How I Met Your Cornea
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Pensacola, Florida
COPE 34801-GO

Is it a good time to be an optometrist?
Would you tell your children to become an optometrist?

Opportunity: Treatment of Eye Care Conditions

Prescribed an ophthalmic drug once in the past year

<table>
<thead>
<tr>
<th>Specialty</th>
<th># of Doctors</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Other Specialties</td>
<td>427,479</td>
</tr>
<tr>
<td>Primary Care</td>
<td>190,885</td>
</tr>
<tr>
<td>Pediatricians</td>
<td>49,400</td>
</tr>
<tr>
<td>Optometrists</td>
<td>31,620</td>
</tr>
<tr>
<td>Veterinarians</td>
<td>23,816</td>
</tr>
<tr>
<td>Ophthalmologists</td>
<td>19,876</td>
</tr>
<tr>
<td>Ear Nose &amp; Throat</td>
<td>10,604</td>
</tr>
<tr>
<td>Podiatrists</td>
<td>7,260</td>
</tr>
<tr>
<td>Allergists</td>
<td>4,521</td>
</tr>
<tr>
<td>Pediatric Ophthalmologists</td>
<td>470</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>769,337</strong></td>
</tr>
</tbody>
</table>

Unmet Needs & New Horizons for Vision Correction

Opportunity and New Horizons for Vision Correction

Key Solutions for Contact Lens Drop Out

Source: Internal CIBA Vision Data
Leveraging Contact Lens Innovation

**ACTUAL**
Current Vision Correction by Contact lens type

- Spherical
- Multifocal
- Toric

$3.0 Billion

**OPPORTUNITY**
Vision Correction Required by Contact lens Wearing Population

- Spherical
- Multifocal
- Toric

$5.7 Billion*

So Why Dry Eye?

- 1.7 billion dollar market with artificial tears being nearly 1 billion in the U.S.
- Growing 10-11% per year

Dry Eye

- 33% of dry eye patients diagnosed by a doctor purchase either a store brand or a redness reliever like Visine®.
- 50% of dry eye sufferers choose redness relievers or allergy drops – the wrong type of drop for dry eye relief.

Recent Gallup Study of Dry Eye Sufferers

<table>
<thead>
<tr>
<th>Doctor Diagnosed</th>
<th>Self Diagnosed</th>
</tr>
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<tbody>
<tr>
<td>(45%)</td>
<td>(55%)</td>
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</table>

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Comfort...Unmet Medical Need

History
- 35 year old white female
- Presents with FB sensation and general ocular irritation for 3 days
- Started in OD then OS
- History of this same thing 15 years ago

Do You Give a Recommendation or Just a Free Sample?

Symptoms
- FB Sensation
- No Pain
- Some Watering
- OD
- No redness or discharge

Case 1

Biomicroscopy
- OD:
  - Central diffuse epithelial opacities
  - A/C Clear
  - Slight FL Staining
- OS:
  - Central diffuse epithelial opacities
  - A/C Clear
  - Slight FL Staining
Biomicroscopy

DDX
- Viral Keratoconjunctivitis (EKC)
- CLAARE
- Thygeson’s
- Infiltrative Keratitis (Corneal infiltrate)

Treatment / Management
- What would you do?
  - Artificial Tears
  - Steroid
  - Restasis??
  - Bandage Lens

Diagnosis
- Thygeson’s SPK

What is the etiology?
Case 2

History
- 42 year old white female
- Presents with FB sensation OU
- History of Dry Eye
- Eyes Red and Light Sensitive

Symptoms
- FB Sensation
- Moderate pain
- Redness but no discharge
- Light sensitive

Biomicroscopy
- OD:
  - Central diffuse epithelial opacities
  - A/C Clear
  - Slight FL Staining
- OS:
  - Central diffuse epithelial opacities
  - A/C Clear
  - Slight FL Staining

DDX
- Viral Keratoconjunctivitis (EKC)
- CLAARE
- Thygeson’s
- Infiltrative Keratitis (Corneal infiltrate)
- Filamentary Keratopathy
Diagnosis

- Filamentary Keratopathy

What is the etiology?

- Dry Eye Syndrome
- SLK
- RCE

Treatment / Management

- What would you do?
  - Debridement
  - Artificial Tears
  - Bandage Lens
  - Acetylcysteine
  - Punctal Occlusion

CONTROVERSIES

SECTION EDITOR:
LEE M. JAMPOL, MD
Rationale for Adjunctive Topical Corticosteroids in Bacterial Keratitis
Holly B. Hindman, MD; Sheel B. Patel, MD; Albert S. Jun, MD, PhD

(REPRINTED) ARCH OPHTHALMOL/VOL 127 (NO. 1), JAN 2009
WWW.ARCHOPHTHALMOL.COM

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CONTROVERSIES

The Case Against the Use of Steroids in the Treatment of Bacterial Keratitis
Elisabeth J. Cohen, MD

(REPRINTED) ARCH OPHTHALMOL/VOL 127 (NO. 1), JAN 2009
WWW.ARCHOPHTHALMOL.COM

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Steroids for Corneal Ulcers Trial (SCUT)

- The study is a randomized, double-masked, placebo-controlled trial to determine whether adding topical steroids to antibiotic treatment improves the outcomes of bacterial corneal ulcers. Bacterial corneal ulcers presenting to the Aravind Eye Hospital, the UCSF Proctor Foundation, and the Dartmouth-Hitchcock Medical Center will be randomized to receive antibiotic (moxifloxacin) plus steroid (prednisolone phosphate) or antibiotic plus placebo. They will be followed closely until re-epithelialization and then rechecked three weeks and three months later.

SCUT Update

- CONCLUSIONS:
  
  We found no overall difference in 3-month BSCVA and no safety concerns with adjunctive corticosteroid therapy for bacterial corneal ulcers.


CASE 3

History:
Young female presents to the office with excruciating pain, photophobia and decreased vision in OD.

Pt. was getting ready for work and slipped with her curling iron. Hit cornea and lid.
What would you do?
A. Patch/Antibiotic
B. Bandage CL/Antibiotic
C. Patch/Combo
D. Bandage CL/Combo
E. Antibiotic alone
F. Combo alone
G. Artificial tears

Why Debride?
- Wound Management
- Increase Healing
- Reduce RCE
Procedure
- Instill
  - Anesthetic
  - Antibiotic
  - NSAID
- Pull defect toward center
- Roughen basement membrane

Post Debridement
- Cycloplegic
- Antibiotic
- Pressure Patch?
ASP

- Procedure
  - Start at edge of defect and work toward center
  - Multiple punctures within the area

Post ASP

- Cycloplegic
- Antibiotic
- NSAID
- Pressure Patch
- Long Term
  - Hyperosmotics
  - Artificial Tears

Cornea-Copia

Clinical Light Bulbs

Corneal Trauma

- What happens?
  - Prostaglandins and other mediators are released
  - Results in
    - Pain
    - Miosis
    - Decreased IOP
Pain Management
- Stop before it starts
- Topical NSAIDS
- Oral Analgesics

Chemical Burns
- Immediate Irrigation
- DO NOT CHECK VA
- History, History
- Acids
- Bases

Abrasion Management
- What do you do?
  - Patch
  - Bandage CLs
  - Collagen shield?
  - Nothing at all

Irrigation
- Saline In Bottles
- Water
- Whatever you have

Any Indication For Oral Antibiotics?

The Morgan Lens
- History
- Scleral mold lens
- Attaches to IV bag
- Continuous irrigation
- 1-800-423-8659
Chemical Burns

<table>
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<tr>
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<td>Delivery of Antibiotics</td>
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<th>Contraindications</th>
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<td>Suspected Penetrating FB</td>
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After Irrigation
- Check pH with litmus paper
- FL stain and evert lids
- IOP
- Antibiotic

After Irrigation
- Cycloplegic
- Pain Management
- Steroids

Anterior Segment Grand Rounds
Quick Hitters

The Morgan Lens

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Another One

- Anything Different?
- What would we do prior to removal?

Have You Flipped Your Lid

Another Quick Hitter

- 7 yo male with this presentation
Final Cases

What Are Biologics?

PROKERA® SLIM

Incorporates New ComfortRING™ Technology for an optimal patient experience

- Slim profile designed to contour to the ocular surface
- Elegantly designed to move with the eye
- Maximizes amniotic membrane contact with the cornea, limbus, and limbal stem cells

PROKERA® SLIM

“The Sooner the Better”

Recurrent Corneal Erosion

52 year-old female presented with ocular pain and blurred vision (20/200) for 2 weeks. She had a history of similar attacks & diagnosed as RCE. Epithelial debridement, lubricants and BCL failed to relieve pain and halt recurrence.

Treatment Strategy

- Epithelial debridement to remove loose epithelium (Fig. A, B) followed by placement of PROKERA® SLIM
- On the 2nd day, the patient had no pain. Complete healing occurred within 3 days, resulting in clear cornea and 20/20 vision. A smooth surface remained stable with no recurrence for 13 months follow-up (Fig. C, D)

PROKERA® should be considered after lubricants have failed

5/19/2014
Thank you for your attention!