Around the globe: Interesting cases

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Financial Disclosures

- Johnson and Johnson Vision Care, Inc
- Sight Sciences
- Sun Pharma
- Novartis
- Science Based Health
- Aerie Pharmaceuticals
- Eyevance Pharmaceuticals
- Tissue-Tech
- NovaBay Pharmaceuticals

Objectives

- Gain an increased understanding of the definition, epidemiology, causes, and pathophysiology of unique and rare anterior and posterior segment conditions.
- Understand, interpret, and distinguish the common signs and symptoms associated with each condition.
- Learn how to properly test for and manage these conditions.

About me

- Fluent in French, Cantonese and Mandarin
- Came to the US when I was 15
- Did most of my high school in CT
- Went to UC San Diego
- Graduated from SCCO (% 2007)
- Currently practicing full scope optometry at OMD group practice specializing in ocular surface disease

Poll #1 - Practice setting?

- Private practice
- OD/OMD
- Academia
- Retail (Lenscrafters, America's Best, Eyemart, Stanton, etc…)
- Government (VA, IHS, Air force, Navy, etc…)

Introduction

- Review cases to improve the diagnosis and management of these unusual clinical cases.

Case #1 - IP

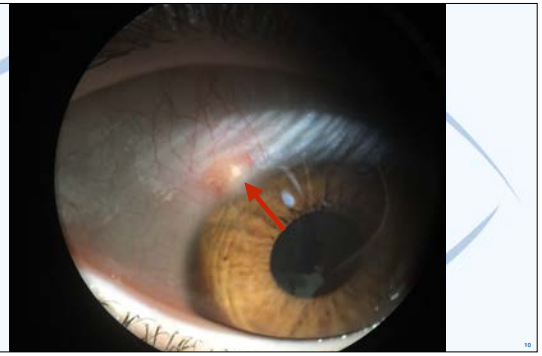
- CC/HPI: 6 yo HM presents with “small red bump on the white of eye” OD.
- Pt’s mother says that he’s been suffering from seasonal allergies and rubbing his eyes more frequently OD>OS.
- Ophthalmic meds: None
- Systemic Meds: Children’s Benadryl PRN
- FHx: Unremarkable

Case #1 - IP

- VA: 20/30 OD/OS PHNI
- Pupils: PERLA
- EOM: FROM OU
- VF: FTFC via CVF
- IOP: OD: 14 mmHg, OS: 13 mmHg with iCare rebound tonometry

Case #1 - IP

- Slit Lamp Exam
- Lids: Trace anterior blepharitis OU
- Conjunctiva: Trace papillary conjunctivitis OU, Trantas dot at 11 o’clock OD with surrounding tr-1+ injection
- Everything else unremarkable



Poll 2 - DDx?

- Pingueculitis
- Allergic Conjunctivitis
- Vernal Keratoconjunctivitis
- Conjunctival foreign body

Diagnosis

- VKC (Vernal Keratoconjunctivitis) OD>OS - cause of trantas dot
- Mild anterior blepharitis OU

Treatment

- Pt's mother education on the cause of "red bump" due to severe allergies.
- Start Alrex (loteprednol 0.2%) BID OD along with preservative free tears to help flush out the allergens.
- Start lid hygiene of lid scrubs with We Love Eyes tea tree oil cleanser to prevent confounding issue.

Vernal Keratoconjunctivitis (VKC)

- Chronic form of ocular allergy with corneal involvement
- Affects mainly children and young adults
- IgE and T cell-mediated disease
- Trantas' dots and giant "cobblestone" papillae are pathognomonic
- 3 types
  - Tarsal
  - Limbal
  - Mixed

Vernal Keratoconjunctivitis

- Treatment include all the same as allergic conjunctivitis
- However since it's more severe, topical steroids are more effective
- Which steroids?
  - Alrex (loteprednol 0.2%)
  - FML (fluorometholone 0.1%)
- What about long term management?
  - Avoidance
  - Cool compresses help as natural decongestant
  - Oral anti-histamine can help mediate flare ups

Vernal Keratoconjunctivitis

- Verkazia (0.1% cyclosporine) by Santen
- FDA approved for VKC June 2021
- Available Spring 2022
- 1 gtt QID Preservative Free vial
- Age 4-18

Questions?

Case #2 - VC

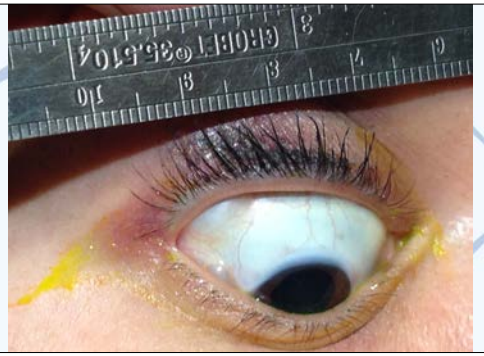
- CC/HPI: 46 yo HF presented "white bubble on sclera towards temple" OD
- "Blew her nose at 6:30am" which caused severe sharp pain OD that has become a dull ache now
- 3 days prior, she reports bumping the ledge of the pool while swimming with her right upper lid area which caused some swelling that went away
- Ophthalmic meds: OTC tears at local pharmacy
- Systemic meds: Lisonopril (HTN), nitrofurantoin (UTI), and alprazolam (anxiety)
- FHx: unremarkable
- Allergies: Sulfa meds

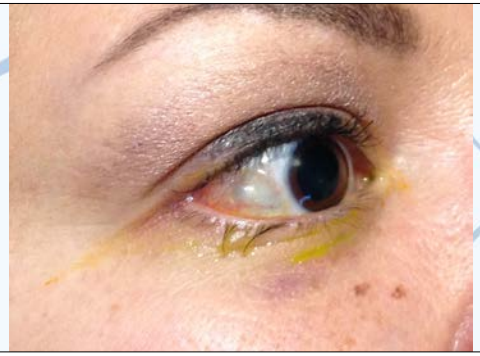
Case #2 - VC

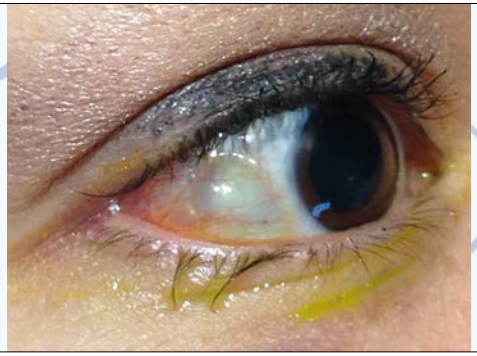
- VA: OD/OS: 20/20
- Pupils: PERLA
- EOM: FROM OU
- VF: FTFC via CVF
- IOP: OD: 15 mmHg, OS: 15 mmHg with iCare rebound tonometry

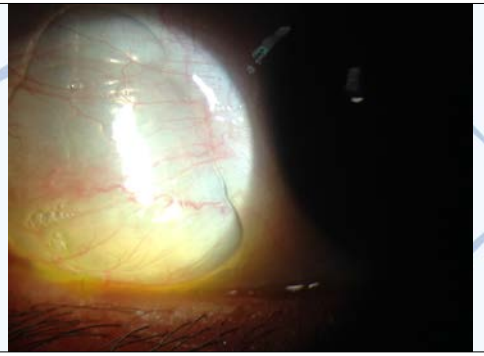
Case #2 - VC

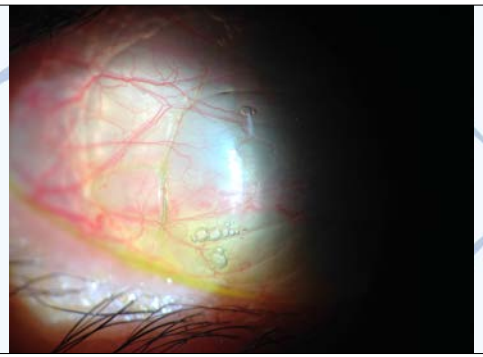
- Slit Lamp Exam
- Conjunctiva: Subconjunctival air trapped temporally and superiorly
- Everything else unremarkable











25

Poll 3 - DDx?

- Conjunctival cyst
- Pinguecula
- Orbital emphysema
- Dellen

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26

Diagnosis

- Eye pain OD
- Suspected Orbital fracture OD (from direct trauma 2 days ago) with marked orbital emphysema (from nose blowing) without muscle entrapment or orbital compartment syndrome from emphysema

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27

Plan

- CT orbits and head ordered
- Possible ENT/oculoplastics referral if symptoms worsen

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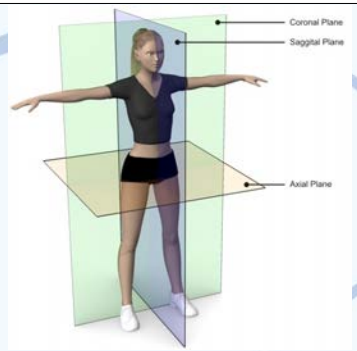
28



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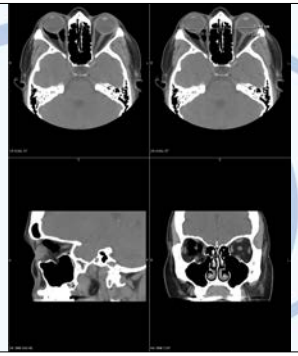

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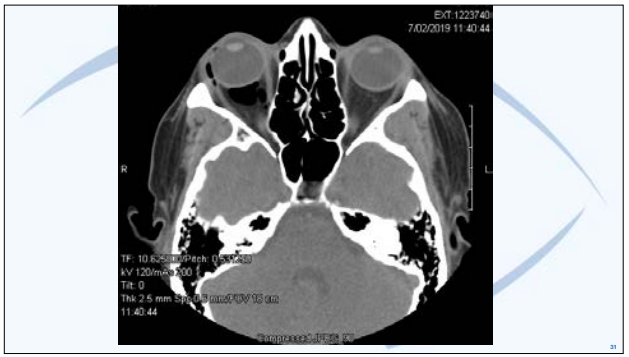
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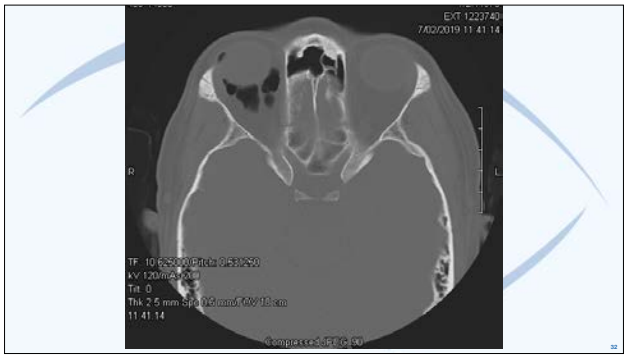
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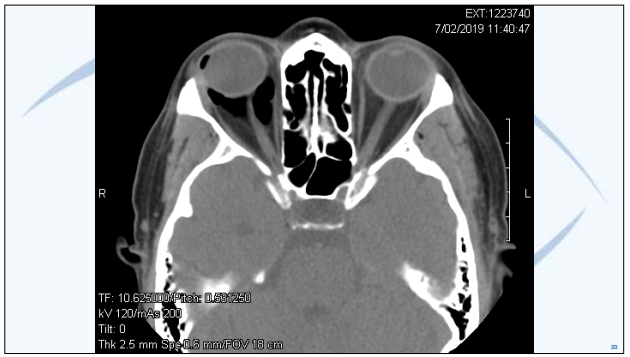
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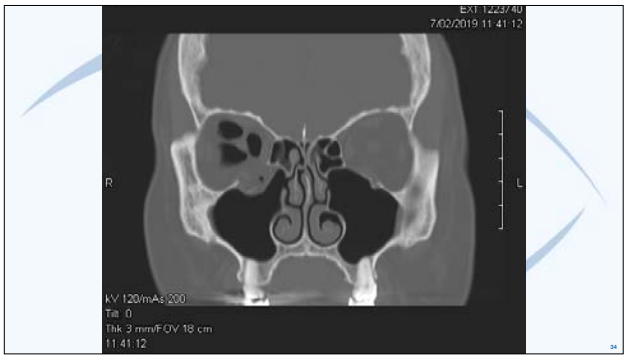
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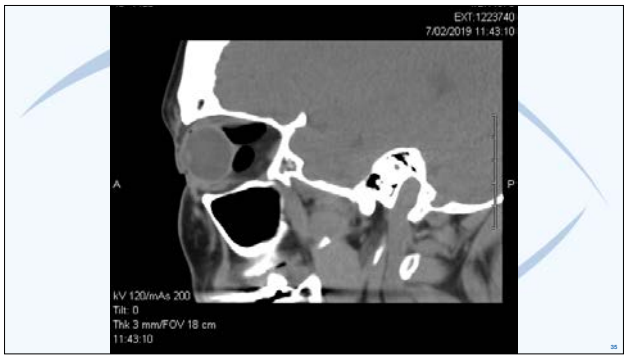
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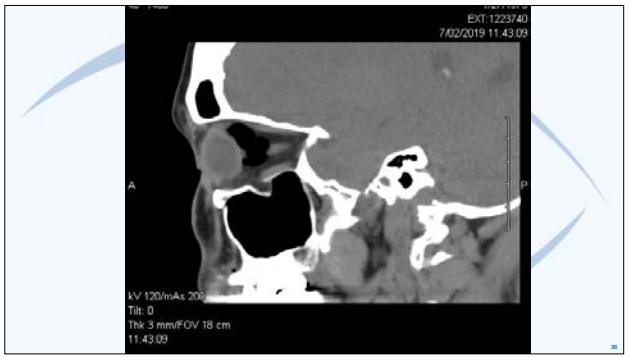
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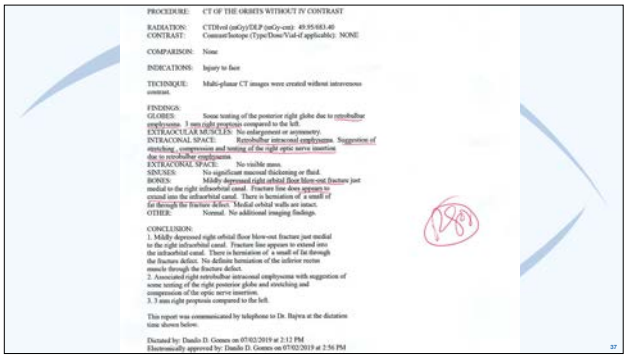


PROCEDURE: CT OF THE ORBITS WITHOUT IV CONTRAST

RADIATION: CTDIvol (mGy)/DLP (mGy-cm): 49.95/683.40
CONTRAST: Consent/Isotope (Type/Dose/Vial-if applicable): NONE

COMPARISON: None

INDICATIONS: Injury to face

TECHNIQUE: Multi-planar CT images were created without intravenous contrast.

FINDINGS:
GLOBES: Some tenting of the posterior right globe due to retrobulbar emphysema. 3 mm right proptosis compared to the left.
EXTRAOCULAR MUSCLES: No enlargement or asymmetry.
INTRACONAL SPACE: Retrobulbar intraconal emphysema. Suggestion of stretching , compression and tenting of the right optic nerve insertion due to retrobulbar emphysema
EXTRACONAL SPACE: No visible mass.
SINUSES: No significant mucosal thickening or fluid.
BONES: Mildly depressed right orbital floor blow-out fracture just medial to the right infraorbital canal. Fracture line does appears to extend into the infraorbital canal. There is herniation of a small of fat through the fracture defect. Medial orbital walls are intact.
OTHER: Normal. No additional imaging findings.

CONCLUSION:
1. Mildly depressed right orbital floor blow-out fracture just medial to the right infraorbital canal. Fracture line appears to extend into the infraorbital canal. There is herniation of a small of fat through the fracture defect. No definite herniation of the inferior rectus muscle through the fracture defect.
2. Associated right retrobulbar intraconal emphysema with suggestion of some tenting of the right posterior globe and stretching and compression of the optic nerve insertion.
3. 3 mm right proptosis compared to the left.

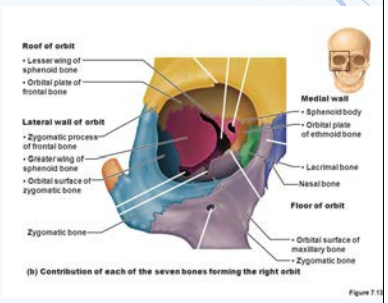
This report was communicated by telephone to Dr. Bajwa at the dictation time shown below.

Dictated by: Danilo D. Gomes on 07/02/2019 at 2:12 PM
Electronically approved by: Danilo D. Gomes on 07/02/2019 at 2:56 PM

37

Anatomy review

- The frontal bone make up most of the roof, the zygomatic bone most of the lateral wall, the maxilla bone for the floor and the ethmoid/ lacrimal bone for the medial wall.



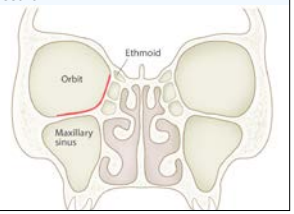
(b) Contribution of each of the seven bones forming the right orbit

Figure 7.10

38

Anatomy review

- Most common orbital fracture are due to blowout at the weakest point
  - Usually floor fracture followed by medial wall
- Pathophysiology- increased intraorbital pressure



Case #2 - VC 2 days f/u

- CC/HPI: “bumps” are improving
- Still has mild/mod pain and discomfort under OD due to bumps
- Pt also reports brief episode of diplopia upon awakening this morning but went away after blinking

40

Case #2 - VC (2 day f/u)

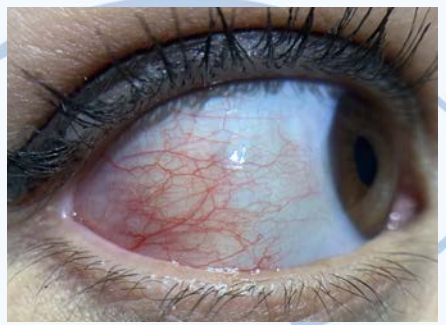
- VA: OD/OS: 20/20
- Pupils: PERLA
- EOM: FROM OU
- VF: FTFC via CVF
- IOP: OD: 16 mmHg, OS: 15 mmHg with iCare rebound tonometry

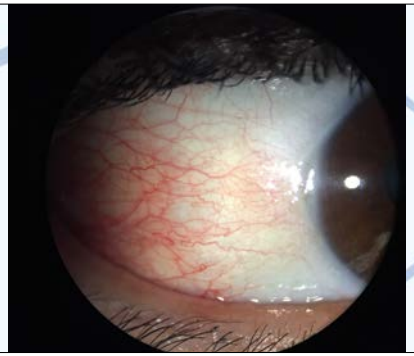
41

Case #2 - VC (2 day f/u)

- SLE findings: 1+ injection, no air bubble seen temporally or superiorly
- Hertel findings: Base = 94. OD/OS: 14 mm
- Everything else was unremarkable

42





Diagnosis

- Eye pain OD - mostly resolved
- Diplopia OD - intermittent, ok to monitor
- Orbital fracture OD - reviewed CT scan with patient
- Orbital emphysema OD - resolved
- Proptosis OD- resolved
- Episcleritis OD - likely secondary to orbital emphysema

Plan

- Start Inveltys (loteprednol 1%) TID OD x 1 week, BID OD x 1 week, QD x 1 week then discontinue
- RTC 2 weeks

Case #2 - VC (07/16/2019) 2 weeks f/u

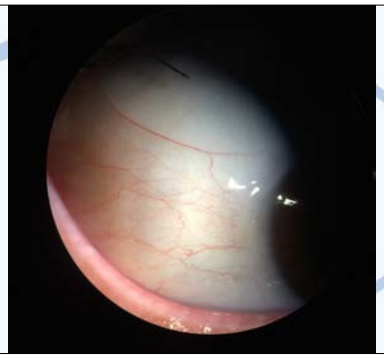
- CC/HPI: Mild soreness OD, compliant with meds until she left them at hotel. Last used 3 days ago.
- Ocular meds: None

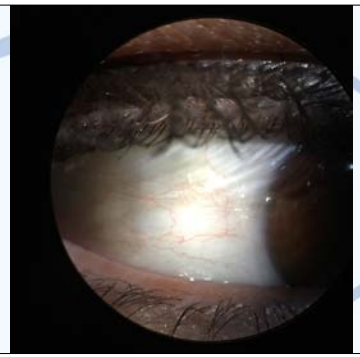
Case #2 - VC (07/16/2019) 2 weeks f/u

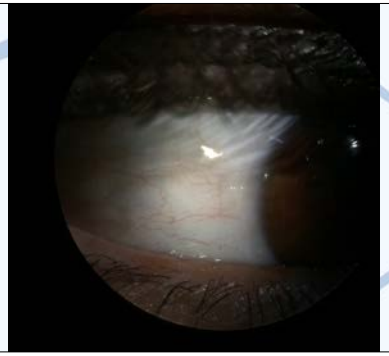
- VA: OD/OS: 20/20
- Pupils: PERLA
- EOM: FROM OU
- VF: FTFC via CVF
- IOP: OD: 12 mmHg, OS: 13 mmHg with iCare rebound tonometry

Case #2 - VC (07/16/2019) 2 weeks f/u

- SLE findings: white and quiet, no air bubble seen temporally or superiorly
- Everything else was unremarkable







Orbital Emphysema

- Forceful injection of air into the orbital soft tissue space[1]
- Usually following some form of trauma and/or orbital fracture[1]
- Caused by sneezing, and blowing nose[1]
- Common complications include: Proptosis[1]
- Severe complications include: Loss of VA, inc IOP, and orbital compartment syndrome[1]
- Treatment: none, self resolving[1]
- Use of oral antibiotics is controversial[1]

1.Jean-Marc Gauguet, Patricia A. Lindquist, Kitt Shaffer, Orbital Emphysema Following Ocular Trauma and Sneezing, Radiol Case Rep. 2008; 3(1): 124. Published online 2015 Nov 6

Questions?

Case #3 - EW

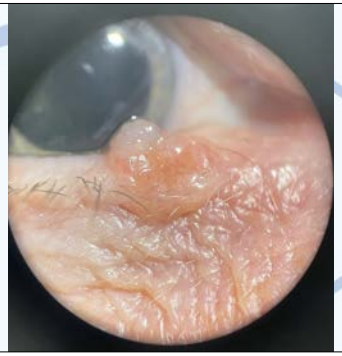
- CC/HPI: 61 yo CF noticed inability to close OS after surgery (acoustic neuroma removal), OS feels dry and irritated
- 2nd CC: “Growth RLL, getting bigger”
- Ophthalmic meds: genteal gtts QID, genteal gel QHS
- Systemic meds: Atorvastatin, lisinopril and clopidogrel
- FHx:Unremarkable
- Allergies: Sulfa, Vicodin, erythromycin

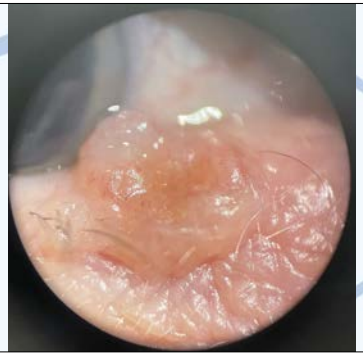
Case #3 - EW

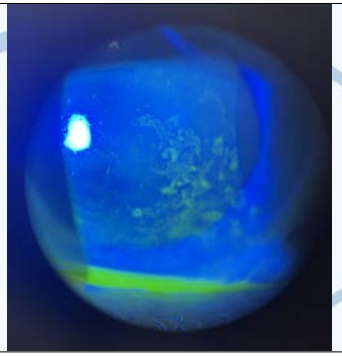
- VA cc: 20/20 OD, 20/40 OS PH 20/40+
- Pupils: PERLA
- EOM: FROM OU
- VF: FTFC via CVF
- IOP: OD: 14 mmHg, OS: 14 mmHg with iCare rebound tonometry

Case #3 - EW

- Slit Lamp Exam:
- External: unable to blink or close OS
- Lid margin: 5.5mm x 4.5mm crater like lesion RLL
- Cornea: 1+ inf PEEs OD, 2-3+ inf PEK with dendritic-like lesion due to irregular epithelium
- Lens: 1+ NSC OU
- Everything else unremarkable







Poll 4 - DDx?

- Squamous cell carcinoma
- Basal cell carcinoma
- Papilloma
- Eyelid cyst

Diagnosis

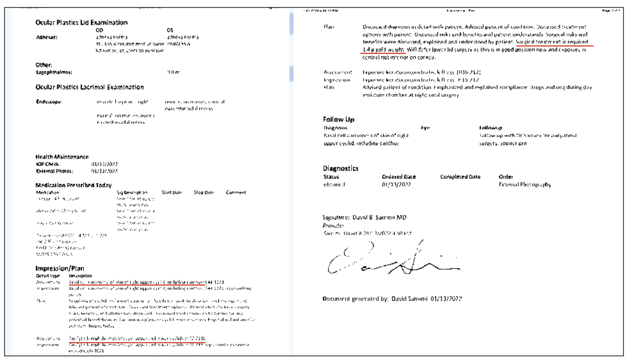
- Basal cell carcinoma OD
- Neurotrophic keratitis OS - secondary to acoustic neuroma removal surgery
- Exposure keratopathy OS

Plan

- Referral to oculoplastic for biopsy to confirm bcc, likely need Moh's for excision.
- BCL OS to reduce exposure along with heavy lubrication
- RTC 3 weeks for BCL swap

Case #3 - EW 3 week f/u

- CC/HPI: 61 yo CF severe pain with BCL x 1 week. Self removal and pain went away. Occasional FBS with "needles poking" OS.
- Saw oculoplastic OMD 1 week ago
- Ophthalmic meds: Thera tears PF gtts QID, genteal gel QHS
- Systemic meds: Atorvastatin, lisinopril and clopidogrel
- FHx:Unremarkable
- Allergies: Sulfa, Vicodin, erythromycin


Ocular Plastics Lid Examination

Other:
Lagophthalmos:

Ocular Plastics Lacrimal Examination

Endoscopy:

Health Maintenance
IOP Check: 01/13/2022
External Photos: 01/13/2022

Medication Prescribed Today

Impression/Plan

Follow Up

Diagnostics

Status	Ordered Date	Completed Date	Order
[illegible]	01/13/2022		External Photography

Signature: David B Samimi MD
Provider

Document generated by: David Samimi 01/13/2022

Basal Cell Carcinoma

- Most common cancer in Humans[1]
- Slow growing tumor where metastases are rare[1]
- >50% eyelid BCCs are on the lower eyelid[1]
- Etiology: UV light exposure[1]
- Treatments? Surgical excision including Moh micrographic surgery. Remove sooner rather than later to preserve eyelid function[1].

1. Shi Y, Jia R, Fan X. Ocular basal cell carcinoma: a brief literature review of clinical diagnosis and treatment. Onco Targets Ther. 2017;10:2483-2489. Published 2017 May 8. doi:10.2147/OTT.S130371

Squamous Cell Carcinoma

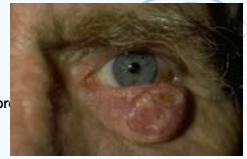


Image courtesy of https://eyewiki.aao.org/w/images/7/7a/ad3A40_4048.png

- Less common than BCCs
- Invasive growing tumor that can metastasize to pr lymph nodes[1]
- Actinic keratosis is a precursor
- Etiology: UV light exposure[1]
- Treatments? Surgical excision including Moh micrographic surgery.

1. Pe'er J. Pathology of eyelid tumors. Indian J Ophthalmol. 2016;64(3):177-190. doi:10.4103/0301-4738.181752

Questions?

Case #4 - JJ (12/11/2018)

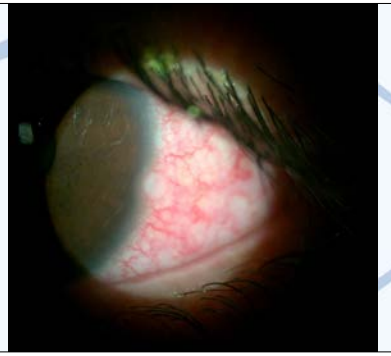
- CC/HPI: 22 yo HM presents with red, watery and FB sensation OS X 3 days
- VA stable, no hx of cl wear.
- Ophthalmic meds: none
- Systemic meds: none
- FHx: none
- Allergies: NKDA

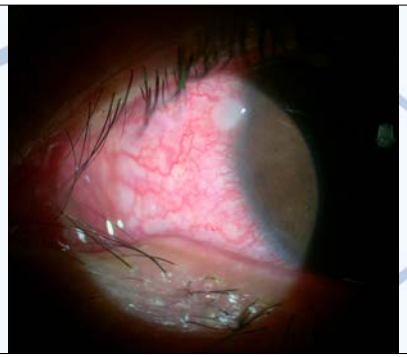
Case #4 - JJ (12/11/2018)

- VA cc: 20/40- OD PH 20/20-2, 20/20-2 OS
- Pupils: PERLA
- EOM: FROM OU
- VF: FTFC via CVF
- IOP: OD: 14 mmHg, OS: 15 mmHg with iCare rebound tonometry

Case #4 - JJ (12/11/2018)

- Slit Lamp Exam:
- Lid margin: 1+ anterior bleph OD, 2+ anterior bleph OS, telangiectasia OU
- Conjunctiva: quiet OD, 3+ injection, 3+ papillae, 4 white round dots at limbus (3, 7, 8, 10 o'clock)
- K: +NaFl staining with Tr SPK OU
- AC: quiet
- Everything else unremarkable





Poll #5 - DDx?

- Dellen
- Peripheral ulcerative keratitis
- Phlyctenular keratoconjunctivitis

Diagnosis

- Phlyctenular Keratoconjunctivitis OS - cause of red, and foreign body sensation. Likely due to excess blepharitis
- Staphylococcal Aureus blepharitis OU - moderate and contributing to limbal phlyctenules

Plan

- Start T-dex gtts QID OS X 7 days
- Initiate lid hygiene therapy with We Love Eyes tea tree oil cleanser BID with washcloth to control bacterial overgrowth
- RTC 1 week for follow up

Case #4 - JJ (12/26/2018) 1 week f/u

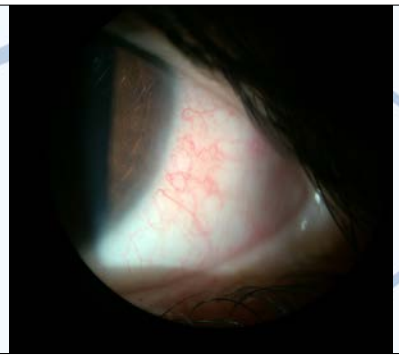
- CC/HPI: 22 yo HM presents much improved redness and FBS, no itching, or dryness OS
- VA stable
- Ophthalmic meds: T-dex gtts QID OS
- Systemic meds: none
- FHx: none
- Allergies: NKDA

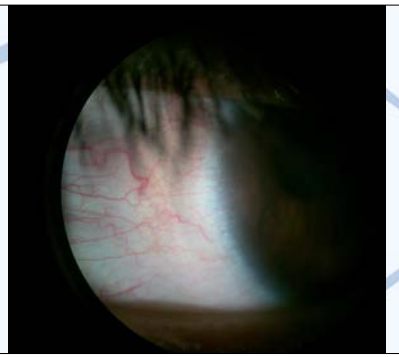
Case #4 - JJ (12/26/2018) 1 week f/u

- VA cc: 20/40- OD PH 20/25-2, 20/25+2 OS
- Pupils: PERLA
- EOM: FROM OU
- VF: FTFC via CVF
- IOP: OD: 15 mmHg, OS: 16 mmHg with iCare rebound tonometry

Case #4 - JJ (12/26/2018) 1 week f/u

- Slit Lamp Exam:
- Lid margin: tr-1+ anterior bleph OD, tr-1+ anterior bleph OS, telangiectasia OU
- Conjunctiva: quiet OD, trace injection OS
- K: +NaFl staining with Tr SPK OU
- AC: quiet
- Everything else unremarkable





Diagnosis

- Phlyctenular Keratoconjunctivitis OS - Much imp.
- Staph bleph OU - mild imp, consider dermatologist consult since pt has acne

Plan

- Taper T-dex gtts BID OS X 7 days
- Cont lid hygiene therapy with We Love Eyes tea tree oil cleanser and consult with dermatology to control acne
- RTC PRN

Phlyctenular Keratoconjunctivitis (PKC)

- Localized, non-infectious inflammatory or hyper-sensitivity disorder[1]
- 2 forms[1]
  - Corneal: more severe
  - Conjunctival: less severe
- Etiology[1]
  - Tuberculosis (2.8 cases per 100k)
  - Staphylococcus Aureus (more common) from chronic blepharitis
  - Co-morbidities: Rosacea, MGD, Hordeola
- Treatment[1]
  - Topical steroids to reduce chance of scarring, topical cyclosporin A also viable

1. Neiberg MN, Sowka J. Phlyctenular keratoconjunctivitis in a patient with Staphylococcal blepharitis and ocular rosacea. Optometry. 2008;79(3):133-137. doi:10.1016/j.optm.2007.09.015

But wait there's more….

Case #4 - JJ (01/09/2019) 2 weeks later

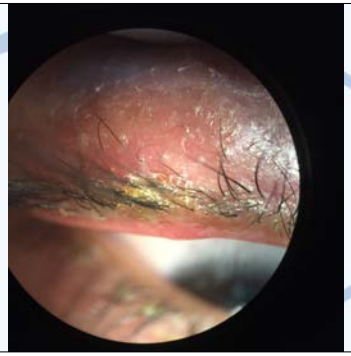
- CC/HPI: JJ comes back with a swollen and "bruised" RUL x 5 days. No discharge. OS is doing well.
- Ophthalmic meds: T-dex susp TID OS, WLE cleanser BID OU
- Systemic meds: none

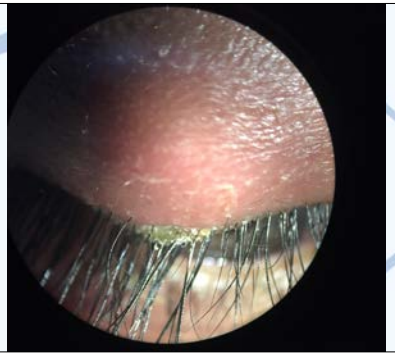
Case #4 - JJ (01/09/2019) 2 weeks later

- VA cc: 20/25-2 OD PHNI, 20/20-2 OS
- Pupils: PERLA
- EOM: FROM OU
- VF: FTFC via CVF
- IOP: OD: 15 mmHg, OS: 18 mmHg with iCare rebound tonometry

Case #4 - JJ (01/09/2019) 2 weeks later

- Slit Lamp Exam:
- Lid margin: 1+ anterior bleph OD, internal hordeolum, tr anterior bleph OS, telangiectasia OU
- Conjunctiva: tr injection OD, trace injection OS
- K: +NaFl staining with Tr SPK OU
- AC: quiet
- Everything else unremarkable





Diagnosis

- Internal hordeolum OD - active RUL
- Staph bleph OU - mild imp, but likely main cause of hordeolum
- Phlyctenular Keratoconjunctivitis OS - resolved

Plan

- Removed collarettes in-office, start T-dex ung OD, 100 mg Doxycycline BID PO, warm compresses QID OU
- Cont lid hygiene with WLE cleanser TID
- D/c Tdex susp gtts for PKC
- F/u in 2 weeks

Case #4 - JJ (01/25/2019) 2 weeks later

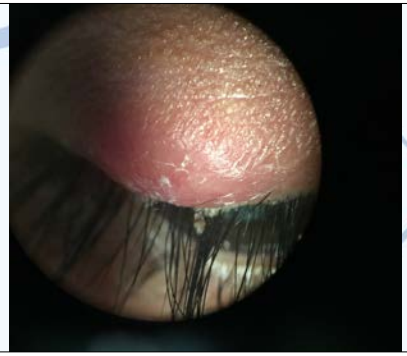
- CC/HPI: feels better, thinks RUL bump might be smaller. Compliant with warm compresses TID. VA stable
- Ocular meds: T-dex ung TID OD, WLE cleanser BID OU
- Systemic meds: Doxycycline 100 mg BID PO

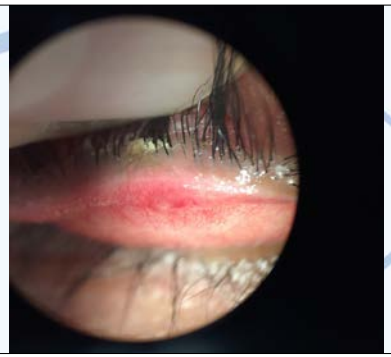
Case #4 - JJ (01/25/2019) 2 weeks later

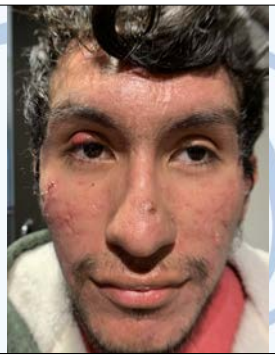
- VA cc: 20/20-2 OD, 20/20-1 OS
- Pupils: PERLA
- EOM: FROM OU
- VF: FTFC via CVF
- IOP: OD: 11 mmHg, OS: 10 mmHg with iCare rebound tonometry

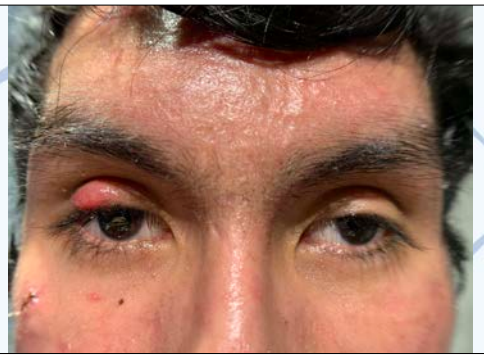
Case #4 - JJ (01/25/2019) 2 weeks later

- Slit Lamp Exam:
- Lid margin: 1+ anterior bleph OD, internal hordeolum OD, tr anterior bleph OS, telangiectasia OU
- Conjunctiva: tr injection OD, trace injection OS
- K: +NaFl staining with Tr SPK OU
- AC: quiet
- Everything else unremarkable









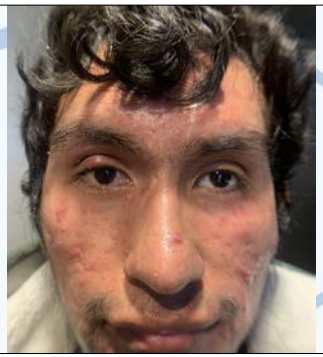
Diagnosis

- Internal hordeolum OD - +/- imp objectively despite subjective imp
- Staph bleph OU - still present and chronic
- Rosacea - poor management with dermatologist
- Acne - poor management with dermatologist

Plan

- Cont all current regimen
- Add 3 sessions of intense pulsed light therapy to control inflammatory component and help shrink hordeolum

After IPL #1



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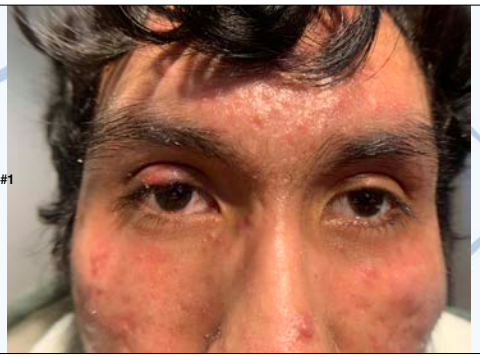
After IPL #1



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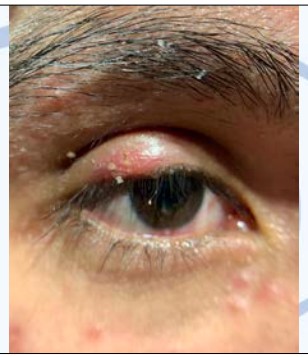
After IPL #1



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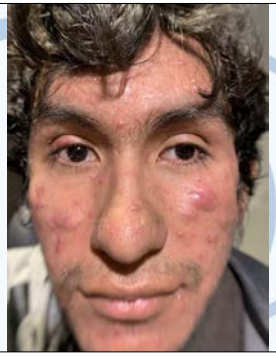
After IPL #2



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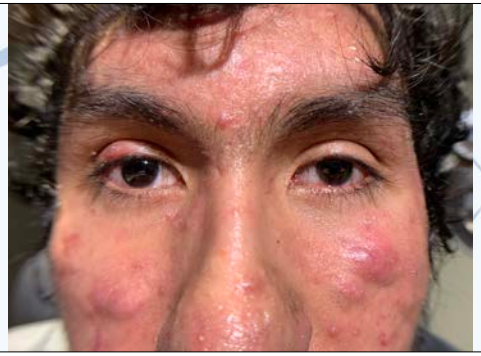
After IPL #2



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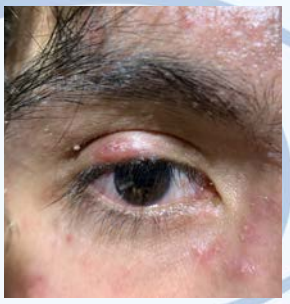
After IPL #2



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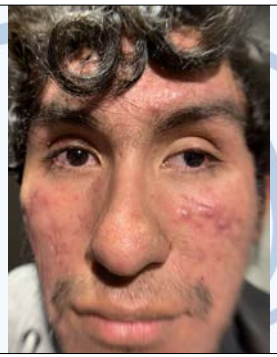
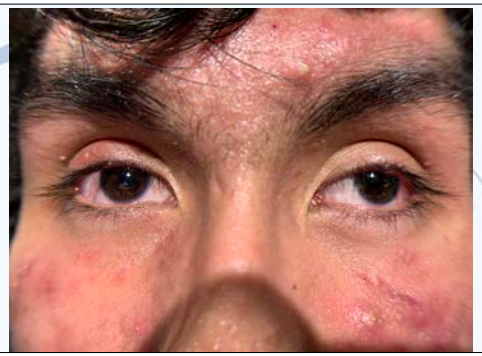
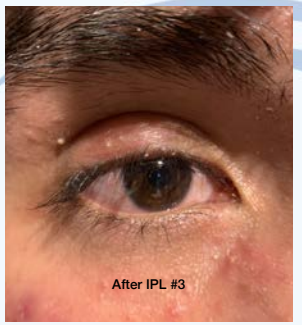


After IPL #3

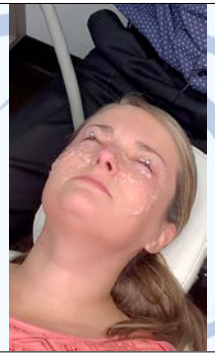




Intense Pulse Light (IPL)

- First developed by dermatology[1]
- Shown to reduced erythema and telangiectasia from rosacea[1]
- Now currently used for MGD and DED management[1]
- Proposed mechanisms of action:
  - Thrombosis of abnormal vessel
  - Heating and liquifying of meibum
  - Photomodulation
  - Eradicating demodex
- Typically 4-8 treatments 3-5 weeks apart
- Used here off-label for active hordeloum/chalazia to speed up healing process

1.Dell SJ. Intense pulsed light for evaporative dry eye disease. Clin Ophthalmol. 2017;11:1167-1173. Published 2017 Jun 20. doi:10.2147/OPTH.S139894



Take home points

- Don't have tunnel vision when it comes to treating your patients
- Treat the underlying cause of the issue
- Co-morbid diseases matter

Questions?

Case #5 - IL

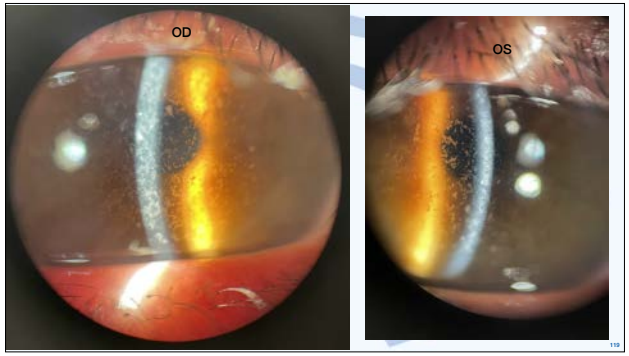
- CC/HPI: 35 yo HF % decreased VA with mild dryness and itching throughout the day.
- Ophthalmic meds: none
- Systemic meds: none
- FHx: none
- Allergies: NKDA

Case #5 - IL

- VA sc: 20/30- OD PHNI 20/25- OS PHNI
- Pupils: PERLA
- EOM: FROM OU
- VF: FTFC OS via CVF
- IOP: OD: 14 mmHg, OS: 15 mmHg with iCare rebound tonometry

Case #5 - DP

- Slit Lamp Exam:
- Lid margin: 1+ MGD OU
- K: 2+ granular bread crumb like opacities in stroma OU
- Post. Pole: hazy view due to cornea



Poll #5 - DDx?

- Stromal keratitis
- Macular dystrophy
- Corneal scars
- Granular dystrophy

Diagnosis

- Granular Corneal Dystrophy type 1 OU - cause of dec VA
- Dry Eye Syndrome OU - cause of underlying burning and itching

Plan

- Start Freshkote TID OU and RTC for dry eye workup

Stromal Corneal Dystrophies[1]

- 3 types
  - Macular (MCD) - affects peripheral and central, involves Descemet and endothelium, poor VA by 50's
  - Granular (GCD Type 1 and Type 2) - central cornea, more superficial Bowman's and anterior stroma. Type 2 have fewer deposits and hybrid b/w GCD and LCD. Decent VA until late stage
  - Lattice (LCD Type 1 and Type 2) Type 1 no systemic involvement, mostly involve central cornea. Type 2 systemic involvement (bilateral cranial and peripheral neuropathies), mostly involve peripheral cornea. May look like corneal nerves

1. Klintworth GK. Corneal dystrophies. Orphanet J Rare Dis. 2009;4:7. Published 2009 Feb 23. doi:10.1186/1750-1172-4-7

GCD Management

- Treat underlying issues -> RCE most common.
- Surgical intervention[1]
  - PTK
  - PK (but GCD will recur within 30 months)

1. Klintworth GK. Corneal dystrophies. Orphanet J Rare Dis. 2009;4:7. Published 2009 Feb 23. doi:10.1186/1750-1172-4-7

Questions?

Case #6 -RV

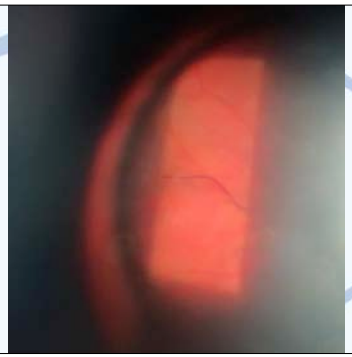
- CC/HPI: 86 CM present for 6 month ARMD f/u, noticed a new floater OU
- Ophthalmic meds: None
- POHx: CE OD with PCIOL, blepharoplasty, yag cap OD
- Meds and PMHx: Losartan (HTN), Atorvastatin (hyperlipidemia), Escitalopram (anxiety), finasteride and terazosin (BPH)
- Allergies: Sulfa and Penicillin

Case #6 -

- VA cc: 20/25+2 OD, 20/20+2 OS
- Pupils: PERLA
- EOM: FROM OU
- VF: FTFC OD/OS via CVF
- IOP: OD: 15 mmHg, OS: 15 mmHg with iCare rebound tonometry

Case #6 -RV

- Slit Lamp Exam:
- Lid margin: tr+ bleph OU, 2+ MGD OU, vascularization
- Conj: CCH
- L: PCIOL OD, 2-3+ NSC OS
- V: mild vitreous cells
- M: small drusen central with pigmentary change OU
- P: nasal retinal tear OD with floating vessel



Poll 6- DDx?

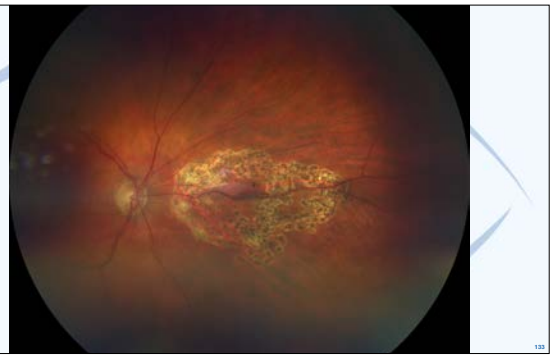
- Vitreous detachment OU
- Corneal scarring
- Limbal stem cell deficiency OU
- Contact lens keratopathy OU

Case #6 - RV 2 months follow up

- CC/HPI: Saw retina, they did retinopexy barrier laser for tear.
- VA cc: 20/30+2 OD PH 20/25-2, 20/20-2 OS
- Pupils: PERLA
- EOM: FROM OU
- VF: FTFC OD/OS via CVF
- IOP: OD: 13 mmHg, OS: 14 mmHg with iCare rebound tonometry

Case #6 - RV - 2 month f/u

- Slit Lamp Exam:
- Lid margin: tr+ bleph OU, 2+ MGD OU, vascularization
- Conj: CCH
- L: PCIOL OD, 2-3+ NSC OS
- M: small drusen central with pigmentary change OU
- P: nasal retinal tear OD with floating vessel, area of barrier retinal laser

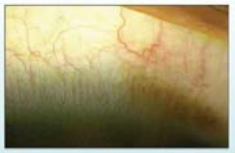


Diagnosis/Plan

- LSCD OD>OS - improved. Cont steroids.
- RTC 1 month
- Finally after 3 months since her initial visit, she was back to normal

Limbal Stem Cell Defi

- Limbal stem cells (LSCs) help
- LSCs keep the cornea clear a
  cornea[1]
- Palisades of Vogt houses the
- Direct damage to LSCs lead t
- Corneal epithelium is replace
  "waterfall" appearance[1]
- Neovascularization can also o



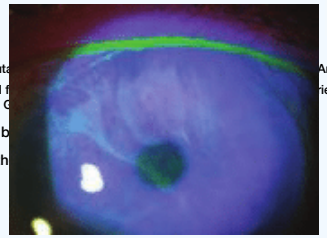
Palisades of Vogt

The stem cells of the corneal epithelium are situated at the limbus, nestled within the undulating folds of the Palisades of Vogt

1.Le Q, Xu J, Deng SX. The diagnosis of limbal stem cell deficiency. Ocul Surf. 2018;16(1):58-69. doi:10.1016/j.jtos.2017.11.002
2.https://www.anatomynote.com/human-anatomy/ophthalmology-eye-anatomy/palisades-of-vogt-chart/

LSCD

- 2 types
  - Primary: genetic muta Aniridia)
  - Secondary: external f ies, Stevens-Johnson syndrome, C
- Usually diagnosed b
- Use NaFl to show th



Deng, Sophie. (2009). Corneal Epithelial Stem Cell and Disease – Past, Present and Future. European Ophthalmic Review. 03. 82. 10.17925/EOR.2009.03.02.82.

LSCD Treaments

- Discontinue CTL wear
- Treat underlying dry eye disease
- Topical anti-inflammatory medications
- Amniotic Membrane Transplantation
- Surgical management via limbal stem transplantation from healthy eye or donor eye
- PKP with caveat

Questions?

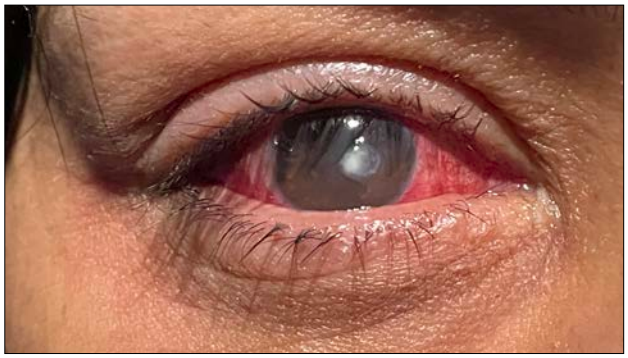
Case #7 - YB

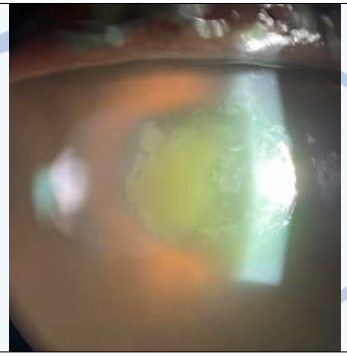
- 33 yo hispanic female
- "Severe eye pain, redness, tearing, light sensitivity" x 2 days OD
- H/o scleral contact lens wear for pellucid marginal degeneration

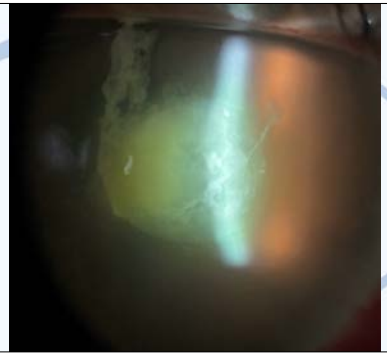
- VA sc OD: HM PHNI
- IOP normal

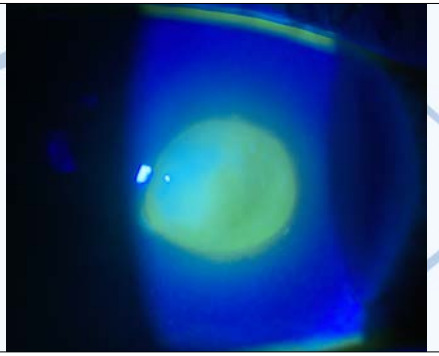
Case YB

- Slit Lamp Exam:
- Conj: 3+ injection OD 360 degrees
- K: 2.3 mm V x 3.4 mm H corneal ulcer with 3+ stromal keratitis
- A/C: 2+ fibrin, 3+ cells, 0.5 mm hypopyon
- Lens: no view
- Everything else unremarkable









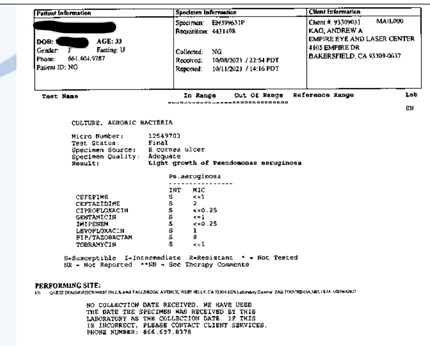
Diagnosis?

Presumed Pseudomonas Keratitis

Case YB

- Culture
- Start Besivance Q30mins (4th gen fluoroquinolone)
- Refer same day to UCLA for ulcer walk-in clinic
- Started fortified vancomycin (25mg/mL) and fortified tobramycin (14mg/mL) Q1H OD (both) next day at 3am

EMPIRE



Patient Information	Specimen Information	Client Information
[redacted]	Specimen: EN399631P	Client #: 93309031 MAIL000
DOB: [redacted] AGE: 33	Requisition: 4431498	KAO, ANDREW A
Gender: F Fasting: U	Collected: NG	EMPIRE EYE AND LASER CENTER
Phone: 661.404.9787	Received: 10/08/2021 / 22:54 PDT	4105 EMPIRE DR
Patient ID: NG	Reported: 10/11/2021 / 14:16 PDT	BAKERSFIELD, CA 93309-0637

Test Name In Range Out Of Range Reference Range Lab

EN

CULTURE, AEROBIC BACTERIA

Micro Number: 12549703
Test Status: Final
Specimen Source: R cornea ulcer
Specimen Quality: Adequate
Result: Light growth of Pseudomonas aeruginosa

	Ps.aeruginosa INT	MIC
CEFEPIME	S	<=1
CEFTAZIDIME	S	2
CIPROFLOXACIN	S	<=0.25
GENTAMICIN	S	<=1
IMIPENEM	S	<=0.25
LEVOFLOXACIN	S	1
PIP/TAZOBACTAM	S	8
TOBRAMYCIN	S	<=1

S=Susceptible I=Intermediate R=Resistant * = Not Tested
NR = Not Reported **NN = See Therapy Comments

PERFORMING SITE:

NO COLLECTION DATE RECEIVED. WE HAVE USED THE DATE THE SPECIMEN WAS RECEIVED BY THIS LABORATORY AS THE COLLECTION DATE. IF THIS IS INCORRECT, PLEASE CONTACT CLIENT SERVICES. PHONE NUMBER: 866.697.8378

Case YB

- 2 day follow up
- "Feels better"

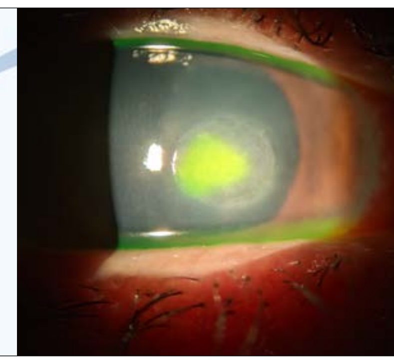
- VA sc OD: 20/320 PH 20/80
- IOP still good

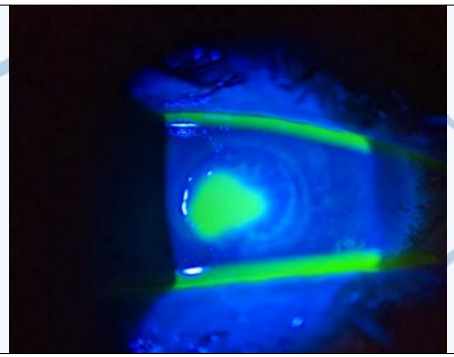
EMPIRE

Case YB

- Slit Lamp Exam:
- Conj: 3+ injection OD
- K: 1.8 mm V x 2 mm H corneal ulcer with 3+ stromal keratitis
- A/C: 1+ cells
- Iris: pharmacologically dilated
- Lens: no view

EMPIRE





Case YB

- Assessment
  - 1. Central corneal ulcer OD associated with Pseudomonas Keratitis
  - 2. Iritis secondary to #1
- Plan
  - 1. Cont F Vanco Q1H, F Tobra Q1H day and night
  - 2. cyclopentolate TID OD
- Consider ointment at nighttime if improved

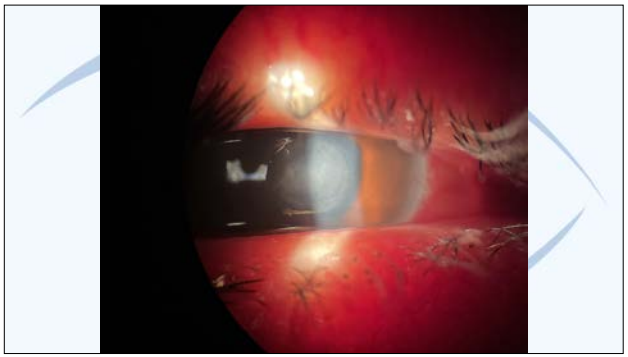
Case YB

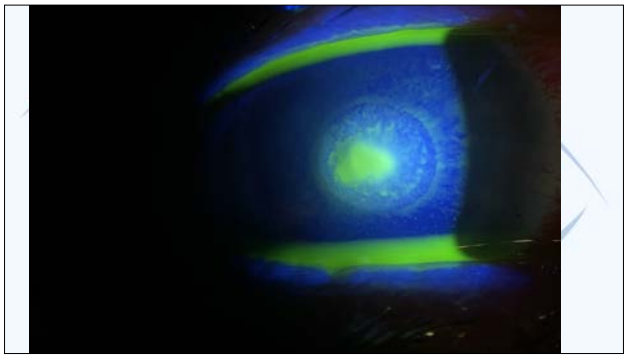
- 1 day follow up
- "Feels better", sleeps with shield on. "More mucous discharge since last visit"
- Taking F vancomycin/tobramycin Q1H day/night OD

- VA sc OD: 20/150 PH 20/80
- IOP still good

Case YB

- Slit Lamp Exam:
- Conj: 2+ injection OD, tr-1+ chemosis with white mucous discharge
- K: 1 mm V x 1.3 mm H corneal ulcer with ~3 mm infiltrates
- A/C: 1+ cells
- Iris: pharmacologically dilated
- Lens: clear





Case YB

- Assessment
  - 1. Central corneal ulcer OD - improved
  - 2. Iritis OD - same
- Plan
  - 1. Change F Vanco Q1H, F Tobra Q1H daytime only, add bacitracin ointment QHS OD
  - 2. cyclopentolate TID OD

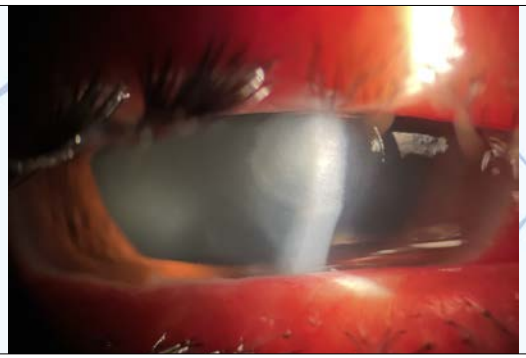
Case YB

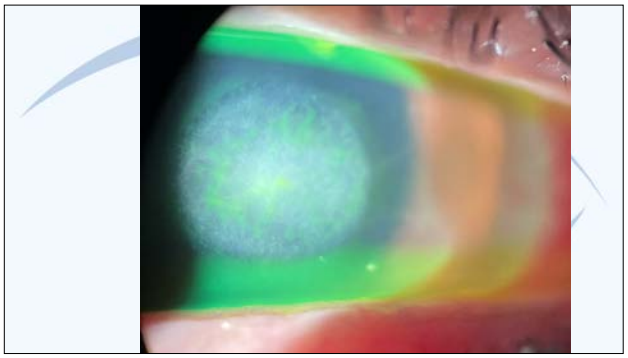
- 2 days follow up
- "Feels and sees better, still has discharge"
- Taking F vancomycin/tobramycin Q1H during day. No ointment

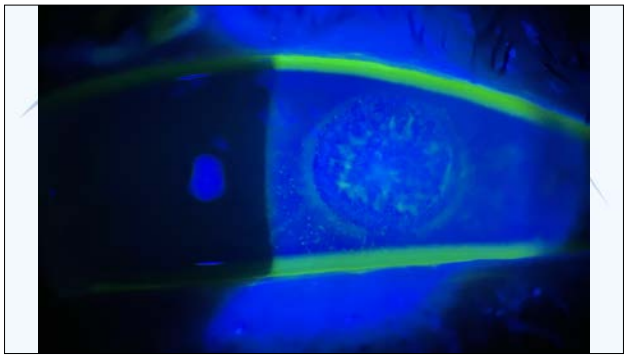
- VA sc OD: 20/150 PH 20/70
- IOP still good

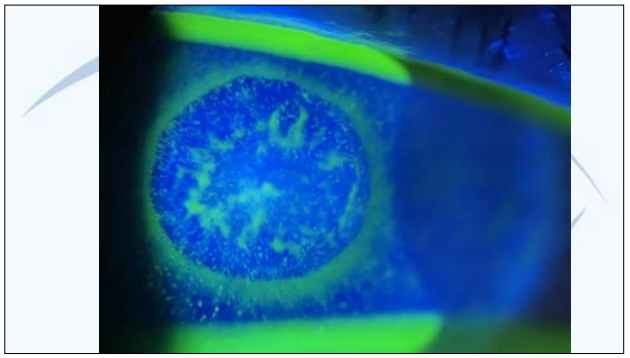
Case YB

- Slit Lamp Exam:
- Conj: 2+ injection OD, tr-1+ chemosis with white mucous discharge
- K: no epi defect, 2+ stromal keratitis nasal to ulcer, stromal haze surrounding ulcer
- A/C: 1+ pigment and 2+ cells
- Iris: pharmacologically dilated
- Lens: clear









Case YB

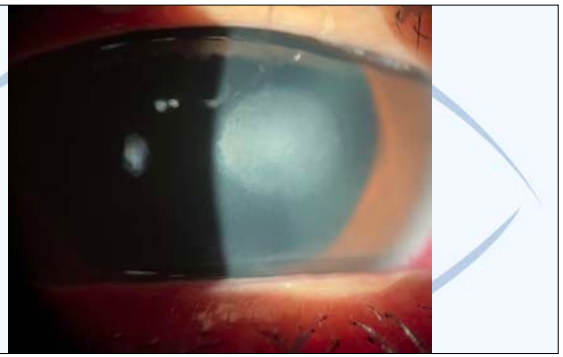
- Assessment:
  - 1. Central corneal ulcer OD - Improved, defect closed
  - 2. Iritis OD - same
- Plan
  - 1. Dec F vanco/F tobramycin Q2H OD, switch to erythromycin ointment
  - 2. Start Prednisolone acetate QID OD

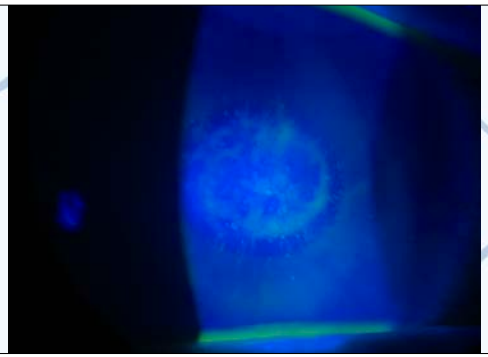
Case YB

- 2 days follow up
- "Feels and sees better, still has discharge"
- Ran out F vancomycin/tobramycin Q1H during day. PF QID OD
- VA sc OD: 20/200 PH 20/50
- IOP still good

Case YB

- Slit Lamp Exam:
- Conj: tr+ injection temporal, 2+ nasal injection, whitish mucous discharge
- K: no epi defect, 1+ stromal keratitis nasal to ulcer, stromal haze surrounding ulcer
- A/C: 1+ pigment and 1-2+ cells
- Iris: pharmacologically dilated
- Lens: clear





Case YB

- Assessment:
  - 1. Central corneal ulcer OD - Improved, less stromal keratitis
  - 2. Iritis OD - improved
- Plan
  - 1. D/c F vanco/F tobramycin Q2H OD, switch to moxifloxacin QID
  - 2. Cont cyclopentolate QD OD, and Prednisolone acetate QID OD

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Thank You!