffers
- Patients don't want to rub off their expensive extensions



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## Prostaglandin Analogs in OTC Eyelash Serums

- Aerodynamic compromise
- Upper eyelid discoloration
- MGD\*
- Hyperpigmentation
- Dermatitis
- Orbital Fat Atrophy
- Iris Color Change
- CME



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- MG toxicity from ink pigments
- “I'll Look Great Later and No Harm Done”
- Tattoo inks may be made from titanium dioxide, lead, chromium, nickel, iron oxides, ash, carbon black, and other ingredients. Some of the pigments are industrial grade and used as automobile paint
- MG trauma
  - Loss of lid margin architecture
  - MG dropout
  - high SPEED scores

Laura M Periman MD



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## Trauma / Abrasion

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## Corneal Abrasion

- Debridement of the Cornea
- Techniques
- Instruments
- Bandage Contact lenses
- Follow up protocols

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## Bandage contact lens

- Pros
- Cons
- Cyclo
- Antibiotic
- Nsaids

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## Follow up protocols

- Day 1
- Day 3
- If any symptoms post day 3
  - Telephone
  - Office visit

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- Excessive pain
  - Treatment
    - Bandage
    - Nsaid
    - Narcotics
    - Cycloplegia

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- Recurrent erosion
  - Any preventive measures

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## Recurrent Erosion

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## Recurrent Erosion

EBMD / ABMD

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## Case 2

- 50 YOF
- Woke up with discomfort
- Feels like something is in my eye

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### Case 3

- 50 YO male
- Punched in eye 3 weeks ago
- Ocular Contusion with no abrasions
- Va 20/40

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### Treatment Strategy

- ABMD
- RCE

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### Recurrent Corneal Erosion

- NaCl Ung Pm
  - Muro 128
- PF AT
  - Q 1-2 hours
- NaCl Gtts qid

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### Recurrent Corneal Erosion Long Term Therapy

- Restasis / Xiidra
  - Tid
- Fresh –Kote
  - Qid
- Lacriserts ?
- Hypertonic Vs Hypotonic AT

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- Amniotic membrane
  - Corneal specialists – not in favor
  - Any EBM to support
- Which type
  - How long to remain in eye
  - Follow up protocol

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### Treatment

- Nsaid ?
  - Delayed Corneal healing ?
- Bandage Contact lens
  - Antibiotic??
  - How often
  - RTC daily until healed? How often?
  - Remove and fresh lens and leave in place 3 days?

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## Recurrent Corneal Erosion

- Bandage Contact lenses
- Antibiotic ung
- Change lens how often
- See patient how often

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## Developing a Specialty Practice

Cornea Disease

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## Epidemic Keratoconjunctivitis

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## RPS Adeno Detector

- Prospective, masked, multi-center clinical trial in U.S. and Europe
- 186 consecutive patients examined all cases of acute conjunctivitis and compared to both cell culture and PCR
- 25% of all acute conjunctivitis confirmed Adenovirus
- RPS Detector
  - 89% Sensitive vs. 91% Cell Culture
  - 94% Specificity vs. 100% Cell Culture



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## Treatment EKC

- 1 lubricants
- 2 combo antimicrobial / steroid
- 3 Steroid
- 4 Betadine
- 5 Zirgan
- Contagious ? How long

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## EKC treatment Melton/ Thomas

- Povidone- Iodine 5% ( betadine)
  - Broad spectrum microbiocide
  - Indicated for "Irrigation of the ocular surface"
  - OFF LABEL USE
    - Anesthetize with proparacaine
    - Instill 1-2 drops NSAID
    - Instill several drops of betadine in eye ( close eye)
    - Swap excess over lid margin
    - After one minute irrigate with saline
    - Instill 1-2 drops NSAID
    - Rx Lotemax or Zylet or Tobadex ST qid 4 days
  - No reports of adverse reactions
  - Avoid if allergic to iodine
  - Betadine 5% ophthalmic prep soln ( 30 ml opaque)
  - 99070 supply code

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## 19yoF Red Eye OD

- Red Eye x 3 days with no pain, today was the first day with irritation
- Recently had Staph infection in leg, off antibiotics less than a week ago ( Bactrim)
- VA sc 20/20- OD 20/25 OS

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## Treatment

- Zylet qid OD
- RTC 1 day
- Some improvement over the new few days, but minimal.

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## Treatment

- D/c Zylet qid OD, begin Besivance q1h OD
- Differentials?

Pt showed significant improvement, at 1-day follow up

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## Differentials?

- Herpes Simplex Keratitis
- Adenovirus
- Solution Hypersensitivity
- MRSA
- Remember staph in fection leg treated with Bactrim
- Nursing student

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## Whats Next?

- Diagnosis
- Treatment

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## THYGESSONS

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## Thygessons

- Possible Thygeson's

When all else fails: Thygessons Vs HSV

- Discontinue ALL meds

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## Thygeson's SPK

- Described by Phillips Thygeson in 1950
- Slightly elevated corneal lesions, minimal staining
- Usually bilateral, Second to third decade
- Noted corneal sensitivity decreased but not as severe as herpes
- Mild conjunctival involvement, worse with exacerbations
- Appearance similar to EKC described by Fuchs

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## Thygeson's SPK

- Lesions in basal epithelial layer / Bowman's layer
- Debris from necrosis / degenerated epi cells
- Increased Langerhans cell density
  - Part of inflammatory response- Type II

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## Thygeson's SPK Treatment: Anecdotal

- Cyclosporin 2% in olive oil (8 patients)
- Supratarasal injection triamcinolone (1 case-chronic 6+ years)
- Trifluridine (6 eyes)
- PRK in myopic patient had lesions recur in periphery (untreated area) vs central (treated area)
- Rimexolone 1% for reversing dendritic cell density (4 patients)

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## Thygeson's SPK

- Steroid Use
  - Loteprednol 0.2%, 0.5%
  - Cyclosporine 0.05% Long Term

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## Back to the case...

- D/c All meds
- Lesions healed in 1 week
- No recurrences since October

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## Plaquenil Keratopathy

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## Vortex Keratopathy or Cornea Verticillata

### Clinical features:

- Symptoms: the corneal changes are rarely of any visual significance.
- Signs:
  - Symmetric, bilateral, whorl-like pattern of powdery, white, yellow or brown corneal epithelial deposits
  - Appears in a vortex fashion in the inferocentral cornea and swirls outwards sparing the limbus
- Occurs in Fabry's disease and in patients being treated with a variety of drugs including amiodarone, chloroquine, amodiaquine, meperidine, indomethacin, chlorpromazine and tamoxifen.

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## Ocular Surface Disease Secondary to Systemic Disease

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## Herpes Zoster Management

- Oral antiviral agent
  - Zovirax (acyclovir) 800 mg 5x / day x 7-10 days
  - Famvir (famciclovir) 500 mg tid x 7-10 days
  - Valtrex (valacyclovir) 1000 mg tid x 7-10 days
  - Discussed with nephrologist / PCP if renal disease present

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## Ocular findings:

- Conjunctivitis/Scleritis
- Pseudodendrites
- Neurotrophic keratitis
- Iritis
- Glaucoma
- ION, vein or artery occlusion
- Nerve Palsy

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## Iridocyclitis and HZO

- Most common and most often overlooked ocular complication (43%)
- Highly elevated IOP
- Study by Thean, Hall & Stawall -*clinical Ophthalmology Dec 2001*
- 56% of patients developed glaucoma!!

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## Treatment:

- Duration?
- 7 days for most patients although newer studies (Zaal - Am J or Ophthal. Jan 2001) suggest
- 10 days for patients over age 66 due to shedding

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## Treatment: Iridocyclitis

- Pred Acetate 1% q1h or q2h or
- Durezol (Difluprednate) 0.05% with half the dosing
- Lotemax Long term
- Cycloplegia
  - Homatropine 5% bid
  - Cyclopentolate 1% bid

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## Systemic Disease- Ocular Involvement

- Herpes Simplex

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## Treatment: Epithelial Involvement

- In the past: trifluoridine - Viroptic q2h
- New replacement: **Zirgan** 5 x per day until ulcer disappears then TID x 1 week
- PO Valtrex 500mg TID
- PF artificial tears
- Follow-up (next day), day 3-4, day 7-10

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## Zirgan™ (Ganciclovir Ophthalmic Gel) 0.15%

## Zirgan™ (ganciclovir ophthalmic gel) 0.15% Indication

### Dosage and Administration

- The recommended dosing regimen for Zirgan is 1 drop in the affected eye 5 times per day (approximately every 3 hours while awake) until the corneal ulcer heals, and then 1 drop 3 times per day for 7 days.

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## Treatment: Stromal keratitis or Endotheliitis

- Durezol QID
- Pred Forte Q2H
- Cover with PO Acyclovir (400 mg bid) or Valtrex (1000mg QD) or topical (Zirgan TID)

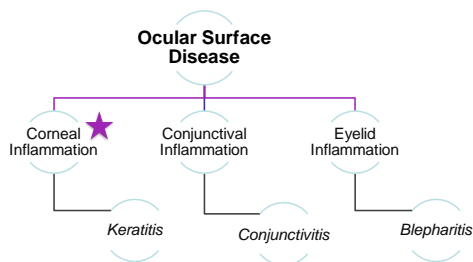
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## Restoring Corneal Clarity

- \* Prokera inserted
- \* Patient continued oral Valtrex 500mg QD
- \* Returns 5 Days later for removal:

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## Inflammation is the Hallmark of All Ocular Surface Diseases



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## The Structure of the Fetal Amniotic Membrane

- |                   |  |
|-------------------|--|
| Epithelium        | <ul style="list-style-type: none"> <li>• Metabolically active cuboidal cells with microvilli present on its apical surface</li> </ul>  |
| Basement Membrane | <ul style="list-style-type: none"> <li>• Made up type IV, V and VII collagen (also found on conjunctival and corneal basement membranes)</li> <li>• Fibronectin and Laminin</li> </ul> |
| Stroma            | <ul style="list-style-type: none"> <li>• Compact Layer provides tensile strength</li> <li>• Fibroblast Layer</li> <li>• Spongy Layer</li> </ul>  |

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