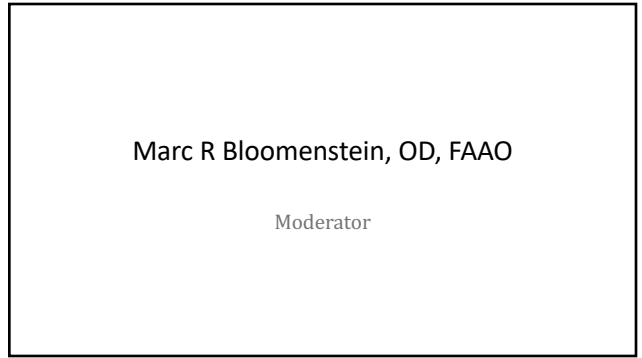
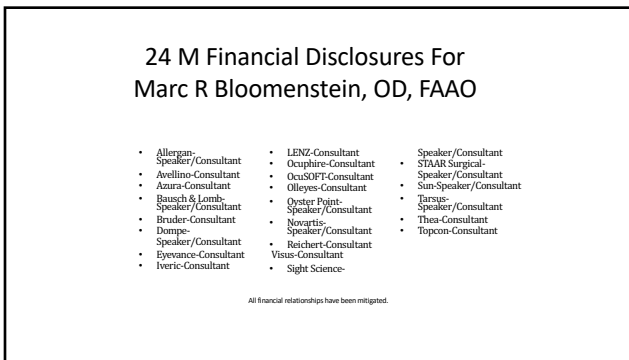


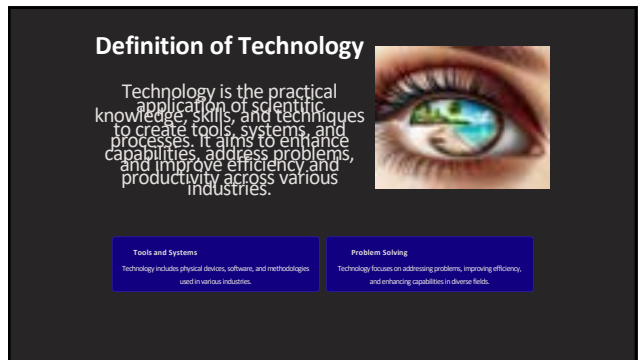
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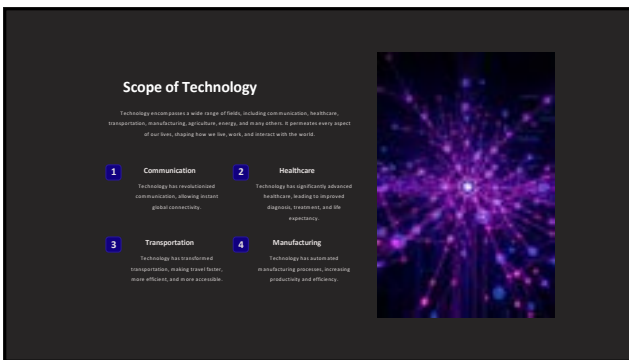
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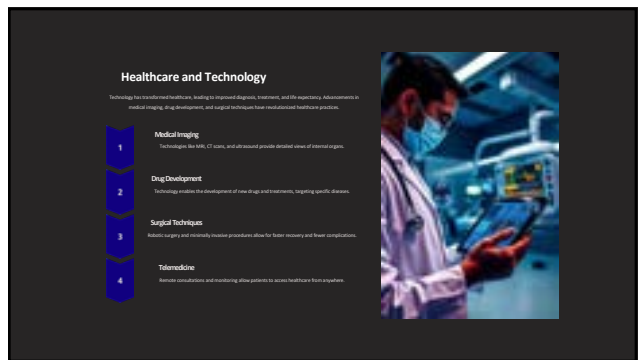
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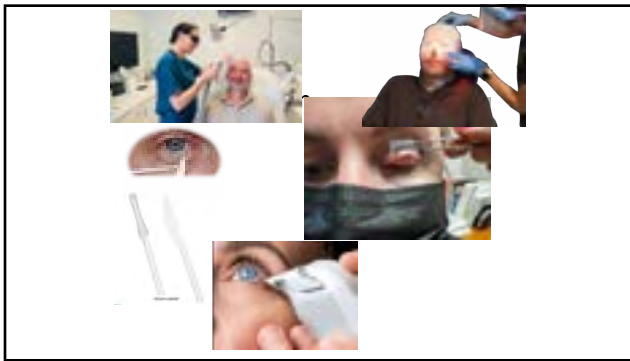


7

Realized Value of Photography

M. Radtke, OD

8



9

OCT-Optical Coherence Tomography

- Tomography: a technique for displaying a representation of a cross-section through a human body or other solid objects using X-ray or Ultrasound
- Topography: The distribution of parts or features on the surface or within an organ or organism.

M. Radtke, OD

10



11

Are you the eye doctor to your friends?

12

Mark Dunbar: Disclosure

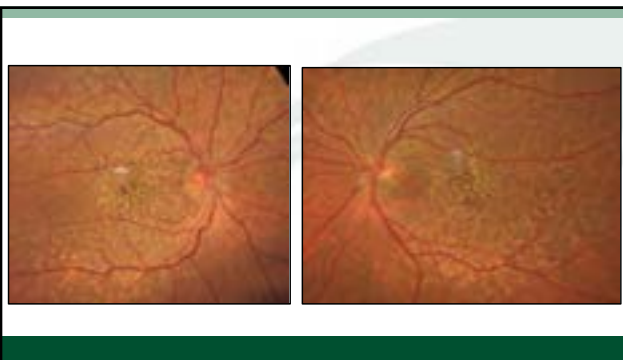
- Optometry Consultant/Advisory Board
 - Carl Zeiss
 - Tarsus
 - Orasis
 - Astella
 - Apellis
 - Azura
 - Sun
- - B&L
- - Topcon
- Visus
- Sydnexis
- Cloudbreak
- Tenpoint

13

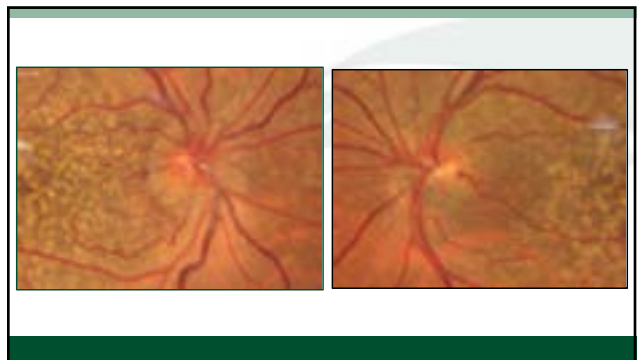
Sal: 62 yo Male (used to live down the street)

- Called me on Saturday with what sounded like a symptomatic PVD RE
 - Floater -> haze just superior in his central vision
 - We discussed the minutia of PVD
 - I can see you early this week
- Called me on Wed and wants to be seen - so I see him
- Va: RE: 20/20; LE 20/20
- CVF: FTFC
- Ta: 25/18

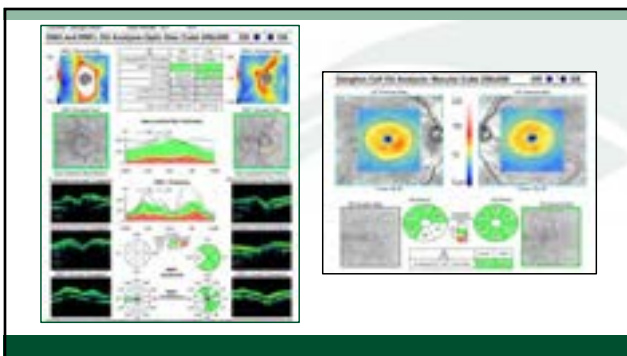
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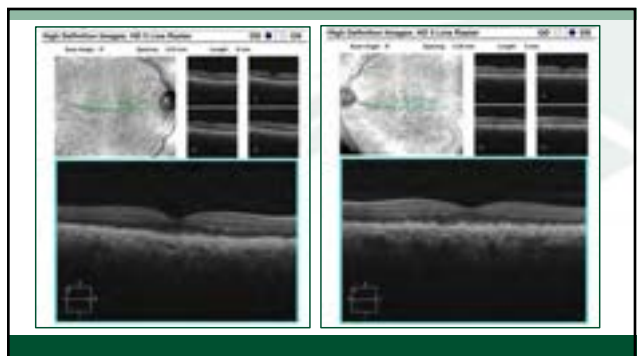
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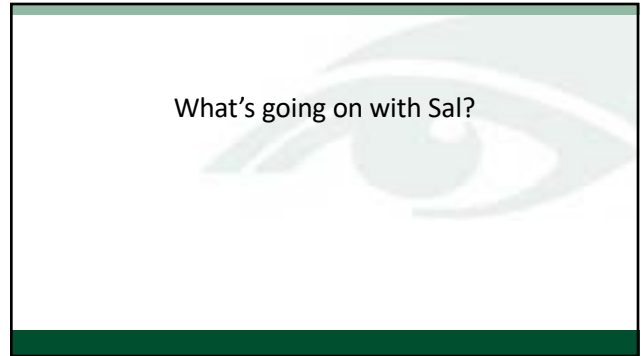
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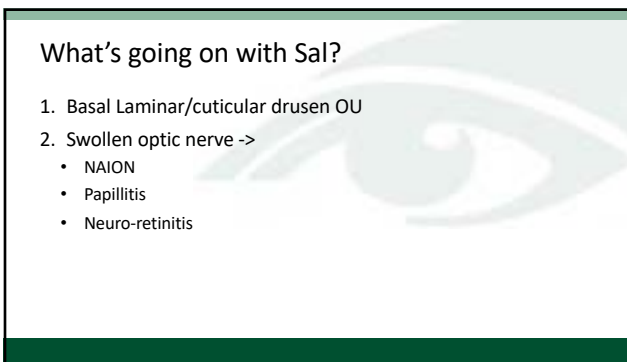
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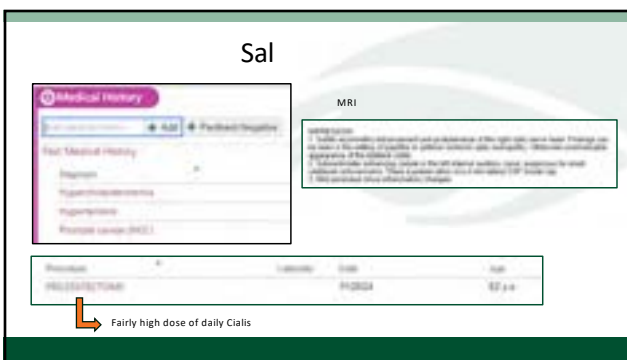
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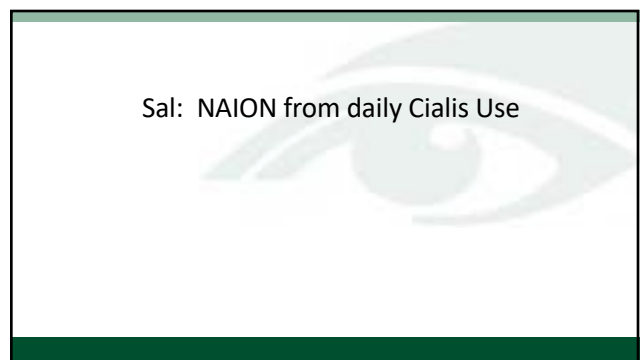
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24

ERECTILE DYSFUNCTION

- Viagra (sildenafil citrate)
- Cialis (tadalafil)
- Levitra (vardenafil)
- Staxyn (vardenafil HCl)
- Stendra (avanafil)



inhibits phosphodiesterase-5 (PDE-5) which results in vasodilation of smooth muscle.

Ocular Side Effects

- Objects have color tinges—usually blue or blue-green, may be pink or yellow
- 11% of patients on 100mg perceive a blue haze up to four hours
- Dark colors appear darker
- Visual disturbances
- **NAION**



25

ERECTILE DYSFUNCTION

- Ocular side effects are dose-dependent with all three drugs.
- For sildenafil side effects occur at the following incidences:
 - 50mg 3%
 - 100mg 10%
 - 200mg 40-50%
- The side effects based on dosage with sildenafil start 15-30 minutes after ingestion of the drug, and usually peak 60 minutes after ingestion.

26

Non-arteritic anterior ischaemic optic neuropathy and the treatment of erectile dysfunction

Strickland J¹, MB Ophthalmol, T A PhD, C Dinesh

- A retrospective matched case-control study was conducted. 38 cases of NAION in males and matched (on age) to 38 controls without a history of NAION
- Self reported information regarding past and current use of Viagra and/or Cialis was obtained via a telephone questionnaire from interviewers who were not blind to case status.

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Ophthalmology

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Can erectile dysfunction drug use lead to ischaemic optic neuropathy?

- All the men in these case reports also had the so called “disc at risk,” or small cup to disc ratio
 - typically noted in most individuals diagnosed with NAION
- Most of the men who developed NAION also had vascular risk factors such as hypertension, diabetes, or hyperlipidaemia
 - These vascular risk factors are frequently the same risk factors that lead to erectile dysfunction.
- Several of these patients had a history of prostate surgery or psychological factors that can lead to erectile dysfunction as well.

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ERECTILE DYSFUNCTION

- Patients who should **not take** phosphodiesterase type 5 inhibitors are **those who have previously suffered ischemic optic neuropathy (NAION)** in one eye or anyone who experiences transitory visual loss while on these medications.
- These patients may be more prone to developing NAION in the same or fellow eye if sildenafil or other medicines in this class are ingested.

29

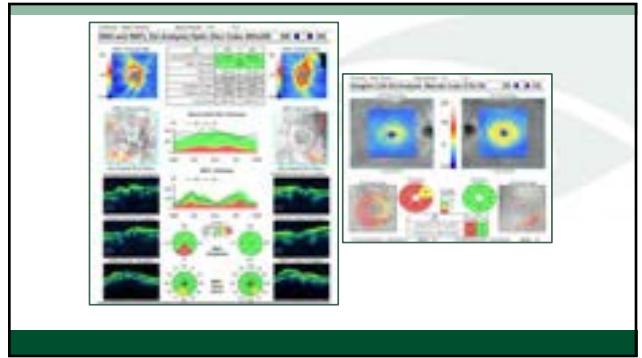
73 yo Male: Inferior **“crescent moon”** shaped spot RE for 3-5 weeks

- Started 2 months ago
- Intermittent
- 2 occurrences of cloudy vision but maintained light perception vision
- LE is perfect
- VA: 20/20 each eye
- CVF: FTFC OU
- No APD

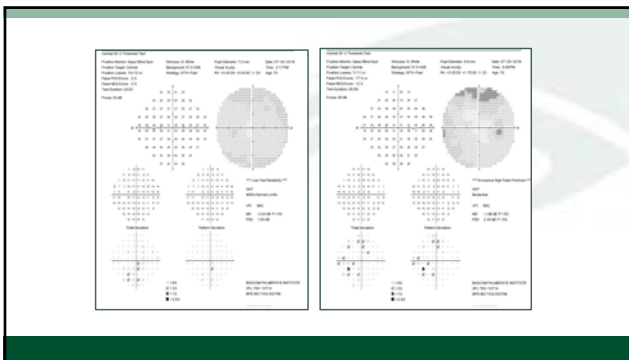
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32



33

Current Medications

Medication	Dose	Frequency	Response
Amoxicillin (AMOX) 500 MG TABS	500 mg	3x/day	2 (TWO) DAYS
Amoxicillin (AMOX) 500 MG TABS	500 mg	3x/day	2 (TWO) WEEKS
Amoxicillin (AMOX) 500 MG TABS	500 mg	3x/day	2 (TWO) WEEKS
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Amoxicillin (AMOX) 500 MG TABS	500 mg	3x/day	2 (TWO) WEEKS
Amoxicillin (AMOX) 500 MG TABS	500 mg	3x/day	2 (TWO) WEEKS

There is one that he is taking that he has not listed....

34

Cialis for daily use

35

Back to Sal and his BLD/Cuticular Drusen

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Basal Laminar Drusen (Cuticular Drusen)

- Type of familial drusen characterized by many clumps of tiny, extramacular drusen
- Originally thought to be distinct/separate from AMD – is now thought to be within the spectrum of AMD
 - Strongly associated with the Tyr402His variant of the CFH gene
 - Similarities with AMD in terms of their lipoprotein composition, ultrastructure, and sub-retinal pigment epithelium localization
- VA usually unaffected as long as drusen are outside the fovea

37

Sal: NAION RE

Recommendations

- Stop Cialis
- no BP meds at nighttime
- IOP wnl the next day – so no need for IOP control
- BP/BG control


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Considerations for Sal

- Will he actually stop using Cialis because of the risks?
- What is his risk of conversion of his AMD to wet?
 - Is the risk the same as traditional AMD?
 - Do you put him on an AREDS supplement?
- How often would you see Sal?


39

Vitritis... But why?



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Financial disclosures



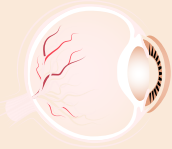
Lindsey Bull has received honorarium from:

- Allergan/Abbvie
- Viartis
- LENZ therapeutics

She is on the speaker bureau for Allergan/Abbvie and LENZ. She has been on advisory boards for Allergan/Abbvie and Viartis. All relevant relationships have been mitigated.

41

Vitritis... But why?






Chief complaint:
69YOM presents to office 2 months post cataract surgery with complaint that OS is mildly red and is sensitive to light

First thought?

- Rebound iritis
- Most commonly seen 6-12 weeks post surgery


42

Examination

 <p>History</p> <p>(+) uncomplicated KPE w/ IOL OU 2-2.5 months prior with base IOL</p> <p>(+) dropless-triamcinolone/moxifloxacin</p>	 <p>Findings</p> <p>UCVA: OD 20/25 OS 20/25</p> <p>IOP with goldmann: OD 20mmHg OS 27mmHg</p> <p>Ant. segment: 1+ cell in AC OS Trace conjunctival hyperemia</p> <p>All other findings WNL</p>	 <p>Plan</p> <p>Prescribed:</p> <ol style="list-style-type: none"> 1. Difluprednate 1gtt QID OS 2. Brimonidine 0.1% BID OS 3. RTC 1 week for recheck
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Dropless cataract surgery



Vitrilis... But why?

Vitrilis... But why?

Vitrilis... But why?

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Dropless cataract surgery



Vitrilis... But why?

Vitrilis... But why?

Vitrilis... But why?

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1 week follow-up

<p>History: Patient reports only using the difluprednate QD OS for the past 7 days. Did not use brimonidine.</p> <ul style="list-style-type: none"> • Findings OS: <ul style="list-style-type: none"> • UCVA: 20/25 • AC WNL • Hyperemia resolved • IOP 20mmHg with Goldmann 	<p>Plan</p> <ul style="list-style-type: none"> • Patient instructed to discontinue drops at this time. • RTC if eye becomes bothersome/worsens • Released at this time
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46

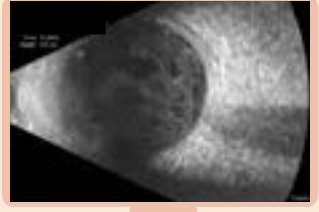
1 month later... emergency work-in

<p>History: Patient returns with complaint of severely reduced vision and pain OS.</p> <ul style="list-style-type: none"> • Findings OS: <ul style="list-style-type: none"> • UCVA: LP • IOP 10mmHg with Goldmann • AC: 4+ cell • Conjunctiva: 4+ hyperemia • Vitreous: 3-4+ cell with snowbanking • Hazy retinal views due to severity of vitreal inflammation 	<p>Thoughts?</p> <ul style="list-style-type: none"> • Do we think this is rebound inflammation? <ul style="list-style-type: none"> ◦ Typically anterior segment • Endophthalmitis? <ul style="list-style-type: none"> ◦ Most commonly first 6 weeks post surgery ◦ Typically first 1-2 weeks • Toxic anterior segment syndrome (TASS) <ul style="list-style-type: none"> ◦ Typically 12-48 hours post surgery • Infectious/inflammatory?
--	--

So now what?

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B- scan
(+) significant vitreal debris
(-) retinal detachment



Vitrilis... But why?

Vitrilis... But why?

Vitrilis... But why?

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Slit lamp video
(+) significant vitreal debris
Hazy view of posterior pole

Vitritis... But why?

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Now what?

When should we order bloodwork?

When we're just not certain!

1. Systemic condition vs ocular condition
2. To determine appropriate course of treatment

When it's "more than most"

1. Graded higher than mild
2. Bilateral
3. Not associated with trauma
4. Not associated with a known systemic disease
5. When there is posterior involvement

50

WHAT BLOODWORK ARE WE ORDERING?

Orders	What does it measure?
CBC with differentials	Overall health- infection, anemia, etc.
ESR	Inflammation- how fast RBCs settle at the bottom of a test tube
CRP	Inflammation- CRP = protein produced by liver that increases in the presence of inflammation
ANA	Antibodies produced by the immune system that attack the body's own cells
ACE	How much angiotensin converting enzyme is present- high in sarcoidosis
RF	Amount of rheumatoid factors in the body
HLA-B27	Protein found on white blood cells that help the immune system identify foreign substances- ankylosing spondylitis, IKA, reactive arthritis
Syphilis antibody screener	Presence of antibodies found in response to the bacteria that causes syphilis
Tick panel	Presence of antibodies found in response to the bacteria that cause tickborne disease

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BLOODWORK RESULTS

Test	Results	Reference range
CBC with differentials	Mildly high = WBC, RBC, hemoglobin, hematocrit	Different for each
ESR	22	(Age/2 for men, (Age + 10)/2 for women)
CRP	1.6 H	0.0-0.8
ANA	Positive, 1:160, speckled	< 1:80
ACE	42	14-82
RF	<15, negative 1.6 H	0-29
HLA-B27	Negative	Antigen- not detected in the blood
Syphilis antibody screener (VDRL)	Reactive	Has had syphilis at some point in the past
Nontreps Antibody (RPR)	1:256	< 1:8
Syphilis antibody index	25.54	Negative <1.0, weak positive 1.0-7.0, positive > 7.0
Tick panel (Lyme)	0.14, negative	0.0-0.89

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Intrepretation

CRP
1.6 (H)

- Why? Inflammation response within the body from actively fighting the infection

ANA
1:60

- Why? Intracellular infections like mycobacteria, syphilis and scrub typhus can cause positive results!

Syphilis antibody screener (VDRL)
Reactive

- Has had syphilis in the past but requires further testing to determine if infection is active. VDRL is a specific type of this screening test.

Nontreps antibody (RPR)
1:256

- If syphilis antibody screener is positive and RPR is positive- patient is confirmed as an active case of syphilis

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Diagnosis:

Syphilis with ocular involvement

Most common ocular manifestations:

1. Posterior uveitis
2. Panuveitis

Vitritis... But why?

54

WHAT IS SYPHILIS?

Treponema pallidum

- A spirochete 5-20 microns long
- 55,400+ people in the US diagnosed annually

Incubation period

4 weeks to 3 months

Humans are the host

- No animal reservoir
- Disease only spreads through human to human transmission

Ocular symptoms

Can present long after the manifestations of the initial infection have resolved

Vitreitis... But why?

55

So let's talk SYSTEMIC syphilis

Primary
10-90 days

- Chancere - (ulcerated, painless lesion)
- Lymphadenopathy

Secondary
6 weeks to 6 months

- Skin/mucous membrane lesion
- Fever
- Malaise
- Skin rash
- EYE**

Tertiary
10-30 years

- Cardiovascular
- Neurological
- Stroke
- Meningitis
- EYE**


LATENT: No clinical manifestations

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So let's talk OCULAR syphilis

Primary

- Chancere of the eyelid or conjunctiva



Secondary

- Uveitis
- Optic neuritis
- Chorioretinitis
- Dacryoadenitis
- Episcleritis
- Scleritis
- Monocular interstitial keratitis
- Dacryocystitis

Tertiary

- Optic atrophy
- Old chorioretinitis
- Chronic iritis
- Argyll Robertson pupil
- any signs from secondary disease

Many experts believe that any ocular involvement, especially retinal or optic nerve, should be considered as neurosyphilis and treated accordingly
- Wills Eye Manual

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IMMEDIATE PLAN AND MANAGEMENT

1. **Call PCP**
 - PCP out on Fridays, Rec'd sending to ER
 - Patient sent to ER with my cell number.
2. **Treat eye**
 - Diffuprednate q1-2h
 - Cycloplegic
3. **Systemic treatment**
 - Aqueous penicillin G 2-4 million units i.v. q4h for 10-14 days
 - Followed by benzathine penicillin 2.4 million units IMx3 for 3 weeks
 - Lumbar puncture
4. **Call health department**
 - Lab typically reports
 - Health dept. will have questions about diagnosis
5. **Follow-up**
 - PCP/infectious disease doctor to manage systemically
 - We continue to monitor ocular inflammation

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PROLONGED PLAN AND MANAGEMENT

01 EYE

- Continued follow-up until complete resolution of panuveitis

03 SYSTEMIC

- Neurosyphilis- repeat lumbar puncture every 6 months for 2 years
- CSF VDRL should decrease fourfold within 6-12 months

02 ADD ONS

- Testing for other STIs recommended
- HIV specifically due to frequency of co-infection

04 CONTINUED TESTING

- VDRL and RPR to be repeated at 3 and 6 months after treatment
- Retreatment necessary if:
 1. Titer > 18 or doesn't decrease fourfold
 2. If the titer increases fourfold
 3. Clinical signs/symptoms recur

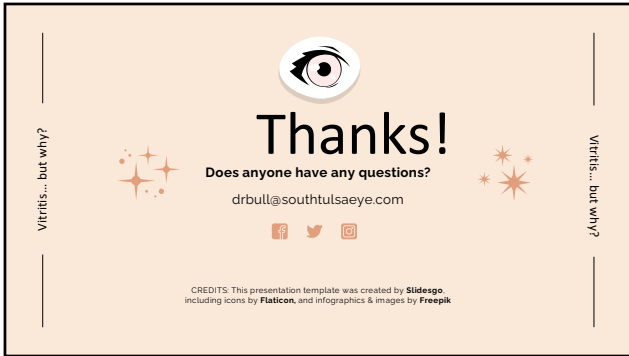
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So what about this patient?

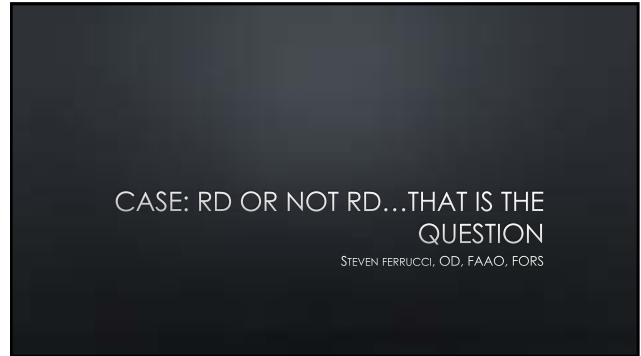
- Hospitalized for 10 days for i.v. treatment
- Continuing care with infectious disease specialist
- Returned to clinic 12 days post diagnosis
 - Uveitis significantly improved**
 - Vitreitis mildly improved**
- Continue topical steroids q2h until next appt**
 - Discontinue cycloplegic**
- Continue follow-up until intraocular inflammation WNL

Vitreitis... But why?

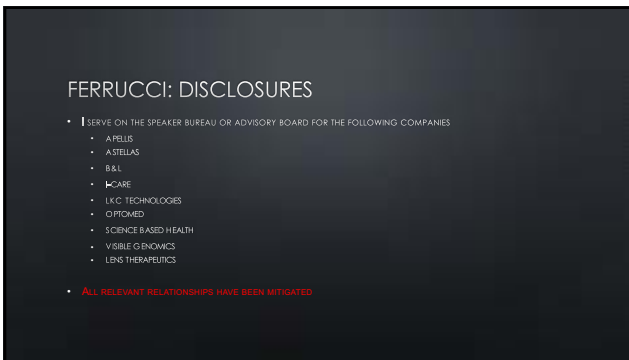
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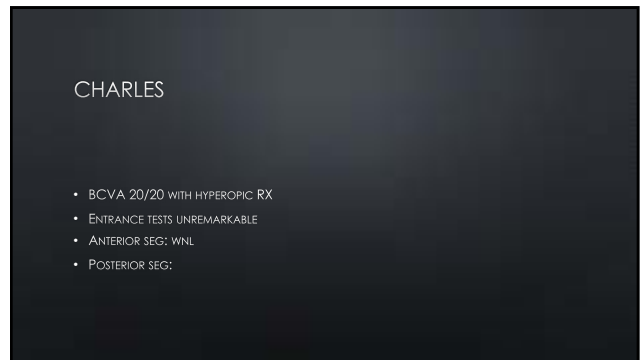
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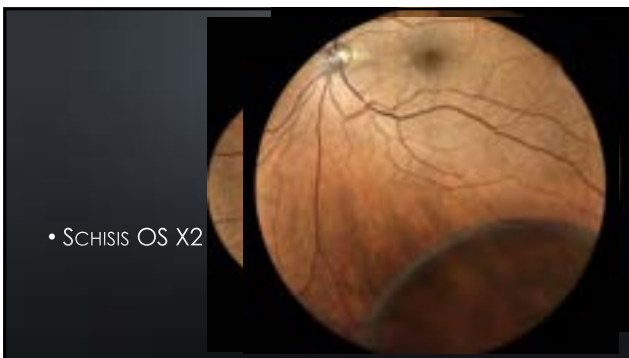
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65



66

CHARLES

- RETINOSCHISIS X 2 OS; 1 OD
- PT ED
- RTC 6 MOS
- BEEN FOLLOWING PT FOR 3 YEARS. NO CHANGE IN APPEARANCE

67

ETHEL

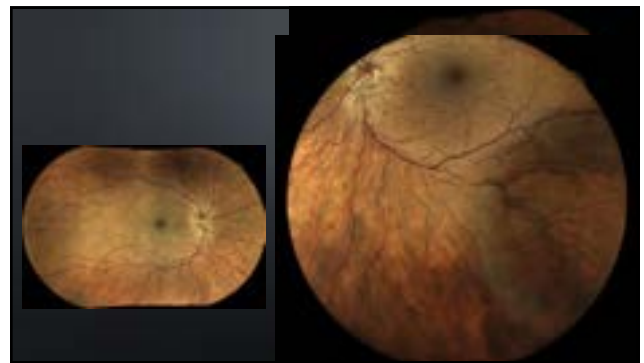
- 55 YO FEMALE
- HERE FOR ANNUAL DIABETIC CHECK
- H/O LASIK X 15 YEARS
- +DM X 23 YEARS, WELL CONTROLLED
 - INSULIN, LAST A1C 6.6

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ETHEL

- BCVA 20/20 OU
- ENTRANCE TESTS UNREMARKABLE
- ANTERIOR SEG
- POSTERIOR SEG: NO DR OU

69

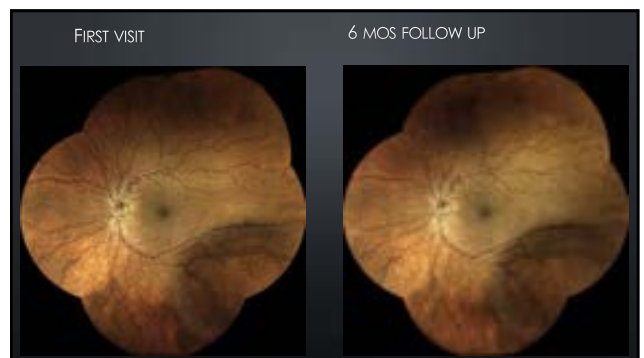


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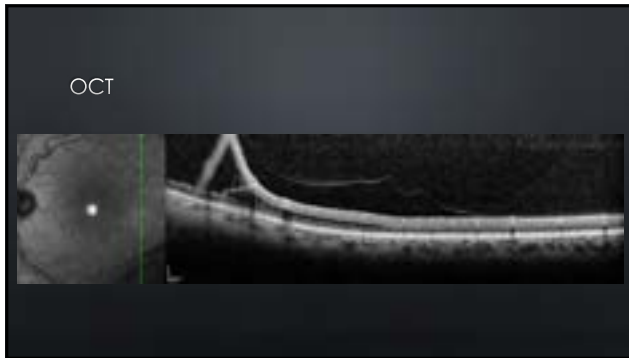
ETHEL

- SUSPECT RETINOSCHISIS INFERIOR OS VS RD
- SEND TO RETINA FOR SECOND OPINION
- MOST CONSISTENT WITH SCHISIS
- RTC 6 MOS

71



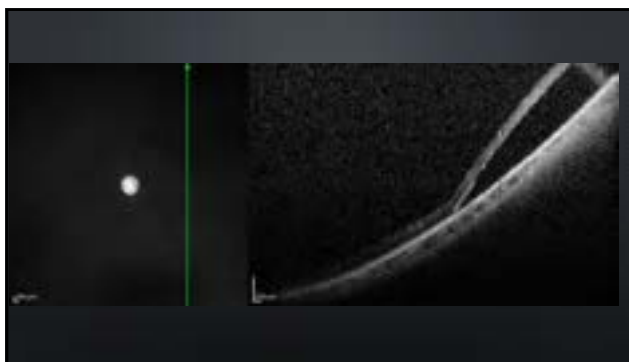
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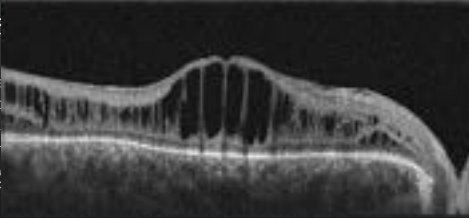
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RETINOSCHISIS

- DEFINED AS SPLITTING OF THE NEUROSENSORY RETINAL LAYERS
 - TYPICALLY IN OUTER PLEXIFORM LAYER
- VARIABILITY: LARGE, SMALL, BULLOUS, FLAT, BILATERAL, UNILATERAL, PROGRESSIVE, NON-PROGRESSIVE
- TWO MAJOR TYPES
 - ACQUIRED
 - X-LINKED (XLRs)

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XLRs



- RARE
- TYPIC
- HALL
- VA T
- SOM VISIC
- DURATION DEPENDS ON RESPONSE

77

ACQUIRED RETINOSCHISIS

- USUALLY BENIGN AND NON-PROGRESSIVE
 - MYOPIC PTS TEND TO BE MORE PROGRESSIVE THAN HYPEROPIC PTS
- ASYMPTOMATIC, FOUND ON ROUTINE DFE, BUT MAY CAUSE VF DEFECT
- INCIDENCE:
 - 3.9% IN PTS 60-80
- MOST COMMONLY AFFECTS INFEROTEMPORAL RETINA
- BILATERAL 33-82% OF TIME

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SCHISIS VS RD

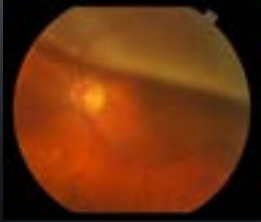
- SCHISIS:
 - MORE TRANSLUCENT WITH VISIBLE VASCULATURE
 - LESS FLEXIBLE
 - WELL DEMARCATED BORDERS
 - OVERALL SMOOTHER APPEARANCE
 - SHOULD HAVE ABSOLUTE VF DEFECT VS RELATIVE WITH RD
- B SCAN/OCT CAN BE HELPFUL
 - OCT OFTEN DIFFICULT TO IMAGE DUE TO LOCATION

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SCHISIS



RD



80

SCHISIS



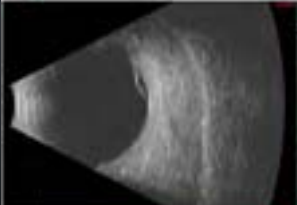
OCT: SCHISIS VS RD

RD

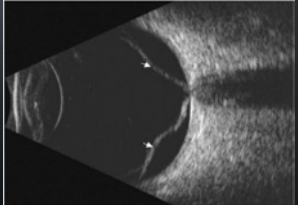


81

SCHISIS



RD



82

RETINOSCHISIS

- CAN HAVE OUTER OR INNER WALL BREAKS
 - OUTER:
 - LARGER, OFTEN HAVE RING OF PIGMENT
 - 11-24% OF TIME
 - INNER:
 - SMALLER
 - LOOK LIKE ATROPHIC HOLES
- EITHER ASSOCIATED WITH INCREASED RISK FOR DETACHMENT, SO RETINAL CONSULTATION ADVISED
- INNER AND OUTER TOGETHER: VERY DANGEROUS
- IF NO HOLES, GENERALLY BENIGN AND CAN BE MONITORED

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RETINOSCHISIS

- VERY RARE TO HAVE DETACHMENT INTO MACULA AREA
- PROPHYLACTIC LASER TREATMENT HAS NOT BEEN SHOWN EFFECTIVE IN MOST STUDIES TO HALT PROGRESSION
- CATARACT SURGERY AND PVD DO NOT SEEM TO HAVE ADVERSE EFFECT
- IF PROGRESSES TO DETACHMENT, RETINAL SURGERY INDICATED
 - ONLY ABOUT 0.05% TO 2.2% OF CASES
 - TYPICALLY RESPOND POORLY TO SURGERY
- MOST ARE BENIGN AND CAN BE MONITORED YEARLY UNLESS HOLES, ENLARGEMENT, OR SYMPTOMS

84

JESSICA STEEN OD FINANCIAL DISCLOSURES

- Speakers Bureau-Carl Zeiss Meditec, Bausch and Lomb, Viatris, Thea Pharma, Alcon, Allergan, Astellas, Dompé
- Consultant-Bausch and Lomb, Balance Ophthalmics, Carl Zeiss Meditec, Opus Genetics, Viatris, Allergan, Astellas, Alcon, Radius XR, iCare, Glaukos, Eyenovia, Tarsus, Orasis
- Shareholder-Clearside Biomedical (<0.01% ownership)
- All relevant relationships have been mitigated

85

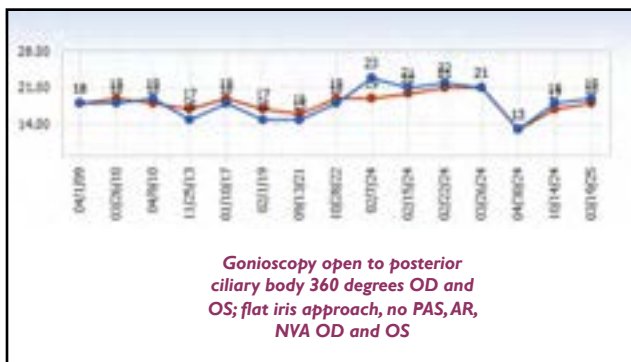
74-year-old Black female

Scheduled follow up for bilateral open angle with borderline findings

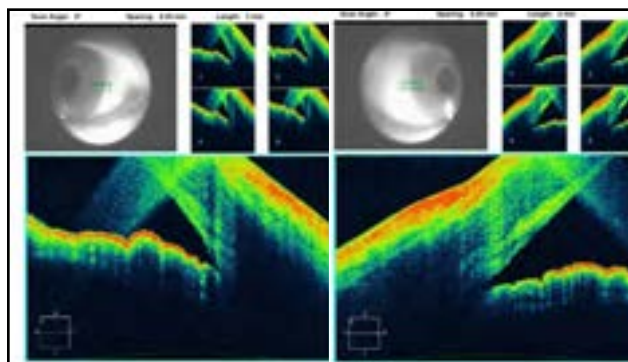
History of hypertension, hypercholesterolemia, primary hypothyroidism, osteoporosis

BCVA 20/20 OD and OS

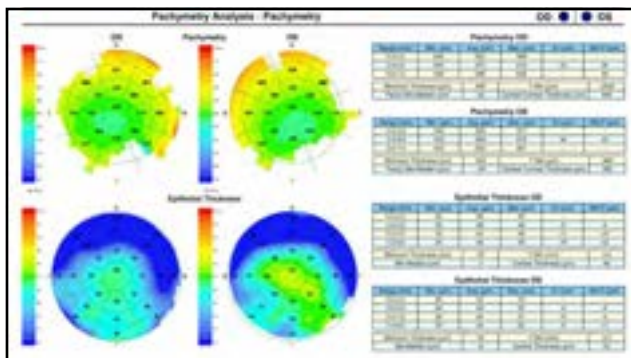
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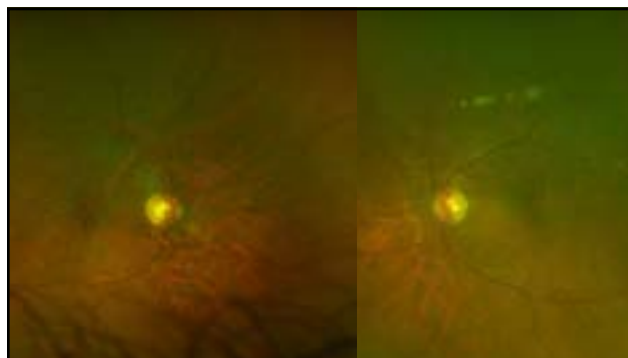
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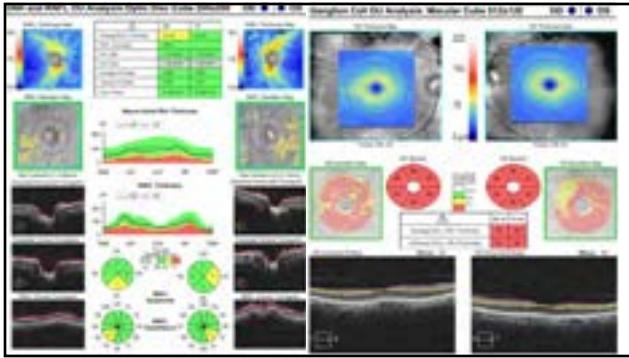
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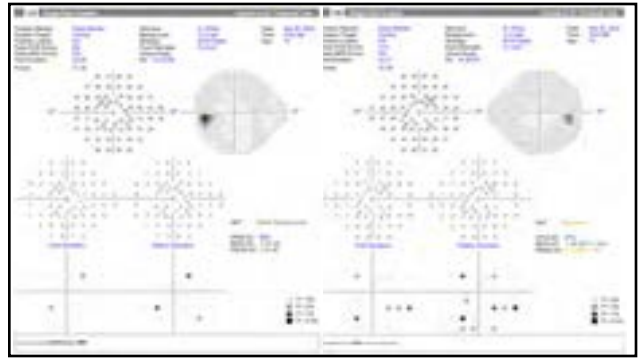
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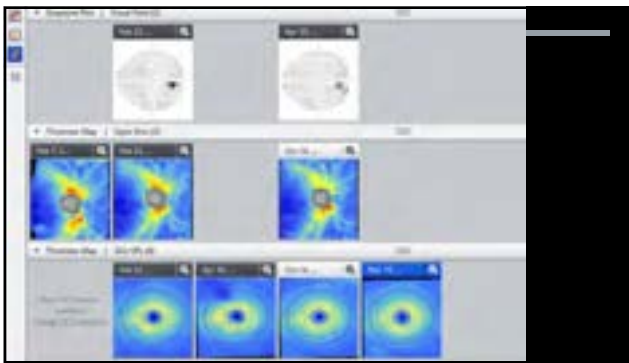
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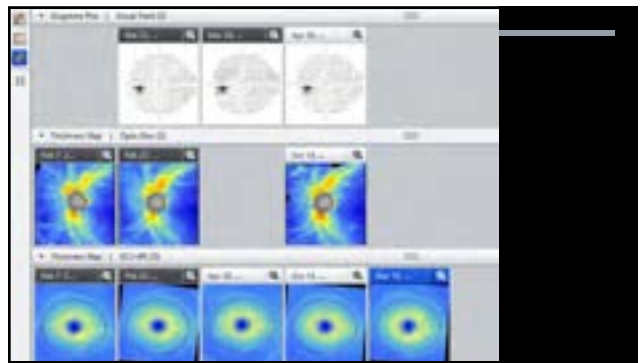
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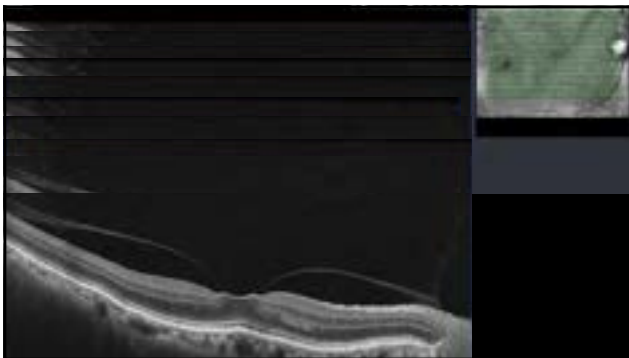
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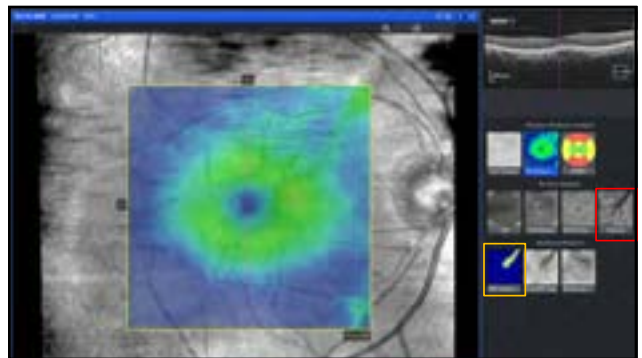
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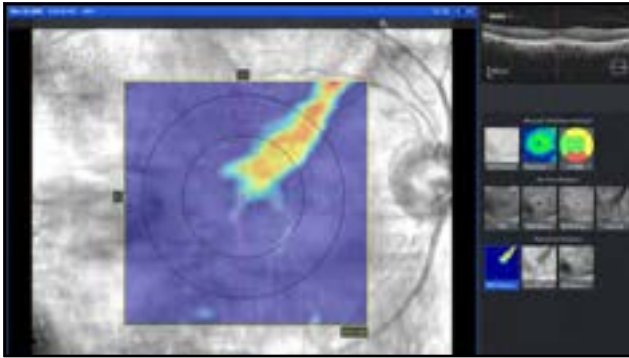
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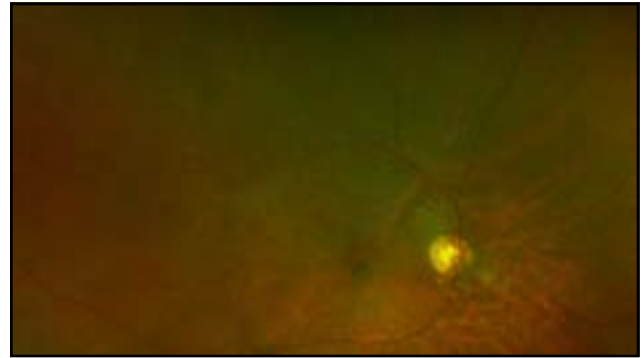
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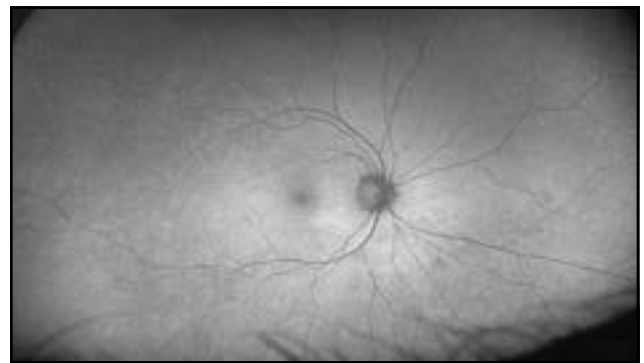
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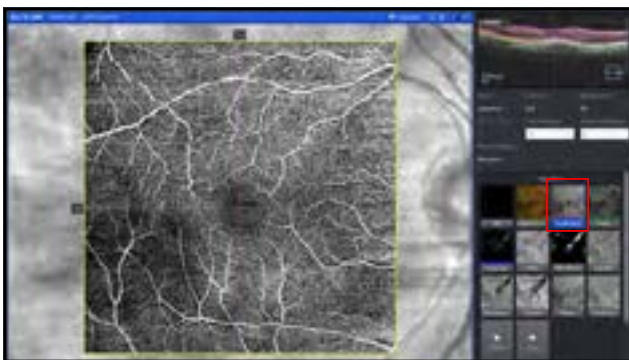
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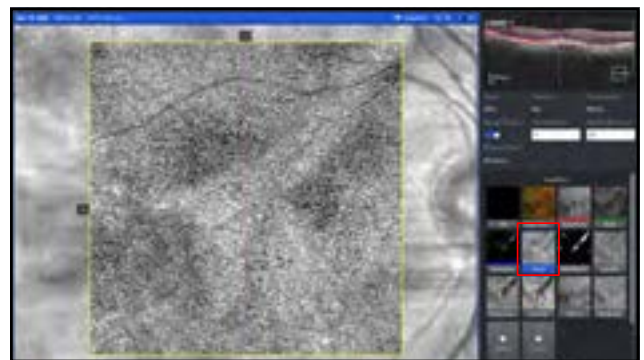
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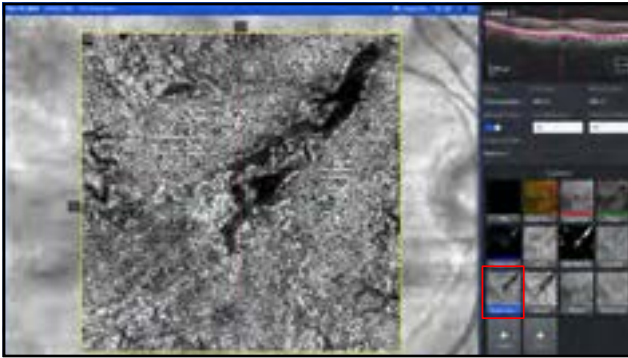
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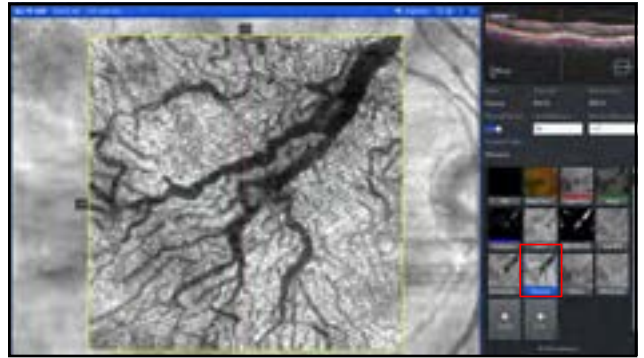
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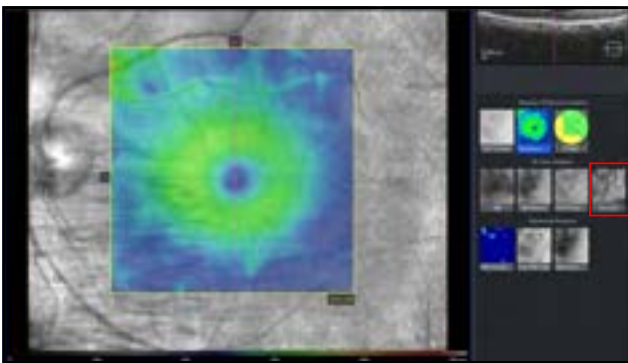
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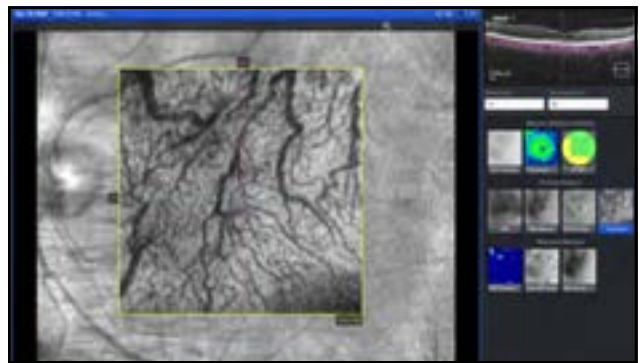
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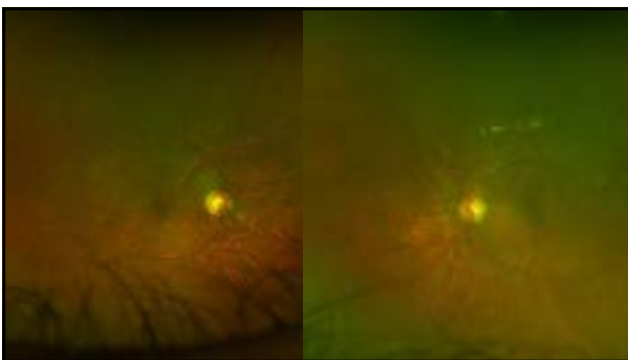
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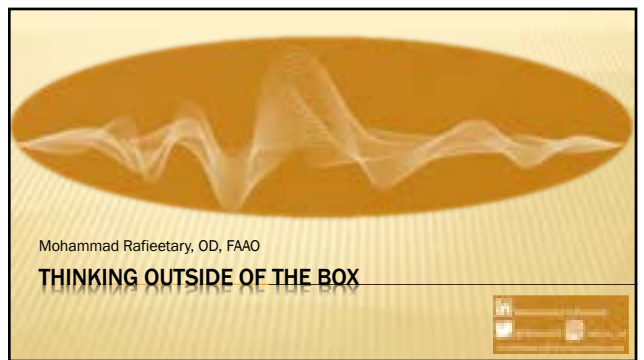
105



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DISCLOSURE

- ✦ Apellis Pharmaceutical
- ✦ Astellas Pharmaceuticals
- ✦ Genentech
- ✦ Regeneron
- ✦ Optos
- ✦ Heidelberg
- ✦ Orasis
- ✦ Visible Genomics
- ✦ Virtual Field
 - + Potential conflicts have been mitigated

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IN MAKING CLINICAL DECISIONS, DX AND PLAN

- ✦ Proper physical exam
- ✦ Appropriate testing
- ✦ Continuity of care
 - + Clinical course can unfold the story and solve some of the puzzle

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76 Y/O WE ASYMPOTIMATIC

- ✦ Was initially referred for “surface wrinkling” OS (Epiretinal or Epimacular Membrane “ERM/EMM”)
 - + Cataract Surgery with PCIOL 2011
 - + MHX: Gout, Arthritis, HTN, Thyroid Disease, Anemia, CVA X2 Migraine HAS
 - + 20/20 VA OD/OS
 - + IOP OD 21 OS 17

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Fundus Exam: Normal Disc
 Few Macular Drusen. Scattered Drusenoid Lesions.
 OS: Subtle choroidal folds.

FAF

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2014 OCT

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DX/PLAN

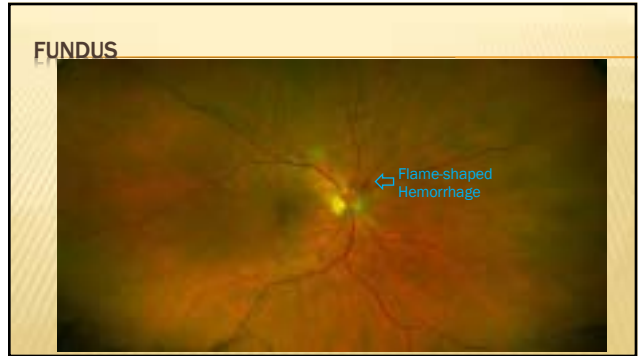
- ✦ Choroidal Folds no associated findings including normal CT of orbit
- ✦ Remained stable nearly 4 years
- ✦ Returns with recent loss
- ✦ VA reduced to 20/70 OS

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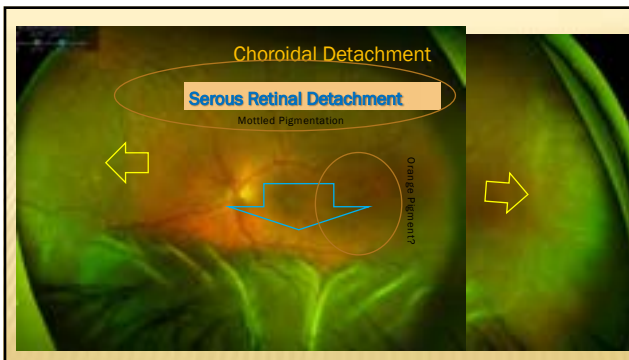
9 MONTHS LATER

- ✗ C/O gradual blurring vision since last visit thinks both eyes but OS worse, no ocular or periocular pain
- ✗ VA OD 20/20 OS 20/70
- ✗ IOP 16/16

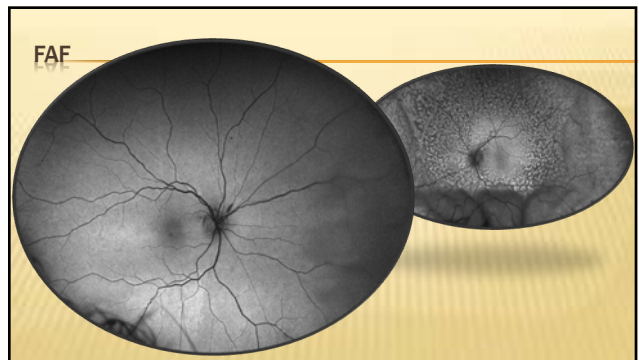
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116



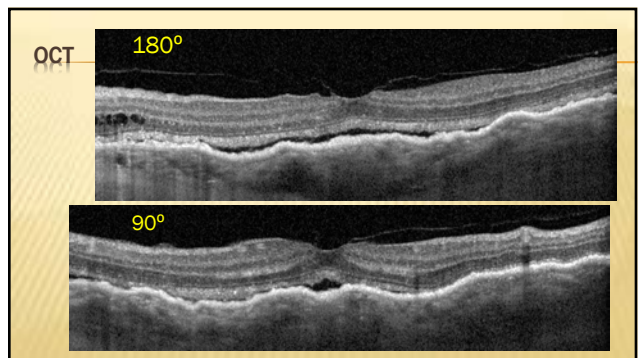
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DX/TX

- ✦ Etiology (of choroidal and serous RD)
 - + Inflammatory/Infectious
 - ✦ Uveitis Work-up
 - + Mechanical
 - ✦ Trauma, Iatrogenic
 - + Neoplasm (Including Orbital Mass Still Possibility)
 - ✦ MRI with and without Contrast Ordered

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MRI

Compare the Scleral Thickness OD vs OS

122

VISIT AFTER MRI 20/70 IOP 17

123

These Findings Lead to Diagnosis of Uveal Effusion Syndrome

Abnormally Thick Sclera

Choroidal Detachment

Serous RD

Unusual Pigmentation

Leopard Spots

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UVEAL EFFUSION SYNDROME

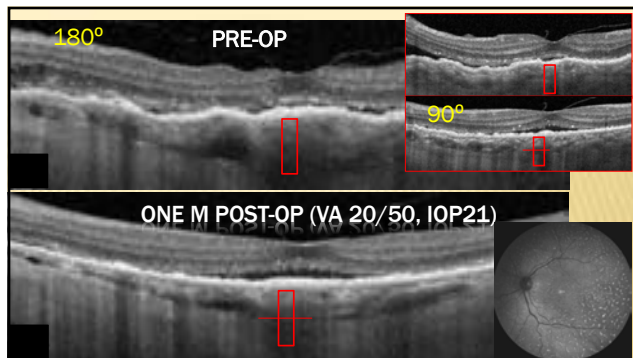
- ✦ Rare Syndrome No specific risk factors, usually otherwise healthy adult
- ✦ Classification
 - + Type 1-Nanophthalmic Eyes (Usually High Hyperopic)
 - + Type 2-Normal Axial Length, Clinically Abnormal Sclera
 - + Type 3-Normal Axial Length, Clinically Normal Sclera
- ✦ Congenital Scleral Abnormality

125

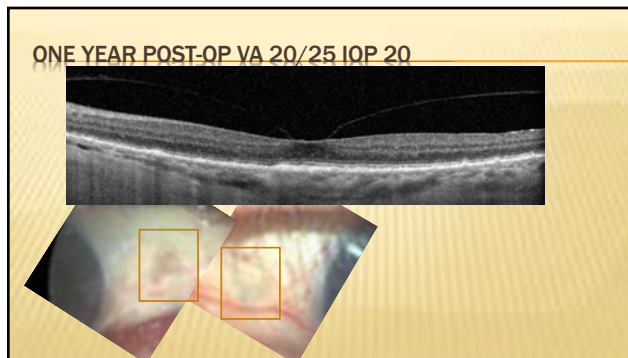
FINDINGS

- ✦ Blurred or Loss of Vision
- ✦ Normal to Elevated IOP
- ✦ Detachment of Choroid and Ciliary Body
- ✦ Serous RD (Not RRD)
- ✦ No or Minimal Inflammatory Findings
- ✦ Localized areas of RPE hypertrophy or Hyperplasia "Leopard Spots"
- ✦ Treatment, Sclerectomy or Scleral Window

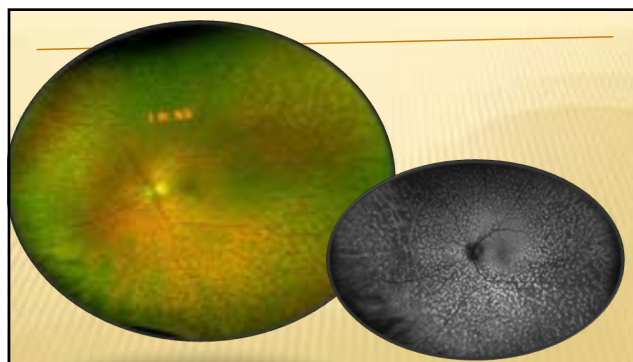
126



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A CLINICALLY CHALLENGING CASE

- ✦ Demystified and Managed Aided By Combination of Diagnostic Imaging Tools Including Outside Imaging (MRI)
- ✦ Thank you

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Financial Disclosures
Pamela Theriot is on the Speaker or Consultant for the following companies:

Speaker/Bureau:	KOI/Consultant:
RVL Pharmaceuticals	Novartis
Viatris Pharmaceuticals	Merakris Therapeutics
Johnson & Johnson Vision	Scope Eyecare
Sun Pharma	NuLids
Lumenis Be	Tear Film and Ocular Surface Society, Public Awareness Committee Member
Tarsus Pharmaceuticals	Twenty/Twenty Beauty
Dompe	NovaBay
Alcon	Mallinckrodt Pharmaceuticals
Lenz Therapeutics	Bruder Healthcare Company
	EyeDerm

*All relevant financial relationships have been mitigated. The content of this COPE-accredited CE activity was planned and prepared independently by Pamela Theriot, OD, FAAO without input from members of an ineligible company.

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Pam Theriot, OD, FAAO




- Lusk Eye Specialists
 - Clinical Director of Dry Eye Relief Center
- TFOS Lifestyle Workshop:
 - Public Awareness committee Member
- TEDx Grandview Heights - January 2025
- Living in a Screen-filled World - 3 Tips to Preserve your Vision
- 2025 Dry Eye Columnist
 - Optometric Management
- Author
 - Alleviate Dry Eye
- Website / Blog / Courses
 - www.pamtheriot.com

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AH 46yo CF referred for glaucoma eval


- Office Manager at chiropractor's office
- High myope wearing Soft CLs 16 hr/day, 7 days/week
- Red, itchy, watery OU, unable to wear CLs
- Rx Steroid BID from OD for GPC
- Glaucoma Suspect Hx of High IOP
- Signs: 2+ GPC, 2+ LG Stain, 2+ MGD, 2+ telangiectasia, 1-2+ SPK inferior
- IOP: 23 / 21
- Pachymetry: 612 / 587
- C/D ratio: 0.30 OU



2/13/26 Sample Footer Text 133

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Thanks to portable technology:



2/13/26 134

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Meibography



Sample Footer Text 135

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Initial Treatment Plan - Allergic Conjunctivitis



- D/C Coconut Oil based Makeup Remover
- Start Oil Free Makeup Remover
- D/C CL Wear
- D/C topical Steroid BID
- Add OTC topical Antihistamine
- In office Irrigating Lid Retractor
- In office Micro Blepharo-Exfoliation

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At Home Care



- OTC Anti-histamine
- Lid and Lash Cleanser
- Cool Compress
- Study showed increased symptom relief with 5 min of cool compress with topical antihistamine use.

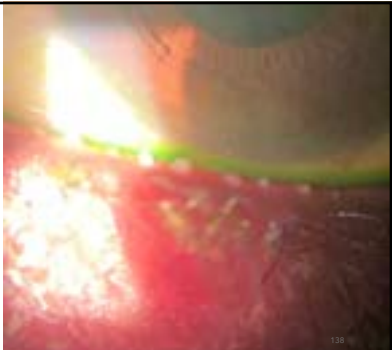
• Bilkhu PS, Wolffsohn JS, Naroo SA, Robertson L, Kennedy R. Effectiveness of nonpharmacologic treatments for acute seasonal allergic conjunctivitis. *Ophthalmology*. 2014 Jan;121(1):72-78. doi:10.1016/j.ophtha.2013.08.007. Epub 2013 Sep 23. PMID: 24070810.

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OSD Work-UP

Pt not wearing CLs
Wears makeup / only at work
SPEED: 18
Schirmer's 4 / 7
1+ papillae
2+ LG Stain
Trace SPK
Low Tear Lake + Makeup debris
2+ Telangiectasia
3+ Meibum
No Collarettes



20XX 136

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Treatment Plan

- Continue Oil Free Makeup Remover
- Continue no CL Wear
- Discuss Clean Makeup options
- Start Rx NeuroStimulator BID
- Schedule IPL treatment for Rosacea and MGD at next visit



Sample Footer Text 139

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TFOS DEWS III Definition

- Shared Patient Goals:**
 - Brighter, whiter, more youthful-looking eyes
 - Relief of redness, irritation, and tearing
 - Smoother periocular skin
- Treating OSD not only reduces redness and irritation. The side benefits include:
 - Increased confidence
 - Improved appearance
 - Better quality of life
- Patients feel better & look better, too.


Dry eye is a multifactorial, symptomatic disease characterized by a loss of homeostasis of the tear film and/or ocular surface, in which tear film instability and hyperosmolarity, ocular surface inflammation and damage, and neurosensory abnormalities are etiological factors.

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#1 Cosmetic Concern of Your Patients: Redness

- Causes:**
 - Inflammation - DED
 - Allergy - Coconut Oil
 - Irritation - CL over wear
 - Toxicity - Makeup
 - Rosacea - facial and ocular
 - Bio Film: Demodex & Bacteria



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Labels are Misleading



- Hypoallergenic
- Vegan
- All Natural
- Ophthalmologist Approved
- Organic
- Green
- Chemical-free
- No Animal Testing
- Gluten Free
- Cruelty Free


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Toxicity of cosmetic preservatives on human ocular surface and adnexal cells

Chen X, Sullivan DA, Sullivan AG, Kim WR, Liu Y. Toxicity of cosmetic preservatives on human ocular surface and adnexal cells. *Experimental Eye Research*, Volume 170, 2018, Pages 188-197.

- Women use over 12 personal care products daily, and men use an average of 6
- Benzalkonium chloride (BAK) and formaldehyde (FA)-releasing are commonly used as preservatives
- These preservatives, at concentrations much lower than are approved for consumer use, are toxic to human ocular surface and adnexal cells



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TFOS Lifestyle Workshop TOXIC INGREDIENTS

- Acetyl hexanoyl chloride
- Acrylates
- 2-Bromo-2-nitropropane-1,3-diol
- Benzalkonium Chloride
- Benzophenone
- Bis(4-hydroxyphenyl)propane
- Bis(4-hydroxyphenyl)propane
- Bisphenol glycol
- CapHorn
- Carbon black (B&C Black No. 3)
- Carmoisine salt
- Castor oil
- Chlorhexidine digluconate
- Chlorpheniramine
- Cocamide diethanolamine
- Cocamidopropyl betaine
- Cyclopentasiloxane
- Igylamethiuronel
- Cysteamine
- Dihydroxyacetic acid
- Diamond dust/abrasive
- Diphenylpicrylhydrazyl
- Dioctylphthalate
- DNMGM hydantoin (2,3-Bis (hydroxy-methyl)-6,5-dimethylimidazolidine-2,4-dione)
- Ethanolamine
- Ethylhexylglycerin
- Ferulic acid
- Formaldehyde-releasing compounds
- Gold
- Glycolic acid
- Imidazolidinyl urea
- Isopropyl alcohol
- KOH (and containing)
- Lauryl acid
- Lead

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TFOS Lifestyle Workshop TOXIC INGREDIENTS

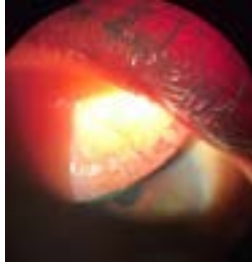
- Methylisothiazolinone
- Methylanthiazolinone
- Nylon
- Paraben (for example, ethylparaben & methylparaben)
- Paraphenylenediamine
- Per- and poly-fluoroalkyl substances
- Petrolatum
- Phenoxyethanol
- Phenylethyl resorcinol
- Phthalate
- Polyethylene glycol
- Polymethyl methacrylate
- Prostaglandin analogues (for example, bimatoprost or travoprost)
- Quaternium-15
- Retinoids (Vitamin A derivatives), such as 13-13 retinoin acid, tretinoin
- Salicylic acid
- Shellic
- Squalene
- Sodium benzoate
- Sodium hydroxy-methylglycinate
- Sodium lauryl sulfate
- Sorbic acid
- Talc
- Tea tree oil and terpinen-4-ol
- Thiomercal
- Triclosan
- Triethanolamine

Sullivan DA, da Costa AX, Del Duca E, Doll T, Grupcheva CN, Lazreg S, Liu SH, McGee SR, Murthy R, Narang P, Ng A, Nislico S, O'Dell L, Ross J, Shen J, Markouli M. TFOS Lifestyle: Impact of cosmetics on the ocular surface. Ocul Surf. 2023 Jul;25:77-130. doi: 10.1016/j.oufs.2023.04.005. Epub 2023 Apr 13.

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Makeup Rules for Best Ocular Health


- Always remove makeup nightly
- No water-proof makeup
- No glitter in your eye shadow
- Avoid powdered eye shadow
- Apply primer to lids before shadow and liner
- Pencil eye liners are best
- No water-lining or tight-lining
- Avoid toxic and irritating ingredients
- Toss out your makeup on time
- Never share your eye makeup
- Never Moisten cosmetics with saliva
- Never alter your makeup with heat
- Never apply makeup on the go
- Never put a product not intended for the eye on the eye



146


The Most Important Step in Any Beauty Routine

- 5 Types of Makeup Removers
 - Micellar Water
 - Oil-Free Makeup Remover
 - Oil-based Makeup Remover
 - Makeup Remover Wipes
 - Makeup Remover Cloths



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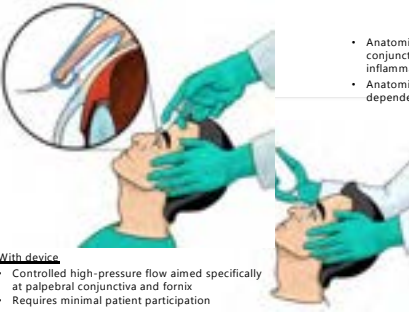
Biofilms extend past the lid margin into the palpebral conjunctiva and fornix. Treat with high powered lavage of sterile saline or BSS.



Glands of the Human Ocular Surface

© Eye Exam & Note Book - Eye Ocular Surface Care Book ©2008 Berman.org

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- Anatomically unable to reach palpebral conjunctiva and fornix, which traps inflammatory load
- Anatomic limitations and patient cooperation dependent

With device

- Controlled high-pressure flow aimed specifically at palpebral conjunctiva and fornix
- Requires minimal patient participation

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Micro Blepharo Exfoliation



- In Office treatment
- Out of Pocket procedure
- 2-4 minutes to complete, technician can do
- disposable tip made of a soft silicone
- Remove biofilm and scurf that may be occluding the meibomian glands' openings
- Contact lens wearers feel better
- At home version for patients to use

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IPL: Intense Pulsed Light



- April 2021 FDA approved for treatment of Dry Eye Disease
- Treating signs of dry eye disease due to meibomian gland dysfunction and rosacea
- Several mechanisms of action:
 - Reduces inflammatory mediators
 - Closes abnormal blood vessels
 - Kills Microorganisms including Demodex
 - Melts meibum / eases manual expression

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Conclusions

- Ocular irritants can hide in "Organic" or "All Natural" products
- Eliminate toxins
- Look for root cause of symptoms
- Underlying sources of inflammation like rosacea can reduce contact lens tolerance
- Patient was able to return to CL wear
- Any Questions:
- [Pam@gamtheric.com](mailto: Pam@gamtheric.com)
- THANK YOU



2/13/26

Sample Footer Text

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Which Case Met the Challenge?

- Thank you for attending
 - Visit the Exhibit Hall
 - Invest in Technology....

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