


**I'm Alright:
Reducing Dropout and Keeping Your Patients
Happy in Contact Lenses**

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1

**Financial Disclosures - Mark
Schaeffer, OD FAAO**
I Have Received Honoraria From:


- Acuvue/Soft - Consultant
- Alcon - Consultant, Speaker
- Allergan - Consultant, Speaker
- Bausch + Lomb - Consultant, Speaker
- CooperVision - Consultant
- Johnson & Johnson Vision Care - Consultant
- LENZ Therapeutics - Consultant
- Optima - Consultant
- Science Based Health - Consultant
- Sight Sciences - Consultant
- Tenax - Consultant
- Vios - Consultant
- Zenni - Consultant


 Founder, Dr. MES Consulting
 Founding Member, Intrepid Eye Society

2

The n=1 Paradox of Eye Care

3



**Contact Lens
Dropout**

- The inability or lack of desire, motivation for the patient to wear contact lenses
 - Active or passive

4

Questions to Answer

- Why do patients decrease or stop wearing contact lenses?
- Is this affecting your practice?
 - How much is this affecting your practice?
- What can we do to help our patients continue to enjoy lens wear?

5

**The last 20
years in
Contact Lens
Advancements**

- What has changed in the contact lens market in the last 20 years?

For the better:

 - New materials designed for more moisture, oxygen transmissibility, better hydrophobic/hydrophilic properties, transitions, HEVL/Blue light blocking technology
 - Increased daily disposable percentages across the nation
 - Increased parameters for contact lens wearers including custom lenses
 - More Hybrid, Scleral, RGP options
 - Better solutions designed to increase wettability, decrease dehydration, better safety profile
 - The ability to diagnose and treat ocular surface disease

6

The last 20 years in Contact Lens Advancements


- What has changed in the contact lens market in the last 20 years?
 - For the worse:
 - Still no silver bullet for contact lens wear, no perfect lens
 - Still few* (but increasing) options for certain parameters
 - Increased demand of visual function
 - Longer hours staring at screens and devices
 - Increased side effects from medications and systemic manifestations
 - More auto-immune conditions
 - More preservatives in makeup and cosmetics / Beauty trends
 - Greater awareness of issues affecting ocular surface and contact lenses

7

**Ask the audience:
Are you measuring contact lens dropout rates?**

Do you have a way to track this?

8




By the numbers


- Dropout rate
 - Which study are you looking at?
 - 5% to 30%
 - Does this look accurate to you?
 - New CL wearers have higher dropout rates than existing wearers
- Reasons patients discontinue or modify lens wear
 - Discomfort (~50%)
 - Vision (~25%)

9

Affecting the practice

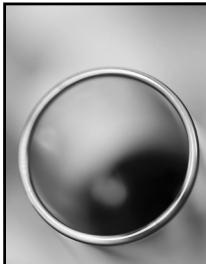


Negatively affects revenue, visit length, and patient retention
Daily disposable CL wearers spend more money in your practice
• Even after adjusting for CL materials and services
Contact lens wearers more likely to return and return sooner!



Think about the contact lens evaluation process
What are you doing that differentiates from others?
Who is becoming your biggest competition?
Generic Rx possibility

10



Contact Lens Evaluations

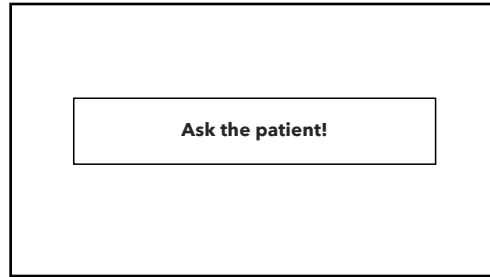
- Sets the expectation for the patient that we are looking at the whole picture
- Charge for the time and expertise to fit and evaluate lenses
- Actually examine and educate the patient regarding their contact lens wear, habits, and ocular health
- Let the patient in on the decision making process

11

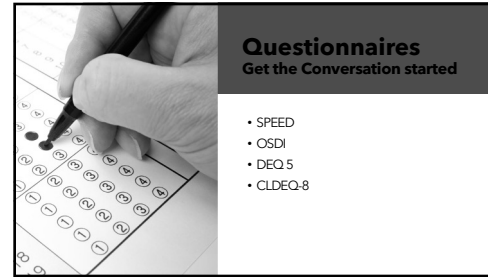
What do you do in your practice to identify patients for contact lens dropout?

- Proactive: Asymptomatic patients / Patients at Risk?
- Reactive: Waiting until symptomatic?
- Retrospective: Waiting for patient to say they want to go back into lenses but had trouble in the past?

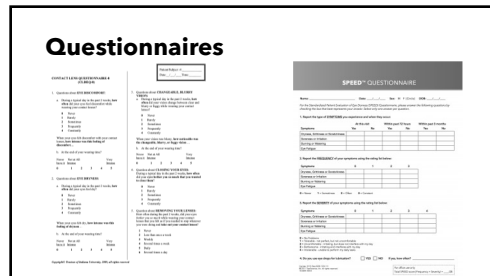
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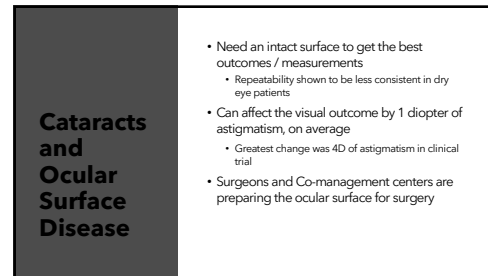
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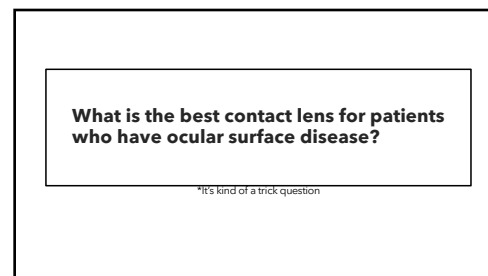
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What is the best treatment for dry eye in contact lens wearers?

*It's also a trick question

19

Off-label usage

Contact lenses in dry eye patients and dry eye treatments in contact lens patients aren't necessarily explicit

However, as doctors, we get to exercise our best judgment to provide the best management for our patients

20

A quick aside about treatment options

| | |
|--|--|
| <ul style="list-style-type: none"> • Topical usage: <ul style="list-style-type: none"> • Restasis (cyclosporine) • Xiidra (lifitegrast) • Cequa (cyclosporine) • Euphrasia (cyclopamine, azithromycin, Silybum marianum) • Tylosol (oxerandrol) • Eysavis (oteprednol) • Mielbo (perfluorohexyloctane) • Meye (cyclosporine) • Ocularate (serengetin-bk4) • Regener Eyes (Biologic) • Stimulyes (Biologic) • Autologus Serum drops • Platelet Rich Plasma drops | <ul style="list-style-type: none"> • Procedural treatment: <ul style="list-style-type: none"> • LipiFlow Thermal Pulsation • TearCare with expression • iLux/iLux2 • Intense Pulsed Light therapy • Low Level Light Therapy • MielboFlo • MDR • Maskin Probing |
|--|--|

21

Let's look at some cases

22

Case #1

23

33 yo M reports to the clinic

- Here today for comprehensive EE for glasses and contact lenses
- Wears toric monthly EW disposable lens
 - Disposes roughly every month
 - Uses BioTrue solution
 - Sleeps in lenses 4-5 nights per week
- After asking more questions:
 - Vision fluctuates throughout the day and over the lifetime of the lens, even on day 1
 - Has comfort issues with lens, especially at the end of the day

24

Case 1 findings

| Rx | OD | VA | OS | VA |
|--------------|----------------|-------|----------------|-------|
| Spectacle Rx | -5.00-2.00x078 | 20/15 | -5.00-2.00x096 | 20/15 |

| Comprehensive Exam findings | |
|-----------------------------|--|
| Lids | Trace MGD, easy expression, debris upon expression |
| Conjunctiva | 1+ bulbar hyperemia |
| Cornea | Trace SPK inferior OU |

WHAT'S THE NEXT STEP?

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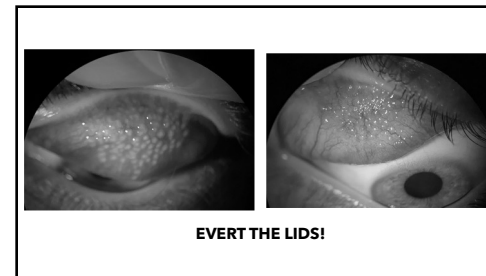
Multiple Choice

- A. Educate on proper compliance and keep patient in monthly, decrease to DW only
- B. Change monthly lens keeping patient in EW 6 on / 1 off
- C. Change to daily disposable lens to increase compliance, decrease symptoms
- D. Discontinue contact lenses
- E. Change solution to Hydrogen Peroxide solution
- F. Add OTC lubricating drop prn
- G. Combination of the above
- H. None of the above

26



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Giant Papillary Conjunctivitis

- Inflammatory response to contact lens material and overwear
- D/c CLs x 4 weeks
- Rx Steroid QID OU x 2 weeks
BID x 2 weeks

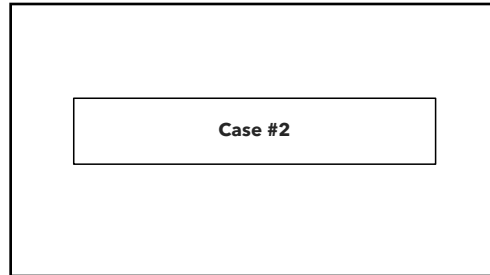
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Follow-up

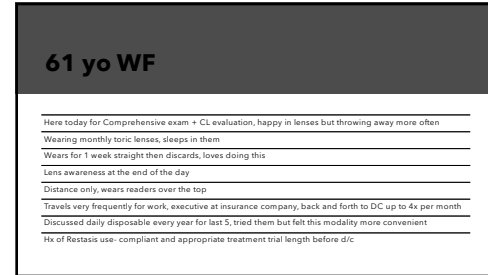
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    graph TD
      A[6 weeks later] --> B[Refit into daily disposable toric lenses]
      B --> C[Patient VA]
      C --> D[Distance 20/15 | Near J1+]
    
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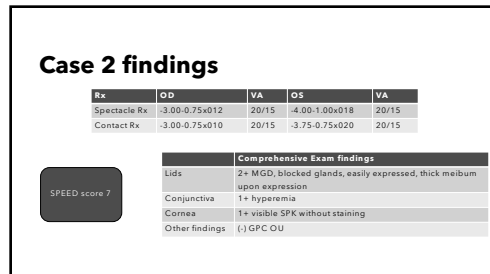
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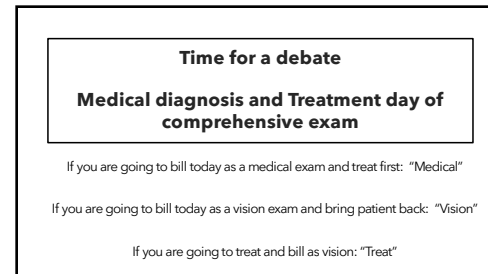
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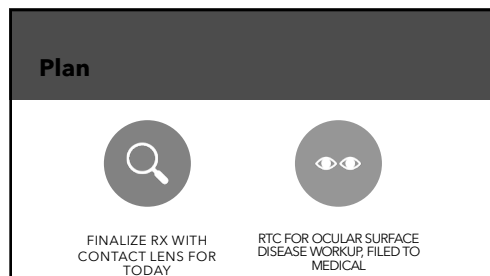
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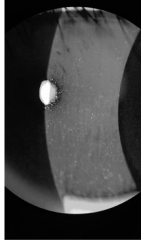
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36

Example

- Chief Complaint:
 - I haven't been able to wear lenses and I want to get back into them, but my eyes are too dry



37

At the end of the day...

Take care of the patient and set them up for the best success

- Change lenses
- Discontinue to reset the ocular surface / Contact Lens Holiday
- Treat ocular surface
- Complete the evaluation today along with a plan to address the surface

Set reasonable expectations and educate regarding the plan

- Use the patient's previous compliance as motivation and reasoning for this path
- Empathize with patients about the situation

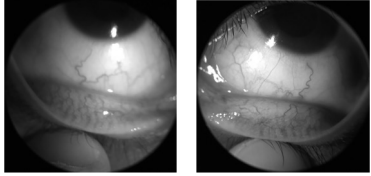
38

Back to our patient...



| | Ocular Surface Disease Workup |
|--------------------------|--|
| Symptomatology score | 13 / 24 (>7 = OSD) |
| Osmolarity | OD 297 OS 328 |
| Fluorescein staining | Diffuse conjunctival staining 2+ scattered, non-coalesced SPK |
| Lissamine Green staining | Scattered conjunctival staining Trace corneal staining |
| Tear Break Up Time | 5 seconds OU |
| Melbography | See picture |


39



What if I don't have diagnostic equipment

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The Silver Medal of "Low Tech" Diagnostic Equipment for Dry Eye Disease



- Augmented Vision Labs
 - iSLA adapter for slit lamp
 - 3-D printed to fit ocular and smartphone

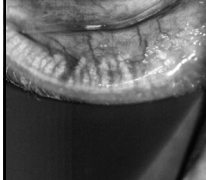
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The Gold Medal of "Low Tech" Diagnostic Equipment for Dry Eye Disease



42

Treatment plan



LIPIFLOW TREATMENT TODAY

START ON HYDROEYE PO BID

RTC IN 2-4 WEEKS FOR PROGRESS EVALUATION

43

MGD treatments + CL wear

- Blackie et al: Clin Ophthalmology 2018
 - Clinical study of 65 contact lens wearers
 - Patients who had LipiFlow done had less symptoms and enjoyed up to 4 more hours of comfortable contact lens wear than those who had placebo treatment done
- Yang et al: Contact Lens and Anterior Eye 2022
 - 152 Contact lens-induced dry eye patients treated with IPL
 - Statistically significant Improved symptoms, TBUT, expressibility, Lipid layer at day 42 vs sham treatment

44

Why oral supplementation?

- Clinically proven reduction in inflammation and Meibomian gland disease with oral supplementation
 - HydroEye: Gamma Linoleic Acid (GLA: Omega-6 / Omega-3 blend)
 - PRN: Eicosapentaenoic Acid / Docosahexaenoic Acid (EPA/DHA)
- DREAM study findings
 - Limitations and drawbacks

45

Outcomes

- Patient successfully treated with LipiFlow
- Using HydroEye bid po
- Finally switched her to daily disposable CLs
 - Semi-retired so not traveling as much
 - "Why was I never in these before?!!?!"
- Referred her husband, 3 co-workers, 3 "ladies who lunch"

46

Case #3

47

35 year old WF

Here today for Comprehensive EE and CL evaluation: Daily disposable CL wearer (non-SiHy)

Was switched at other OD office 1-2 years ago into daily disposable due to dryness in monthly

(+) mild dryness at computer during the end of day especially hours 8-10

Has been using unknown OTC drop pm

Interested in what drop they should add to their regimen

48

Exam findings

| Rx | OD | VA | OS | VA |
|--------------|----------------|-------|----------------|-------|
| Spectacle Rx | -2.50-0.25x170 | 20/15 | -2.75-0.25x002 | 20/15 |
| Contact Rx | -2.50sph | 20/15 | -2.75sph | 20/15 |

SPEED score 8

| Comprehensive Exam findings | |
|-----------------------------|--|
| Lids | 1+ MGD, blocked glands, difficult expression, thick meibum upon expression |
| Conjunctiva | (-) GPC OU |
| Cornea | (+) NaFL staining on cornea |

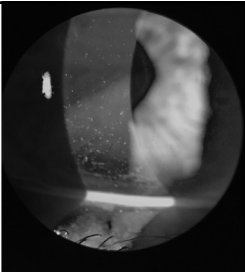
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Choose Your Own Adventure

- A. Change to different daily disposable
- B. Same lens, add brand name OTC drop
- C. Contact Lens Holiday
- D. Treat ocular surface disease

50

DOES THIS CHANGE YOUR THINKING?



51

WHY NOT BOTH A & D?

TREAT UNDERLYING DISEASE
UPGRADE INTO NEW TECHNOLOGY

52

PLAN

- Upgrade into Premium SiHy lens**
 - "I didn't know this is what contact lenses were supposed to feel like, or rather not feel"
 - "I've been wearing contact lenses for 25 years, I've never not felt them"
- Treat Ocular Surface disease**
 - Initiated varenicline bid
 - Supplementation po bid

53

FOLLOW-UP

- Patient returns 8 weeks later
 - Compliant with medication
 - SPEED score down to 3
 - Still loving her contact lenses

54

Case #4

55

30 YO BF

- Reports to the clinic for red eye / urgent care visit (April)
- Was refit into a monthly lens in September
 - Previously wearing old technology in 2 week lens but was open to change to a monthly
 - BCVA 20/20 OD, 20/25+2 OS
- Watering, redness OS>OD been going on for 1-2 days
- Hasn't worn CL in a while, at least 2 weeks but not sure exactly

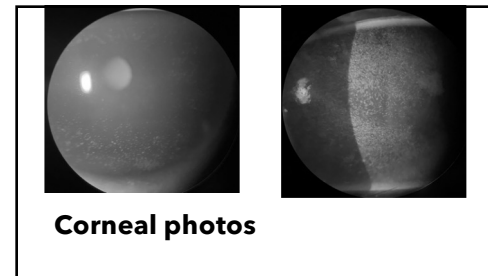
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Exam findings

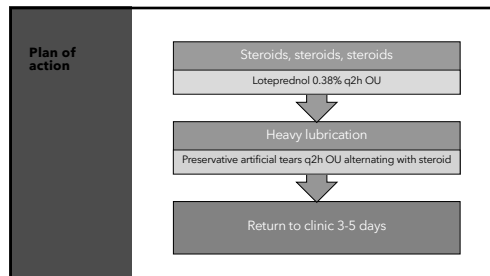
| Rx | OD | VA | OS | VA |
|--------------|----------------|-------|----------------|-------|
| Spectacle Rx | -5.75-0.25x114 | 20/25 | -4.75-1.00x002 | 20/30 |

| Slit Lamp Exam findings | |
|-------------------------|------------------------|
| Lids | Healthy, normal meibum |
| Conjunctiva | 1+ injection OU |
| Cornea | See photos |

57



58



59

Follow-up #1

- Patient reports eyes feeling better, less irritation and watering
- Compliant on medications
- Reports symptoms around 3 out of 10 on severity scale

60

Exam findings

| Rx | OD | VA | OS | VA |
|--------------|----------------|-------|----------------|-------|
| Spectacle Rx | -5.75-0.25x114 | 20/25 | -4.75-1.00x002 | 20/25 |

| Slit Lamp Exam findings | |
|-------------------------|---|
| Lids | Normal |
| Conjunctiva | White and quiet |
| Cornea | OD: trace SPK inferior, scant staining OS: 2+ SPK, small pattern central, no large areas of staining |

61

Follow-up #1 - Plan

- Continue steroids, decrease to qid OU
- Continue lubrication q2h OU
- RTC 2 weeks




- Patient has no staining at 2 week follow-up visit, wants to go back into contact lenses
- Decrease steroid to bid OU x 5 days
 - Pre-lens insertion
 - Post-lens removal

62

3 months later...

63

Welcome back, welcome back, welcome back

-  Patient returns for a comprehensive eye exam
-  Doing well in contact lenses but noticing some redness and dryness
-  Ready to get new glasses and contact lenses

64

Exam findings

| Rx | OD | VA | OS | VA |
|--------------|----------------|-------|----------------|-------|
| Spectacle Rx | -5.75-0.50x164 | 20/15 | -4.75-0.50x006 | 20/20 |

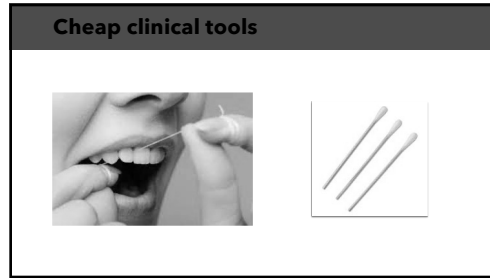
SPEED score 6

| Comprehensive Exam findings | |
|-----------------------------|---|
| Lids | Healthy, normal |
| Conjunctiva | (-) GPC OU |
| Cornea | OD: no staining, clear, quiet OS: 3+ SPK scattered diffuse, central; corneal neo superior and inferior |

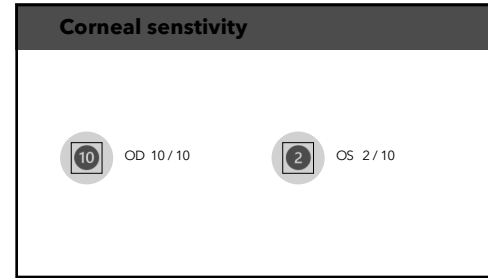
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What's a test I should do here?

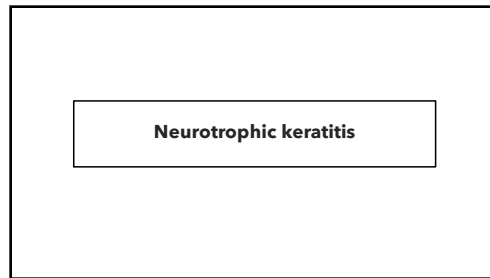
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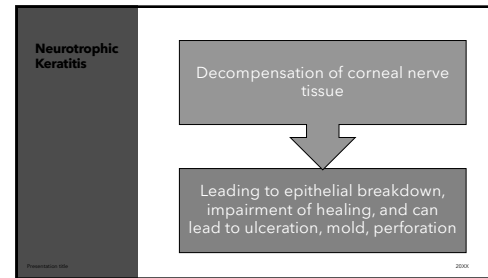
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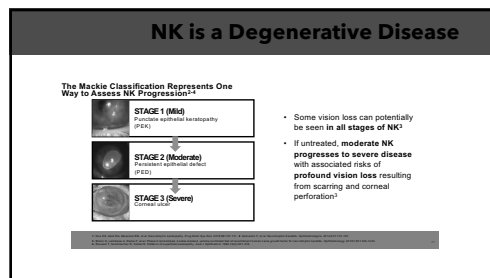
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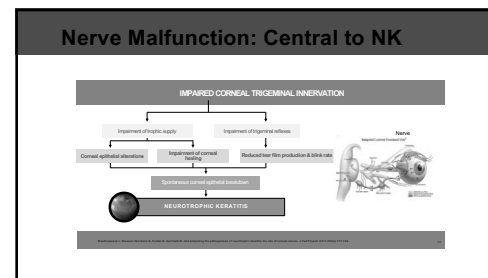
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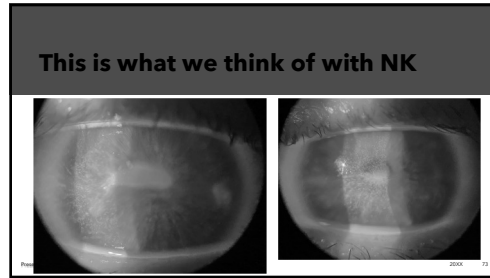
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74

Back to our patient

- Treatment
 - ProKera Slim Amniotic Membrane applied to OS
 - Partial tarsorrhaphy with transpore tape applied to upper eyelid OS
 - RTC 5 days

75

Why Prokera? Peripheral Nerve Damage: A Vicious Cycle

- John T, Tighe S, Sheha H, Hamrah P, Salem ZM, Cheng AM, Wang M, Rock ND.
- Corneal Nerve Regeneration after Self-Retained Cryopreserved Amniotic Membrane in Dry Eye Disease.

These nerves are responsible for regulating the corneal sensitivity, blink reflex, tear production, and epithelial regeneration, and hence, its injury **further induces a self-perpetuating cycle of deterioration...**

...recent studies...have demonstrated a strong correlation between the severity of DED and the loss of corneal nerves, suggesting that **corneal nerve density can be used to gauge the severity of DED**

76

Why Prokera? Improvements in Corneal Nerve Density & Sensitivity

John T, Tighe S, Sheha H, Hamrah P, Salem ZM, Cheng AM, Wang M, Rock ND.
Corneal Nerve Regeneration after Self-Retained Cryopreserved Amniotic Membrane in Dry Eye Disease.

...**(Cryopreserved Amniotic Membrane) is also rich in neurotrophic factors...which may promote corneal nerve regeneration and hence explain its lasting effect in DED treatment.**

J Ophthalmol. 2017;20(7):462-470. doi: 10.1155/2017/462470. Epub 2017 Aug 15. PMID: 2881426; PMCID: PMC5521026.

77

Oxervate (cenegermin-bkbj 0.02%)

- Topical FDA approved drop for treatment of Neurotrophic keratitis
- 1 drop in affected eye 6x/day x 8 weeks
- Arrives in a pipette on weekly basis

78

3 days later

- Patient returns back to the clinic due to intolerance to ProKera amniotic membrane
- Having lots of burning and irritation
- Tried to educate the patient on importance of keeping in longer
- Patient still wanted to remove that day

79

After removal

Patient had mild 1+ SPK scattered throughout cornea
 * Diffuse pattern
 * Sparse pattern central

Start back on loteprednol qid OU x 2 weeks

After 2 weeks, started taper, RTC in 1 month for comprehensive eye exam

80

1 months later

Comprehensive eye exam time

Wants a CL with more moisture

81

Exam findings

| Rx | OD | VA | OS | VA |
|--------------|----------------|-------|----------------|-------|
| Spectacle Rx | -5.75-0.50x158 | 20/15 | -4.50-1.00x001 | 20/15 |
| Contact Lens | -5.50sph | 20/15 | -4.50-0.75x180 | 20/15 |

SPEED score 9

| Comprehensive Exam findings | |
|-----------------------------|---|
| Lids | Healthy, normal |
| Conjunctiva | (-) GPC OU |
| Cornea | OD- no staining, clear, quiet OS- trace SPK, scattered TBUT OU: 6 seconds |
| Retina | Healthy, normal, (-) H, T, D 360 |
| Optic Nerve | 0.3/0.3 OU |

82

Plan

- Refit into daily disposable SiHy lens
- Added cyclosporine bid OU
- Added supplementation bid po

83

Case #5

84

61 yo WM

- Reports to clinic for comprehensive eye exam and contact lens exam
- Long history of contact lens wear 20+ years
- Switched into SiHy Multifocal CL 5 years ago
- Overall very happy, has enjoyed the switched in DD

85

Exam findings

| Rx | OD | VA | OS | VA | Near VA |
|--------------|----------------------|--------|----------------------|--------|---------|
| Spectacle Rx | -2.00-0.50x090/+2.50 | 20/15- | -2.00-1.00x090/+2.50 | 20/15- | J1+ |
| Contact Lens | -2.00/High | | -2.00/High | 20/15- | J1 |

SPEED score 4

| Comprehensive Exam findings | |
|-----------------------------|---|
| Lids | Thickened lids, turbidity of expression, saponification along lid margin |
| Conjunctiva | (-) GPC OU, 2+ injection, (+) NaFL staining |
| Cornea | OD: (+) NaFL staining inferior OS: (+) NaFL staining inferior Decreased tear meniscus |
| Retina | Healthy, normal, (+) H, T, D 360 |
| Optic Nerve | 0.45/0.45 OU |

86

Recent history (last few years)

- Rx has fluctuated each year
 - Has been as high as -2.75/HI OU
 - Has been as low as -1.75/HI OU
 - Vision has been stable as 20/15 and J1 - J1+
- Has recently noticed that some days are better than others in contact lenses

87

Representative video

88

Non-obvious MGD

- Those lids LOOKED normal, right?
- Easy to skip over lids when they appear that way
- Stresses importance of pressing on every gland
- We don't know what we don't know

89

Treatment Plan

- In-office Meibomian Gland Heat and Expression
- Started on Supplementation

90

1 month later

- Patient doing better, getting more consistent vision
- Remove CLs, get NaFL staining
 - (+) staining scattered throughout cornea
 - Decreased tear meniscus
- Started on cyclosporine bid OU to boost tear production, decrease inflammation

91

So the patient wasn't fully compliant...

- Started taking drops 3-4x per week
- Reported mild improvement from symptoms
- Re-educated about taking medication

92

Skip to the "I told you so part"

- Patient reports better compliance and now can tell the difference at near when taking drops and when he forgets
- Keep encouraging
- People are human



93

Take home pearls

- Ask the right questions
- Start looking for early signs, symptoms
- Treat the disease
- Upgrade lenses to promote longevity of contact lens wear
- Small changes today yield huge dividends down the road
- Explain the "why" behind what is prescribed and treated

94

Thank you!

mark@drmesconsulting.com

95