CASE FILES FROM BASCOM PALMER

Mark T. Dunbar OD, FAAO

1

Mark Dunbar: Disclosure 2025-2026

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

2



Bascom Headon Palmer, M.D. (1889-1954)

- 1923 – Arrives in Miami to open his ophthalmology practice and serve as chief of the Ophthalmology-ENT Department at Jackson Memorial Hospital
- 1946 - Starts working to establish a UM medical school hoping to include an eye clinic second to none in the nation
- 1952 - UM medical school opens
- 1954 - Dr. Palmer dies before a new eye institute is opened



Bascom Palmer EYE INSTITUTE

3





1961
With support of Miami Lighthouse for the Blind, Norton breaks ground for a new eye institute on March 26.

1958 Dr. Edward W.D. Norton recruited from Boston to start an Ophthalmology program as part of the University of Miami

4





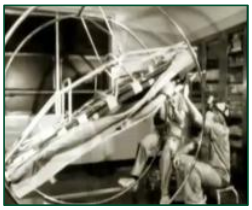
1976
The 220,000-square foot Anne Bates Leach Eye Hospital opens its doors. At the dedication ceremony, the Institute's former home becomes the William L. McKnight Vision Research Center.

5



1966
J. Donald M. Gass M.D. - Pioneered the use of intravenous fluorescein angiography for the diagnosis of retinal disease
Regarded as one of the top retinal specialists of the 20th Century

6

April 20, 1970
Dr. Robert Machemer performed the worlds 1st Pars Plana Vitrectomy on a Miami Patient – an achievement that has earned him the title "father of modern retinal surgery"

7




1976
Douglas R. Anderson, M.D. – Discovered that elevated IOP impairs axonal transport in the optic nerve in glaucoma

1984
Richard K. Parrish II, M.D. - Introduced the drug 5-Fluorouracil (5-FU) to prevent the growth of scar tissue following glaucoma filtering surgery (trabeculectomy).

8



Coins the term "Target Pressure"

1989
Paul F. Palmberg, M.D., Ph.D., coins the term "target pressure" in the American Academy of Ophthalmology's Guide to Glaucoma treatment to halt or slow glaucoma.

9



10

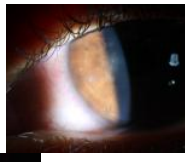
Wednesday 11/16/22

HPI 22 yo Hispanic Female
Urgent visit exam
Contact Lens Wearer

Cc: Patient started experiencing discomfort on Sunday night after practice in OS. Very sensitive to the light. +pain OS, +itching OS, +burning OS, +tearing OS, -flashes, -floaters

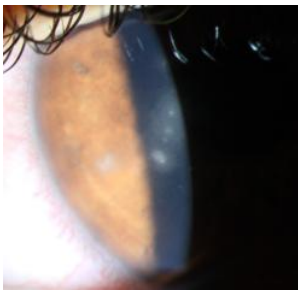
Ocular drops:
Polysporin OS
AT 0/3

VA: RE 20/20 LE 20/20

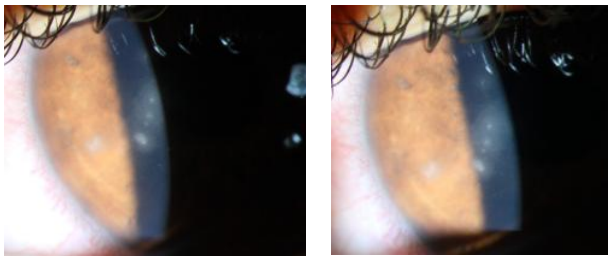




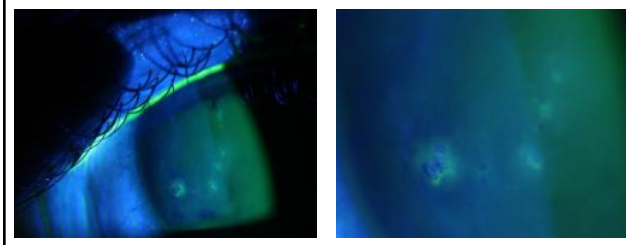
11

12



13



14

Progress Notes

Assessment

1) Atypical corneal infiltrates associated with contact lens wear
   - Linear pattern
   - Started Sun night (3 days ago) - minimal improvement
   - On polytrim for 1 day (started by trainers)
   - No follicles or PA node

Plan

1) Photos done today
2) To ED on medical campus to triage

21y contact lens wearing woman presents for left eye pain that started Sunday after rubbing her eye during cheerleading practice. Initially thought it might be pink eye causing irritation but then would not improve and went to eye doctor who referred her here and started polytrim.

* **Small corneal ulcers vs healing epithelial defects**
-Appearance may be that of acanthamoeba, healing epi defects slightly less likely given eye still injected and painful
- Vigamox q1h
-slit lamp photos taken
- Cultured for KOH, acanthamoeba, chocolate, sabaourad
- Preservative-free artificial tears PRN comfort
- Strict return precautions for worsening pain, decreased vision, change in appearance of eye, or other concerning symptoms

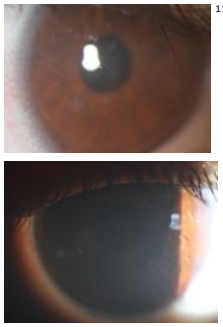
15

CULTURE, CORNEA BACTERIAL W/GS (ABLEH ONLY)
Specimen Information: Cornea
Component
Special Requests
LEFT EYE
Gram Stain Result
FEW WBC'S SEEN
Gram Stain Result
RARE EPITHELIAL CELLS SEEN
Gram Stain Result
NO ORGANISMS SEEN
Culture
NO GROWTH 7 DAYS

CULTURE,FUNGUS (ABLEH ONLY)
Specimen Information: Cornea
Component
Special Requests
LEFT EYE
Culture
NO YEAST OR FUNGI ISOLATED AFTER 14 DAYS

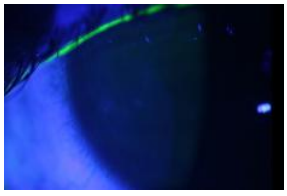
CULTURE, CORNEA ACANTHAMOEBA (ABLEH ONLY)
Specimen Information: Cornea
Component
Special Requests
LEFT EYE
Culture
NO ACANTHAMOEBA ISOLATED IN 14 DAYS

16



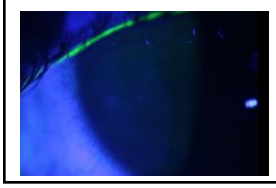
11/18/22

2 days later



17





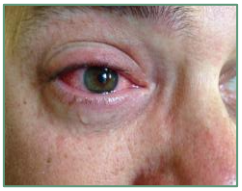


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What Do You Do If You Are Not Sure?

The Scenario

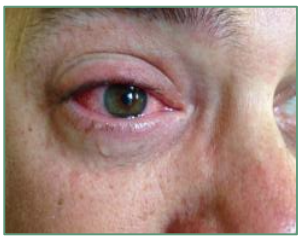
- Unilateral red eye with pain/photophobia
- Keratitis…but not typical



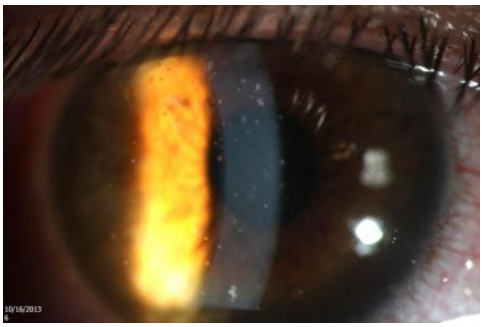
19

Chris: 40 y/o White Male

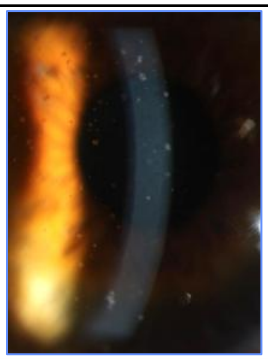
- Felt something fly into his eye 1 week earlier while on an airboat ride in FL
- Used Tobramycin for 2-3 days
- Then switched to PF q 2-3 hrs



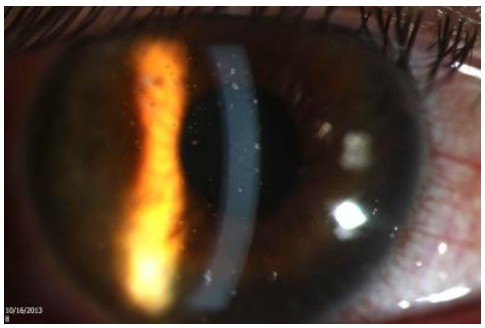
20



21



22



23

What is going on?

24

What do you think they have?

A. No Clue?
B. Microsporidia
C. Acanthamoeba
D. Thygesons
E. Herpetic

25

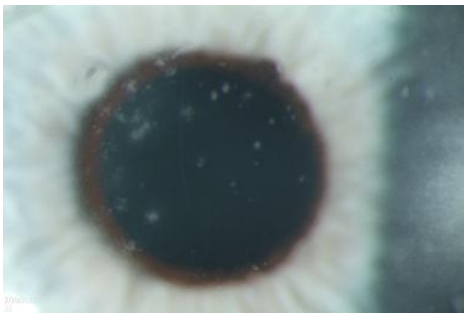
SM: 23 y/o Rookie Pro Football Player

- Noted redness, pain, irritation and photophobia LE X 1 week
- Soft CL wearer
- Had spent several days in the Bahamas fishing and doing a lot of boating
  - Rinsing off with freshwater from the boat water tank
- In training camp and having difficulties
- VA: 20/30

26



27



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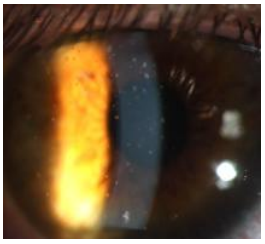
What do you think?

How would you treat him?

29

Strikingly Similar Presentation

Optometrist



Football Player



30

SM: 23 yo Rookie Pro Football Player

- Nonspecific Keratitis
- Culture and confocal microscopy obtained

31

SM: Rookie Pro Football Player

- Suspicion of Acanthamoeba
  - Based on history
  - Based on Confocal microscopy
- Started on
  - Baquicil (polyhexamethylene) gtts q2h
  - Chlorohexidine q1h
  - Vigamox q2h
- Asked to return in 2 days

32

2 days later



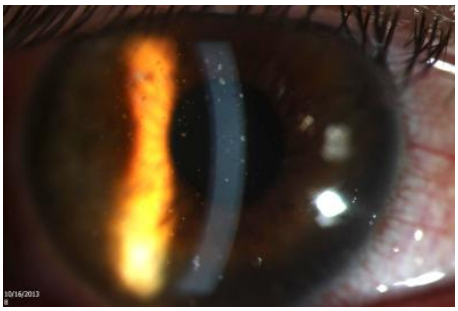
33

His Course

- Returned to training camp and August 2-a-days
- Had steady improvement
- Was cut on the last day of training camp

34

Back to Chris



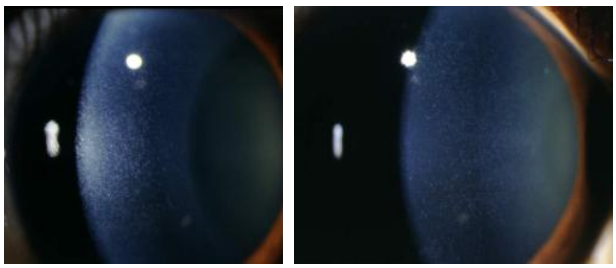
35

Dr. Chris: Microsporidia

- Intracellular protozoa
- Coarse epithelial keratitis
- Conjunctival reaction minimal
- Tx - none effective
  lubrication, sulfa?, fumigillin



36

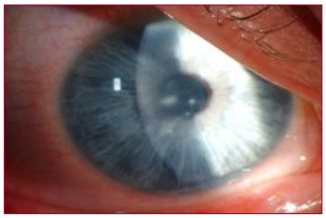


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What Do You Do If You Are Not Sure?

The Scenario

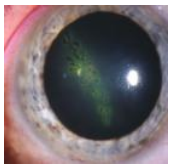
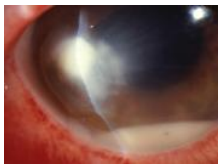
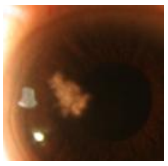
- Unilateral red eye
- Pain and photophobia
- Keratitis
  - Suspicious for a dendrite



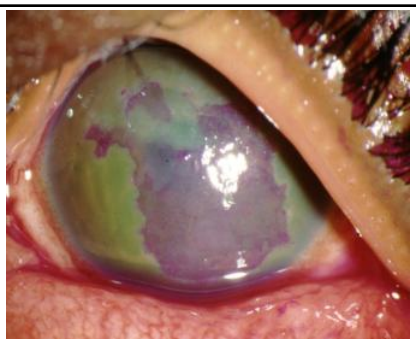
38

Differentiating Corneal Pathology

- Inciting event
  - Bacteria, fungus, virus
- Bodies immune response

39



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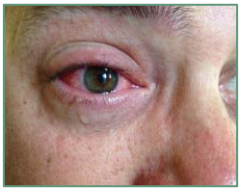
What Do You Do If You Are Not Sure?

The Scenario

- Unilateral red eye with pain/photophobia
- Keratitis - suspicious for a dendrite

Determine

- Is there a preauricular node and follicles?
- Corneal sensitivity?
- How does it stain – RB is hugely important



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What Do You Do If You Are Not Sure?

Your Options

- Wait a day
- Treat as if it were HSV

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July 12, 2021

Progress Notes Dunbar, Mark T., OD

Assessment

1) Most likely HSV epithelial keratitis RE
   - Has had multiple recurrences over past 16 mo
   - Most recent episode started ~ 2 weeks ago
   - Seems to be induced by stress and possibly sunlight
   - Currently using Valtrex AND Lotoprodnol
     - Last 3 episodes she has been on Lotopred
   - No infiltrate
   - Smaller dendrite nasal

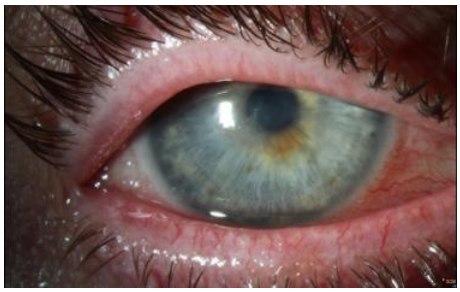
Plan

1) Photo today
2) Stop steroid
3) Continue with Valtrex tid
4) RTC Thurs

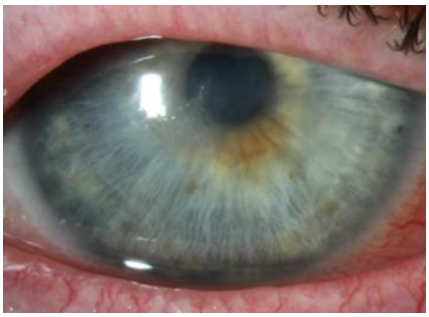
43

7/19/21

1 week Later
Still redness, photophobia
pain



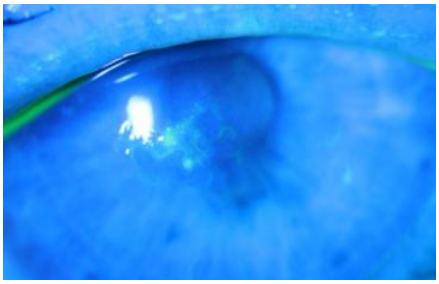
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45

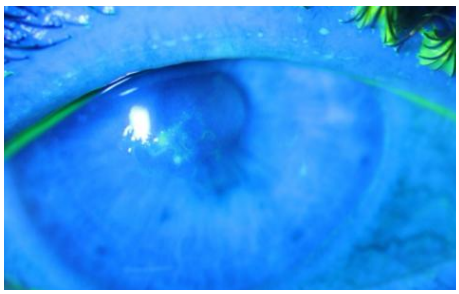
7/19/21

Added NSAID
Continue Valtrex



46

7/19/21



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Progress Notes Dunbar, Mark T., OD (Optometrist) • Optometry

Assessment

1) Most likely HSV epithelial keratitis RE -> worse over the past week
   - More linear pattern today and more define nasal lesion
   - No stromal involvement
   - Would have expected improvement

   - Had a sample of Prolenza and thought this provided significant relief but ran out

   - Note: Has had multiple recurrences over past 16 mo
     - Most recent episode started ~ 3 weeks ago
     - Seems to be induced by stress and possibly sunlight
     - Was on Valtrex AND Lotoprodnol
       - Last 3 episodes she has been on Lotopred
     - Lotepred stopped 1 week ago
     - No infiltrate

2) Hx of Chronic lymphocytic leukemia (CLL)

Plan

1) Photo today
2) Continue with Valtrex
   - Has been on Valtrex for 3 weeks
3) Artificial tears
4) RTC tomorrow with Culbertson

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8 Days Later

Office Visit

Culbertson, William W. IV, MD — Ophthalmology — **HSV epithelial keratitis** — Referred by Culbertson, William W. IV, MD

Progress Notes

Assessment/Plan:

HSV epithelial keratitis OD in patient with CLL
Has had multiple recurrences over past 16 mo (3/2020, 5/2020 treated with Valtrex, steroid drops + Prolase and cleaned up, recurrence 5/2021 treated with steroid drops an resumed Valtrex 500mg TID PO
Most recent episode started ~ 2 weeks ago
Seems to be induced by stress and possibly sunlight
Currently using Valtrex 500mg TID PO
Last 3 episodes she has been on Lotopred
Mild diffuse localized subepithelial haze but dendrite has resolved
Has increased IOP probably secondary to mild associated HSV indocyclitis
Will increase Valtrex to 1000mg BID because will resume topical steroid because of central haze and increased IOP
Slit lamp photos today
Will dee Dr Dunbar next week because Dr Culbertson is out of town

CLL (Dx 3 years ago)

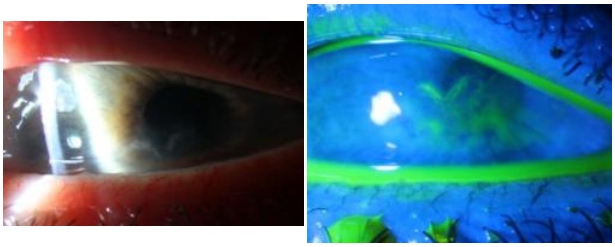
Recommend increase Valtrex 500 mg 2 tab PO twice a day
Start prednisolone 1 drop BID OD
Stop prolensa

→ Increased central haze
Increased IOP

RTC: Dr. Dunbar 08/04/2021 - can see Dr Culbertson the next week

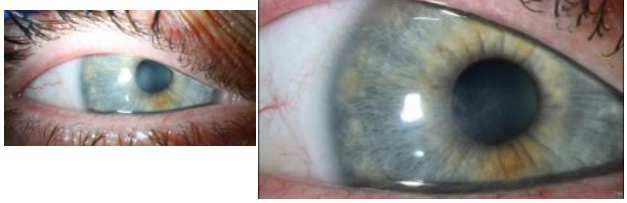
49

7/27/21

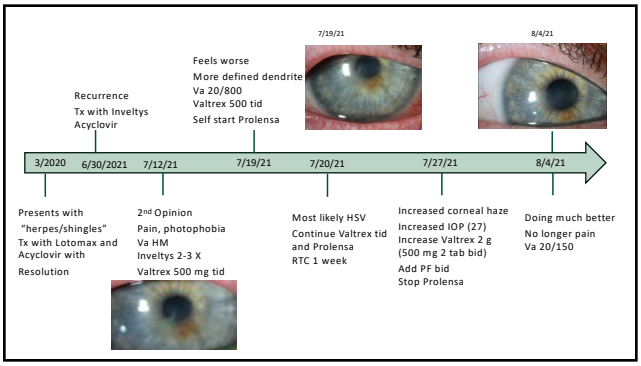


50

8/4/21 (3 ½ weeks since initial exam)



51

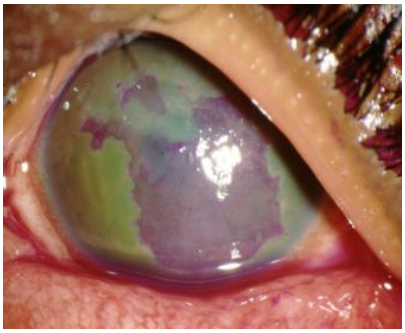


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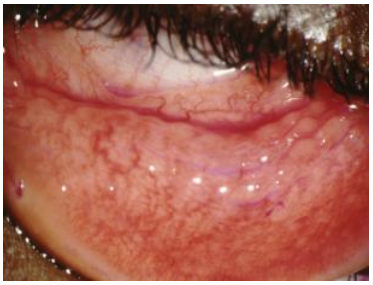
How About This One…

- 48 y/o Construction worker
- Notes pain (5/10) and discomfort X 4 days
- Redness, photophobia
- VA: 20/80

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Herpes Simplex Infections

- Most common corneal infection in USA
  - Approximately 500,000 people affected -NEI 1993
- Up to 80% of pop have HSV 1 antibodies
- Primary infection usually occurs in children
  - Cutaneous infection
  - Generalized illness
- Most HSV in eye represent recurrent infection
  - Recurrent disease occurs in ~ 25% in 1 yr, 33% 2nd yr

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Herpes Simplex Infections

- Leading infectious cause of corneal blindness in the U.S.
- 500,000 Americans have had some form of ocular infection with HSV
  - Almost 100% of people in the US > 60 harbor HSV
- 20,000 new primary cases are diagnosed in the U.S. each year
- An estimated **28,000 relapses** per year in the U.S.

57

HSV: Risk Factors for Reactivation

- Stress, illness, menses, immunosuppression, sun exposure, fever, and trauma, though these were not born out by the Herpetic Eye Disease Study
- The most significant risk factor for HSV keratitis is a past history of ocular HSV
- The recurrence rate for HSV may be as high as 25% in the first year and 33% by the end of the second year

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HSV Epidemiology

- Global: World-wide
- **HSV-1:** oropharyngeal sores (children), keratitis
  - Most commonly acquired by children
  - Most adults are seropositive
  - Only a small proportion have recurrences

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HSV Epidemiology

- **HSV-2**: genitalia (young adults)
  - Sexually transmitted disease
  - About 1 in 6 Americans have HSV-2
  - Fetal/newborn transmission
  - Increased risk for HIV infection

60

HSV

- Characterized by **primary outbreak** and subsequent **reactivation**
- Primary outbreak is typically mild or subclinical

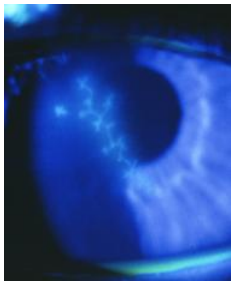


- After primary infection, the virus becomes latent in the trigeminal ganglion or cornea
- Stress, UV radiation, and hormonal changes can reactivate the virus

61

HSV

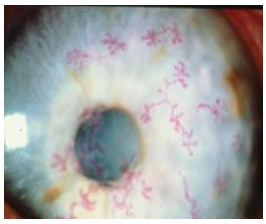
- Blepharoconjunctivitis
- Epithelial Keratitis
  - Dendrite
  - Geographic
- Stromal Keratitis
  - Immune Stromal Keratitis (IST) vs Necrotizing
- Endotheliatis



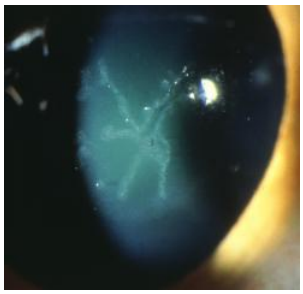
62

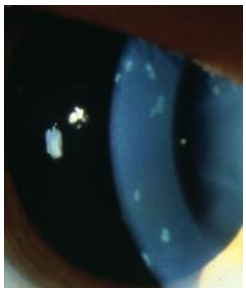
HSV Dendritic Keratitis

- Thin, linear, branching ulcerative lesion
- Terminal bulbs
- Heaped-up edges
- Decreased corneal sensitivity
- Central stains with NaFl, edges stain w rose
- Work up usually not necessary
- Geographic ulcers -> larger amourphous defect

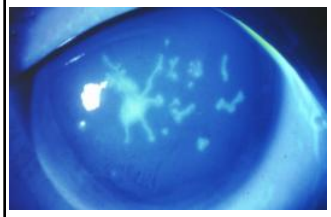


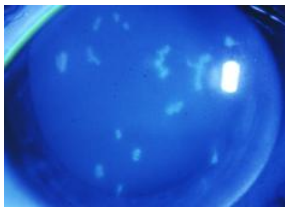
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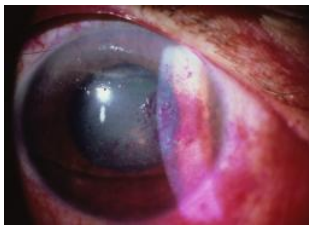




65

Management HSV Epithelial Keratitis

- Debridement
  - Removes infected cells
  - Faster resolution, less scarring
- Topical antiviral
  - Viroptic (Trifluridine)
  - Zirgan (Ganciclovir gel)
- Oral antiviral
  - Zovirax (Acyclovir)
  - Valtrex (Valacyclovir)
  - Famvir (Famiciclovir



66

HSV CATEGORY	COMMON NOMENCLATURE	TREATMENT
Epithelial Keratitis	▪ Dendritic Keratitis ▪ Geographic Keratitis	Antiviral (topical or oral) or debridement
Stromal Keratitis without ulceration	▪ Interstitial Keratitis ▪ Immune Stromal Keratitis	Topical steroid + oral antiviral prophylaxis
Stromal Keratitis with ulceration	▪ Necrotizing Keratitis	Oral antiviral in therapeutic doses + topical steroid
Endothelial Keratitis	▪ Disciform Keratitis	Oral antiviral in therapeutic doses + topical steroid

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Oral Antiviral Agents for HSV Keratitis

Agent	Treatment Dose	Prophylactic Dose
Zovirax (Acyclovir)	400 mg five times daily	400 mg twice daily
Valtrex (Valacyclovir)	500 mg three times daily	500 mg once daily
Famvir (Famciclovir)	250 mg three times daily	250 mg once daily

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HSV Oral Treatment

- Acyclovir (Zovirax)
  - Adults: 2g/day (400 mg 5 X a day)
  - Children: 20mg/kg/day
- Valacyclovir (Valtrex) 500 mg TID
- Famciclovir (Famvir) 250 mg TID

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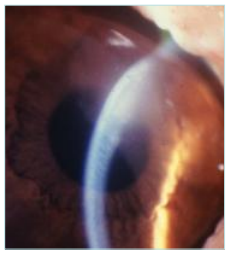
HSV Epithelial Keratitis

- 20% to 30% of patients will have reactivation within 5 years
  - Often stromal but can be epithelial

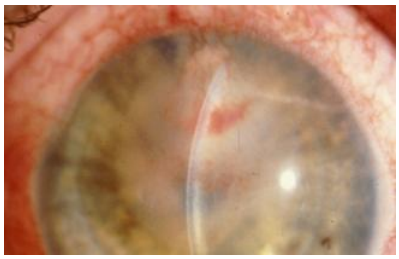
70

Stromal: Immune Stromal Keratitis

- Inflammatory response to viral antigen in stroma
- Focal, multifocal, diffuse stromal opacities
- Disc-shaped stromal edema
- Interstitial keratitis (IK)
  - Stromal neovascularization
    - Ghost vessels
    - HSV most common cause



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72

HSV Recurrence Rates

- 10% at 1 year
- 23% at 2 years
- 36% at 5 years
- 60% at 20 years

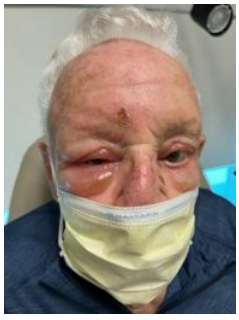
Liesegang TJ, Melton LJ, Daly PJ, et al. Epidemiology of ocular herpes simplex. Natural history in Rochester, Minn, 1950 through 1982. Arch Ophthalmol. 1989; 107(8):1160-1165.

73

HSV: Recurrent Disease

- HEDS: Low dose oral acyclovir reduces recurrences of ocular disease **by half** and orofacial recurrences by 50%
- A retrospective analysis found beneficial effects of oral acyclovir persisted even when the drug was taken for **18 months or longer**

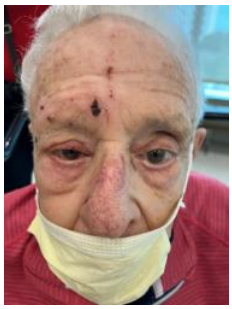
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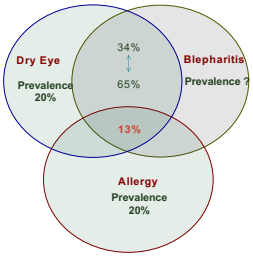
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The Spectrum of Ocular Surface Disease

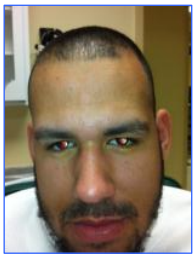
- Overlap between dry eye, blepharitis and allergy
- Often co-exist
- Difficult when making treatment decisions



78

23 y/o Hispanic Male

- Itching and discharge
  - Doesn't use any gtts
- VA: 20/20 OU
- Normal exam
- Dx: SAC?



79

Itching – Think allergy

But – What about the discharge?

What kind of discharge?

How often do you get the discharge?

How do you remove the discharge?

80

What does this patient have?

A. Chlamydia
B. Seasonal allergic conjunctivitis
C. Blepharitis
D. Dry eye
E. Mucous Fishing Syndrome

81

Constant mucous discharge



82

Mucus Fishing Syndrome

MES P. McCULLEY, MD, MARY BETH MOORE, MD, ALICE Y. MATOBA, MD

Abstract: Twenty-five patients are described with a variety of external ocular diseases including keratoconjunctivitis sicca, blepharitis, and allergic conjunctivitis, who presented with persistence of symptoms of irritation, foreign body sensation, and apparent excessive mucus production, with mild conjunctival inflammation despite appropriate treatment of the underlying disease. All patients were found to have evidence of trauma to the conjunctival epithelium due to mechanical removal of the excess mucus from the surface of the globe or inferior cul-de-sac. The surface irritation created by the mechanical damage led to a further increase in mucus production, creating a cycle that we have termed mucus fishing syndrome. Cessation of this behavior coupled with ongoing therapy of the underlying disease led to resolution of signs and symptoms in all patients. [Key words: blepharitis, conjunctival epithelium, keratoconjunctivitis sicca, mucus, ocular surface disease, rose bengal, vital stain.] Ophthalmology 92:1262-1265, 1985

83



84



85

Mucous Fishing Syndrome

- Cascading cyclic characterized by continuous extraction of mucous strands
- Initiated by ocular irritation
- Ocular surface cells produce excess mucus, in response to irritation
- "Snow balling" cycle begins when the pt extracts ("fishes") excess mucus from the ocular surface
  - Causes further irritation and a more discharge

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Mucous Fishing Syndrome

- Treatment includes eliminating the initiating element
- Educating the patient not to touch the eye when extracting the excess mucus
- Artificial Tears - Mucolytic agent
- Antihistamine-mast cell stabilizer

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Gone Fishin'

Mucus fishing syndrome may be more common than you think. Optometrists can diagnose and manage it appropriately.

Edited by Paul C. Ajamian, O.D.

12/27/2010



Q: I have a 47-year-old white female patient with previously diagnosed dry eye and chronic ocular irritation. She reports constant mucus discharge throughout the day. Artificial tears have not helped. What's the next step?

A: Ask the patient about the discharge—specifically, is she pulling long strands of mucus out of her eye? If so, this patient may have mucus fishing syndrome.

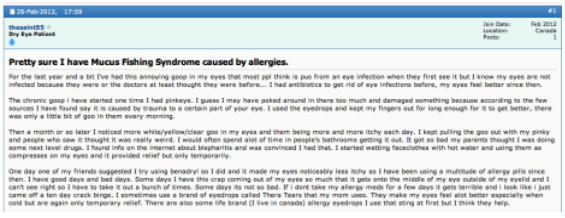
"Mucus fishing syndrome begins with a precipitating irritant—such as dry eye, allergy or blepharitis—that starts the production of mucus on the ocular surface," says Scott Slagle, O.D., of the Salem Veterans Affairs Medical Center, in Salem, Va. "Then the patient digitally extracts the mucus from the ocular surface, creating a mechanical abrasion on the conjunctival and/or corneal epithelium. In addition, other extrinsic antigens and allergens may be introduced onto the ocular surface. As a reflex from the antigens and the mechanical abrasion, the ocular surface produces more mucus—which prompts the patient to 'fish' more mucous strands out of the eye, causing further irritation and antigen introduction, which escalates a more-profound mucus discharge, and so on."

It's a vicious cycle that can last months, even years, until the patient is treated. "[illegible] volunteer this," Dr. Slagle says. "I don't know if it's out of embarrassment or what saying that they're pulling these strands of mucus out of their eyes."



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MFS



28-Feb-2012, 17:59 #1

Dry Eye Patient

Join Date: Feb 2012
Location: Canada
Posts: 1

Pretty sure I have Mucus Fishing Syndrome caused by allergies.

For the last year and a bit I've had this annoying goop in my eyes that most ppl think is pus from an eye infection when they first see it but I know my eyes are not infected because they were or the doctors at least thought they were before... I had antibiotics to get rid of eye infections before, my eyes feel better since then.

The chronic goop I have started one time I had pinkeye. I guess I may have poked around in there too much and damaged something because according to the few sources I have found say it is caused by trauma to a certain part of your eye. I used the eyedrops and kept my fingers out for long enough for it to get better, there was only a little bit of goo in them every morning.

Then a month or so later I noticed more white/yellow/clear goo in my eyes and them being more and more itchy each day. I kept pulling the goo out with my pinky and people who saw it thought it was really weird. I would often spend alot of time in people's bathrooms getting it out. It got so bad my parents thought I was doing some next level drugs. I found info on the internet about blepharitis and was convinced I had that. I started wetting facecloths with hot water and using them as compresses on my eyes and it provided relief but only temporarily.

One day one of my friends suggested I try using benadryl so I did and it made my eyes noticeably less itchy so I have been using a multitude of allergy pills since then. I have good days and bad days. Some days I have this crap coming out of my eyes so much that it gets onto the middle of my eye outside of my eyelid and I can't see right so I have to take it out a bunch of times. Some days its not so bad. If I dont take my allergy meds for a few days it gets terrible and I look like I just came off a ten day crack binge. I sometimes use a brand of eyedrops called Thera Tears that my mom uses. They make my eyes feel alot better especially when cold but are again only temporary relief. There are also some life brand (I live in canada) allergy eyedrops I use that sting at first but I think they help.

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MFS

Treatment

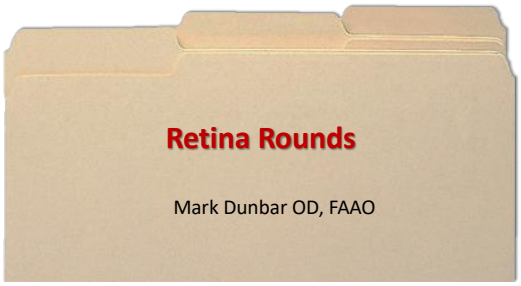
To cure MFS it is important to:

- Stop fishing
- Reduce inflammation
- Break up the mucus
- Treat underlying conditions

Stop fishing!

The key to successful treatment is for patients to *never* touch the white of their eyes or the inner surface of their eyelids with *anything*. This can be difficult as the habit may be hard to break and initially there will be increased mucus in the eye. Some patients find that they need something to remind them not to touch their eyes. Successful strategies include wearing sunglasses, swimming goggles and gloves. Nail extensions have been known to help! It is best to plan to stop fishing at a time when you are likely to be distracted by other things such as gardening or sport.

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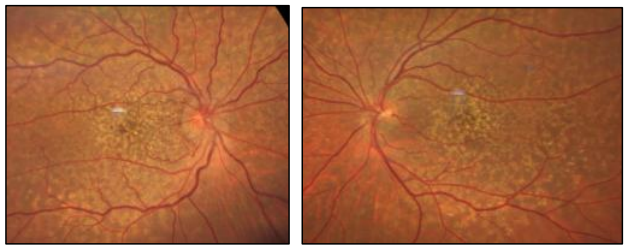
Are you the eye doctor to your friends?

92

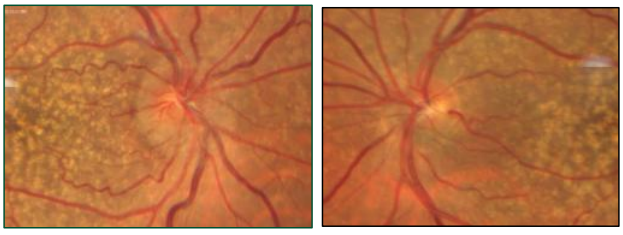
Sal: 62 yo Male (used to live down the street)

- 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**

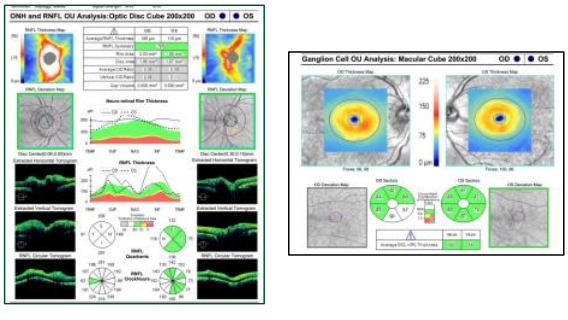
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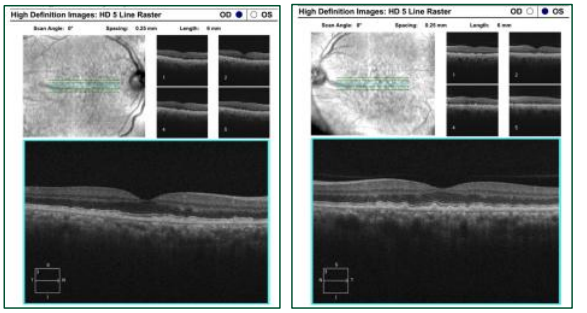
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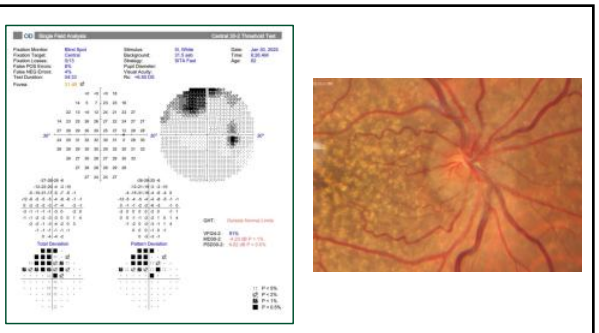
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What's going on with Sal?

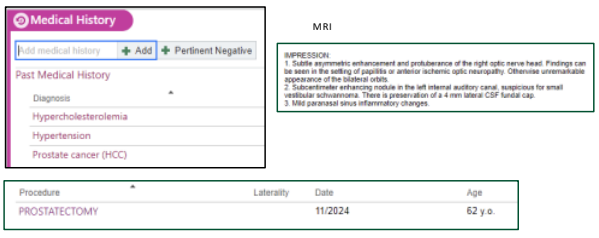
99

What's going on with Sal?

1. Basal Laminar/cuticular drusen OU
2. Swollen optic nerve ->
   - NAION
   - Papillitis
   - Neuro-retinitis

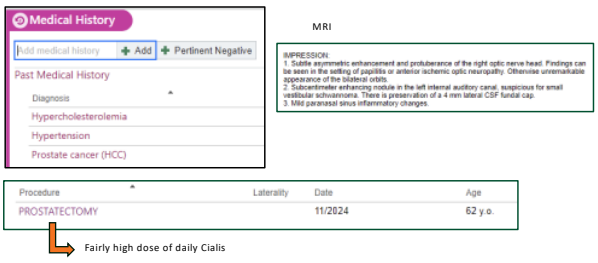
100

Sal



101

Sal



102

Sal: NAION from daily Cialis Use

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ERECTILE DYSFUNCTION

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

inhibits phosophodiesterase-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**



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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.

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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.

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73 yo Male: RE inferior "crescent moon" shaped spot in for 3-5 weeks

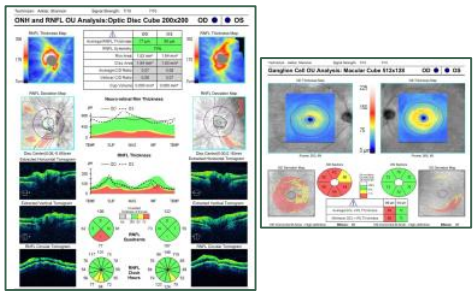
- Started 2 months ago
- Intermittent
- 2 occurrences of cloudy vision but maintained light perception vision
- LE is perfect
- VA: 20/20 each eye
- CVF: FTFC OU
- No APD

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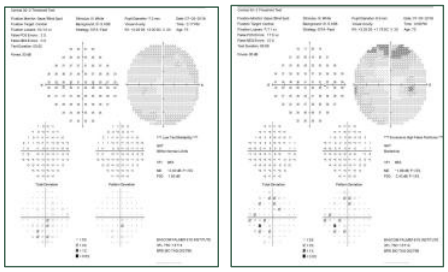




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Current Medications

Current Prescriptions (7 listed)

Medication	Dose	Route	Frequency
NADH-ASCORBIC ACID-SOD BICARB PO		Oral	
minocycline (MINOCIN,DYNACIN) 100 MG capsule	100 mg	Oral	2 TIMES DAILY
atorvastatin (LIPITOR) 10 MG tablet	10 mg	Oral	EVERY MORNING
metoprolol (TOPROL XL) 50 MG 24 hr tablet	50 mg	Oral	EVERY MORNING
DHA-EPA-Coenzyme Q10-Vitamin E (COQ-10 & FISH OIL PO)	1 capsule	Oral	DAILY
Omega-3 Fatty Acids (OMEGA 3 PO)		Oral	
B Complex Vitamins (B COMPLEX 100 PO)	1 tablet	Oral	DAILY

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

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Cialis for daily use

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Next Case

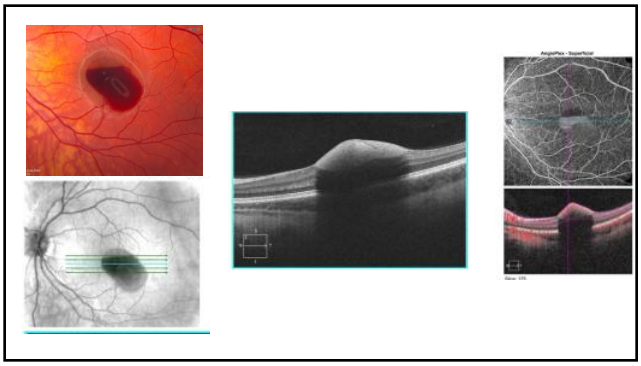
"A Closed Mouth Gathers No Feet"

113

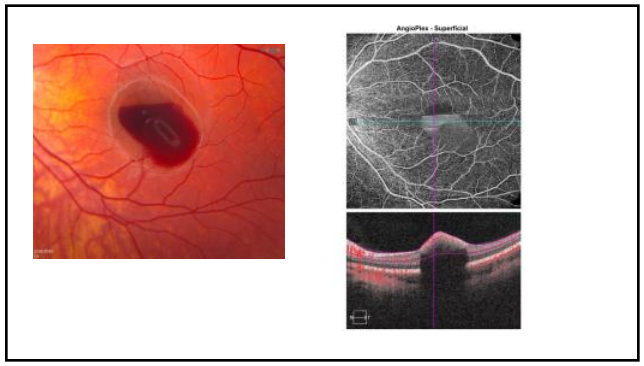
20 yo College Student:
Woke up with blurred Vision in his LE



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116

What is the Diagnosis?

A. Choroidal neovascular membrane
B. Retinal arterial macroaneurysm (RAM)
C. Valsalva retinopathy
D. BRVO

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Valsalva Retinopathy

Valsalva occurs when a person tries to **exhale air forcibly** with a **closed glottis** (windpipe) so that no air goes out through the mouth or nose

Sudden increase in intrathoracic or intra-abdominal pressure occurs as a result of this forced exhale

Hemorrhage occurs due to spontaneous rupture of superficial retinal capillaries

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Valsalva Retinopathy Causes





119

Valsalva Retinopathy Causes



Musical Instruments



120

Valsalva Retinopathy Causes





Vigorous Exercise

121



With a careful, detailed and probing history….

…he denied all of these

But as he is dilating ….

122

Reminder of important clinical lesson

CASE REPORT

Postcoital visual loss due to valsalva retinopathy

Luke Michaels,[1] Naing Latt Tint,[2] Philip Alexander[1]

[1]University Hospital Southampton, Southampton, UK
[2]Princess Alexandra Eye Pavilion, Edinburgh, UK

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Philip Alexander,
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Accepted 6 October 2014

SUMMARY
A 29-year-old male patient presented to eye emergency clinic after noticing a left paracentral scotoma on waking. On direct questioning the patient revealed an episode of vigorous sexual intercourse the preceding evening. During orgasm the valsalva manoeuvre can produce a sudden increase in retinal venous pressure resulting in vessel rupture and haemorrhagic retinopathy. Valsalva retinopathy is managed conservatively and the patient's symptoms resolved spontaneously without intervention. This case report highlights the importance of focused history taking of patients which can thereby obviate the need for further investigations. This case also emphasises the importance of considering sexual activity as a cause of stress-induced pathology.



Figure 1 Valsalva-induced parafoveal haemorrhage.

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Case Report

Valsalva Retinopathy Associated with Sexual Activity

Khalid Al Rubaie[1] and J. Fernando Arevalo[1,2]

[1] The Wynnewood Division, King Khaled Eye Specialist Hospital, Al Orubu Street, P.O. Box 7781, Riyadh 11462, Saudi Arabia
[2] Retina Division, Wilmer Eye Institute, Johns Hopkins University School of Medicine, Baltimore, MD 21231, USA

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A 54-year-old healthy male presented complaining of sudden loss of vision in the right eye. Initial visual acuity was counting fingers. The patient's acute vision loss developed after sexual activity. Color fundus photos and fluorescein angiography were performed showing a large subinternal limiting membrane hemorrhage in the macular area. A 23-gauge transvitreous pars plana vitrectomy with brilliant blue assisted internal limiting membrane peeling was performed with best-corrected visual acuity recovery to 20/50 at 6 months of follow-up.

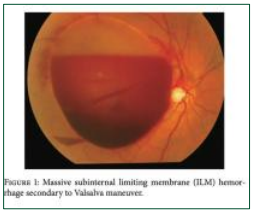


Figure 1: Massive subinternal limiting membrane (ILM) hemorrhage secondary to Valsalva maneuver.

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Sex-Induced Valsalva Retinopathy

Learning points

- Focused history taking is of great diagnostic importance because with certain topics, patients will not necessarily volunteer the history.
- If a suspicion exists that patient presentation is linked to sexual activity, physicians should be aware of the sensitivities of taking a sexual history and be confident in their ability to do so.
- Valsalva retinopathy can be caused by any physical stress, including sexual activity.
- Sex-induced valsalva retinopathy has been reported and is thought to be rare but the true incidence is unknown.
- Valsalva retinopathy is a self-resolving condition with an excellent prognosis.

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Valsalva Retinopathy: Treatment

- Spontaneous resolution – slow absorption of the hemorrhage
- YAG laser lysis
- Pars Plana Vitrectomy (PPV)

- He returned for follow up ~ 1 week later with no improvement
  - Then was lost to follow up

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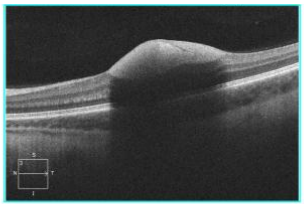
Valsalva Retinopathy

- Valsalva occurs when a person tries to **exhale air forcibly** with a **closed glottis** (windpipe) so that no air goes out through the mouth or nose
- Sudden increase in intrathoracic or intra-abdominal pressure occurs as a result of this forced exhale
- Valsalva maneuver occurs from various day-to-day activities that cause straining such as coughing, sneezing, vomiting, exercise, blowing on musical instruments, among others[1].

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Where is the hemorrhage?

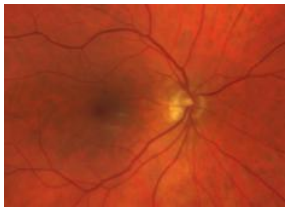
- Pre-retinal
- Subhyloid
- Sub – ILM

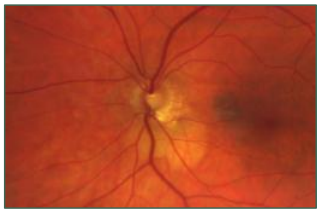


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Initially seen 2/6/2023
Follow up 3/6/2023

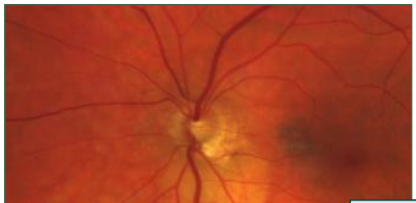
67 yo Retired UM Professor
History of moderate high myopia

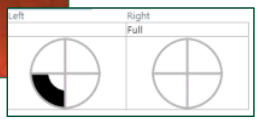




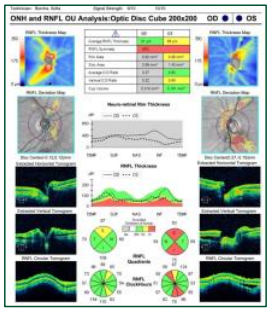
TA 14/14

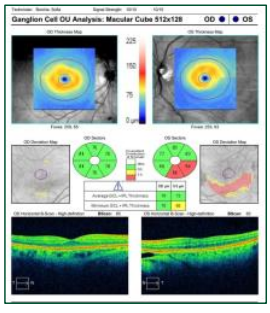
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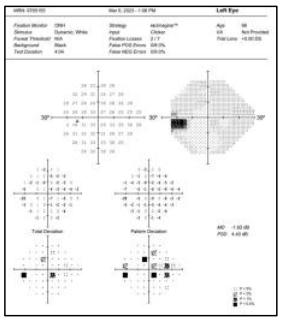


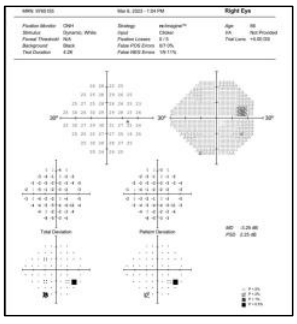
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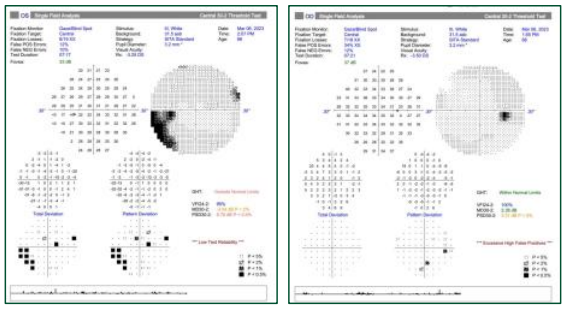


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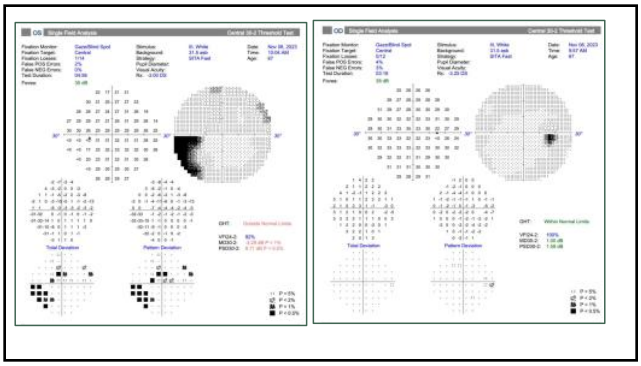


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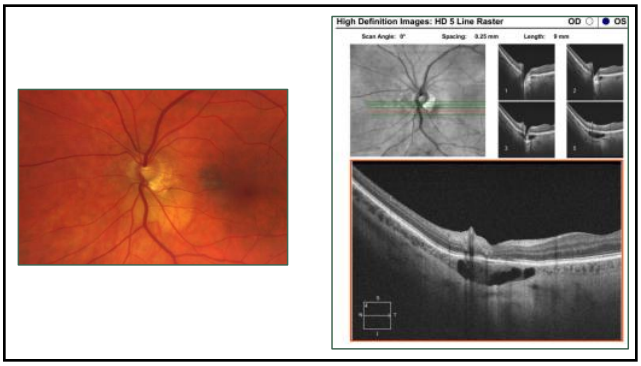
March 6, 2023: Ta 14-15

- Started on Latanoprost
- Referred to neuro-ophthalmology
  - MERG
  - Carotid scans
  - MRI
- All normal

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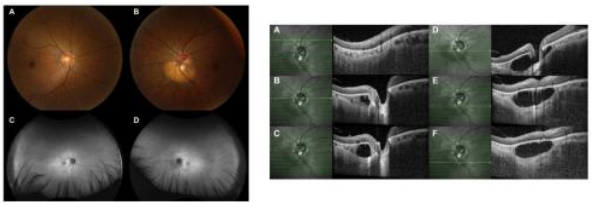
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Peripapillary choroidal cavitation as a feature of pathological myopia

Kirk A J Stephenson, Ruozhou Tom Liu, Zaid N Mammo



casereports.bmj.com/content/16/3/e255072 Feb 2023

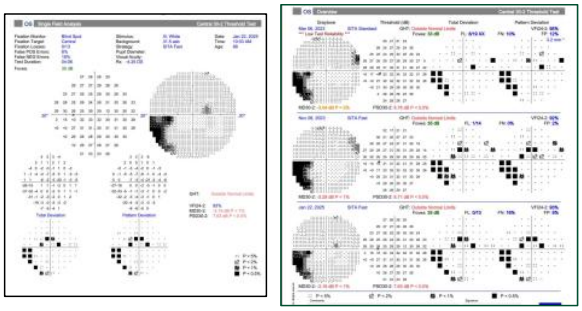
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Peripapillary Choroidal Cavitation (PCC)

Learning points

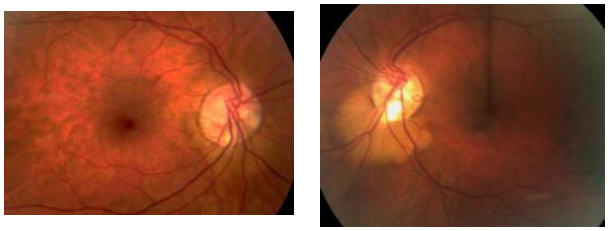
- Peripapillary choroidal cavitation (PCC) is prevalent in those with high myopia (up to 50% in some series).
- Novel studies show PCC development is influenced by tractional (optic nerve sheath, dura mater, vitreous) forces on predisposed areas (eg, thinned choroid/sclera at borders of peripapillary staphylomata, tilted optic nerve head, gamma-peripapillary atrophy).
- It is a benign lesion, but may be associated with choroidal neovascularisation or treatable features of pathological myopia.

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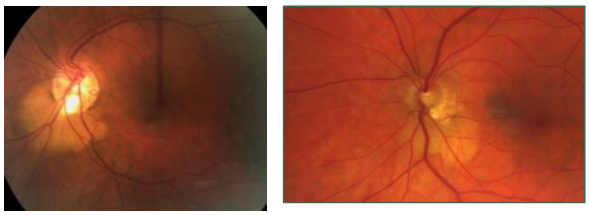
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Sheldon: 2006



140

Sheldon: 2006



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Pay Attention to the Vitreoretinal Interface

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Arising from the Vitreomacular Interface (VMI):
One Finding: 5 Diseases

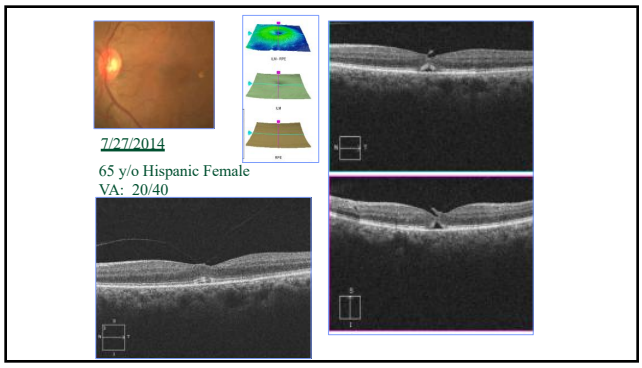
- Vitreomacular traction (VMT)
- Full Thickness macular hole (FTMH)
- Lamellar macular hole
- Epiretinal membrane (ERM)
- **Myopic macular schisis**

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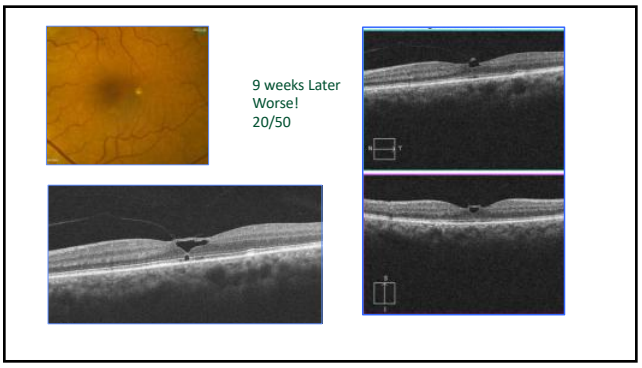
Vitreomacular Traction in the Era of OCT

- Not rare!
- **A group of disorders caused by incomplete PVD**
- Leads to persistent traction on the macula
- Produces in most cases CME and decreased visual acuity
- Can be idiopathic
- Can result in full thickness macular hole formation
- Can occur with ERM

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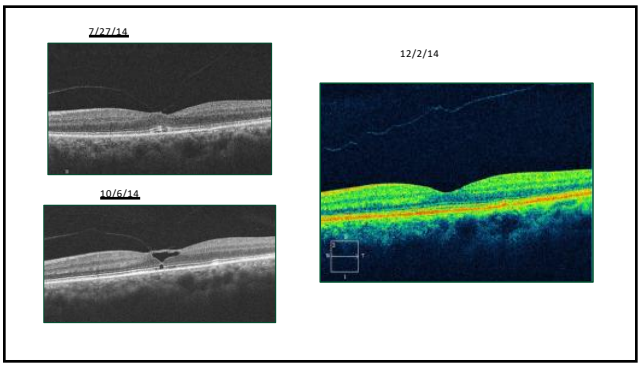
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VMT

- Seems to be more cases of VMT then ever before
- Likely due to more primary care OD providers have OCT's
  - Being diagnosed more

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Pneumatic Vitreolysis

- Non-surgical option for VMT
- C3F8 gas injected into the vitreous
- Success of releasing the VMT > 80% of the time
  - But C3F8 can last up to 10 weeks
- SF6 (shorter acting gas) only worked 50-60% of the time
- Room air injected would release 10-20% of the time





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Drinking Bird Technique

- Patient will bob their head (and torso) up and down after gas injection
  - 1 minute out of every hour the patient is awake
- By going up and down, that gas bubble will roll across the macula and hopefully potentiate the release of the vitreomacular traction
- This technique puts the gas bubble on the area of pathology and rocks it back and forth to help improve the chances of the VMT releasing



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Pneumatic Vitreolysis with Perfluoropropane for Vitreomacular Traction with and without Macular Hole

DRCR Retina Network Protocols AG and AH

- 46 pts enrolled in Protocol AG; 35 enrolled in Protocol AH randomized to PVL vs. Sham Injection
- Protocol AG showed an 18 of 23 (78%) central VMT release rate at 24 weeks
- Protocol AH showed central VMT released in 33 of 35 (94%) eyes at 24 weeks
- Higher-than-expected complication rate in both trials
  - Combining studies, **7 of 59 eyes (12%) that received PVL developed rhegmatogenous RD (n = 6) or retinal tear (n = 1)**

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65 y/o White Female

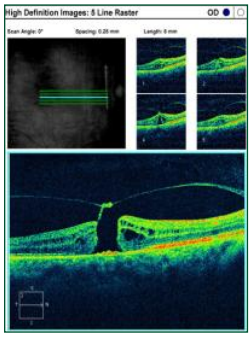
↓ VA RE X 6 Weeks, ↓ VA LE X > 1 Yr



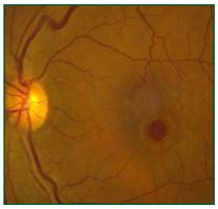


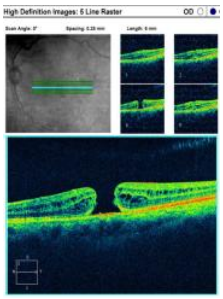
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How do macular holes develop?

A. Anterior – posterior traction
B. Tangential traction – just like Gass said
C. Peripheral retinal traction
D. Peri-foveal traction

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Idiopathic Macular Holes

- VA 20/400 to 20/60
- 1/3 DD full thickness round hole
- Surrounding cuff of fluid
- Yellow deposits in the base of the hole
- Translucent operculum (anterior) 50%
- May have associated ERM (10-20%)

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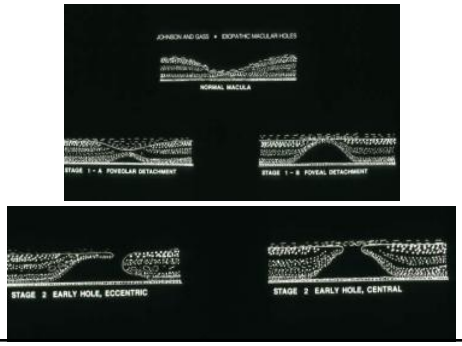
Idiopathic Macular Holes

Pathogenesis

- Anterior-posterior vitreous traction
- 1989 Gass/Johnson:

Tangential traction due to shrinkage and contraction of the prefoveal vitreous cortex

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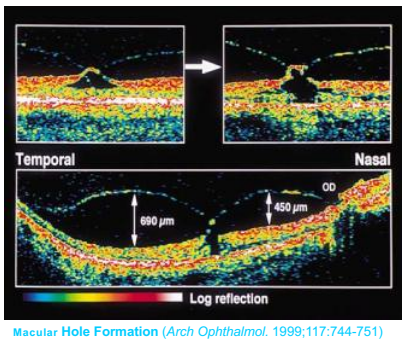


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Stages of Macular Holes

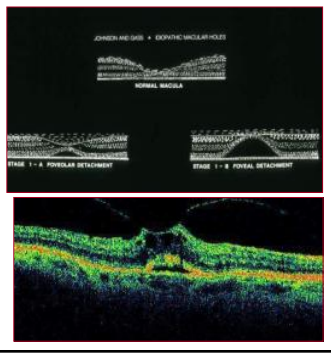
- IA: Yellow spot or ring in macula
- IB: Loss of foveal depression
- II: Partial tear in the sensory retina
- III: Fully developed full thick mac hole
- IV: Macular hole with posterior vitreous separation

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Macular Hole Formation (*Arch Ophthalmol.* 1999;117:744-751)

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