CLINICAL CASES

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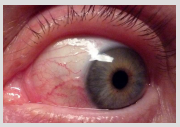
Midwest Optometric Society

1

CASE #1: WHAT LIES BENEATH

- 32yo wm, non contact lens wearer
- Presents with chronic "red eyes"os>od onset on and off several weeks



- 42yo wf, hx CL intol in past
- Presents with tender bump UL OS onset 2-3 days
- Hx chronic "styes" in past

2

CASE #1: DIAGNOSIS AND MGMT

- 32yo wm
- Diagnosis: Pingueculitis OS>OD
- Mgmt: Lotemax gel qid ou, rechk 7-10 days

- 42yo wf
- Diagnosis: Acute hordelum OS, Chronic chalazia OU
- Mgmt: Azith Zpak 250mg po, hot compresses, rechk 7-10 days

What is the chronic underlying cause for these pts problems?

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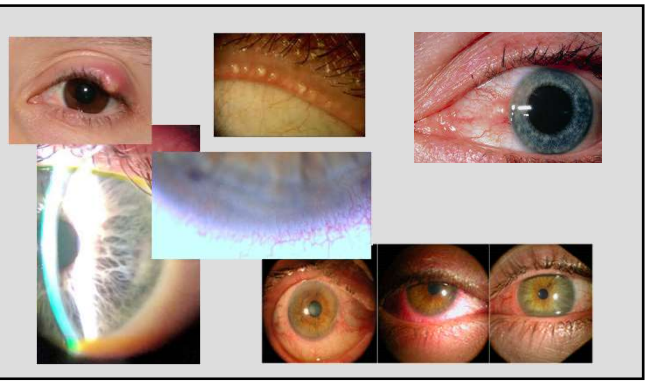

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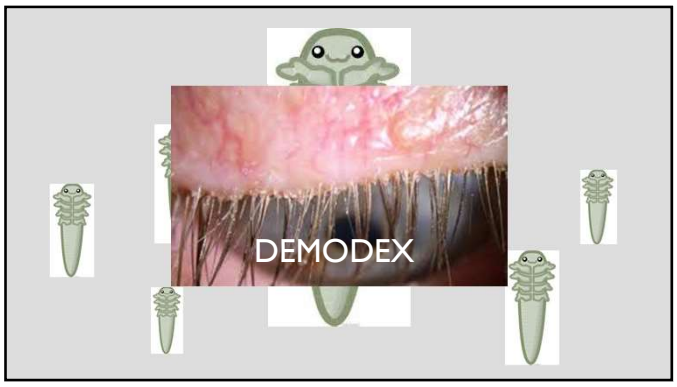


5

CLINICAL MANIFESTATIONS OF DEMODEX

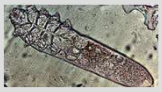
- MGD
- **Recurrent chalazia/hordeolum**
- Trichiasis/Madarosis
- Conjunctivitis/Keratoconjunctivitis
- Papillae
- Pterygium
- **Pingueculitis**
- Corneal neovascularization
- Corneal subepithelial infiltrates
- Ocular surface disease/LWE
- Rosacea
- Nonresponse to conventional blepharitis treaments
- Elevated tear cytokines

6

DEMODEX BLEPHARITIS

- Most common ectoparasite in humans
- Demodex Folliculorum/Demodex Brevis
- Normal skin fauna vs Demidicosis

- Mechanisms:
  - Mechanical
  - Bacterial
  - Hypersensitivity



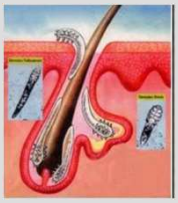
- Hallmark signs:

  Cylindrical dandruff, lid hyperemia/telangiectasia, skin distention, lash changes/loss

7

DEMODEX BLEPHARITIS
PREVALENCE

- Exposure can occur shortly after birth
- May be part of the normal skin fauna (hair follicles)
- Prevalence/Number mites per pt, increases w age[1,2]
  - <20yo – 13-20%
  - 25-50yo – 30-50%
  - 60yo – 84%
  - >70yo – 100%
- Mite density rises 6th decade of life(hygiene?)
- Gender?
- Presence of rosacea increases prevalence 9x

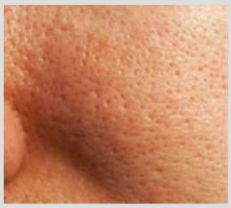


1 Horn et al, Demodex: Clinical cases and Diagnostic Protocol, Optometry and Vision Science, 2013
2 Stephenson, Blepharitis Diagnosis: Don't Forget Demodex, Review of Ophth, 2012

8

DEMODEX: HOME SWEET HOME

- Pilosebaceous glands (Folliculorum)
  - Located all over body
  - High concentration on face
- Sebaceous glands (Brevis)
  - Often located near mucous membranes



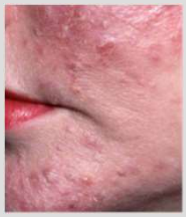
9

DEMODEX AND ROSACEA

- Strong correlation, 7-9x prevalence
- Triggers inflammatory reaction
- Mechanically blocks follicle
- Vector for various bacteria (bacillus oleronius)

Demodex? ⟷ Rosacea?

- Inflammatory response causing papulopustular rosacea

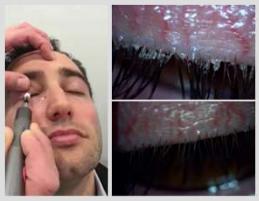


Correlation between Ocular Demodex Infestation and Serum Immunoreactivity to Bacillus Proteins with Facial Rosacea: Jianjing, Li et al, Ophthalmology, 2010 May; 117(5): 870-877, el doi: 10.1016/journ ophthal 2009

10

DEMODEX MANAGEMENT

- Remove cylindrical dandruff
- Kill the mites!
  - TTO
  - Starve them
- Maintenance



11

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12

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13

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Mgmt: Remove CD (Microblepharo exfoliation)
Cliradex (TTO) to lid margins and facial area qhs ou
F/u 6 weeks to eval and discuss maintenance plan

14

CASE #2: UNEXPLAINED VISION LOSS

- 50yo wf c/o increasing blur with CL's last 2 mos D and N, feels like squinting
- History: PV2 Multi OD -725/low OS -950/hi
  15-17 hrs/day WT, replaces every 2-2 1/2 mos
- BCVA: OD 20/40 PH 20/30- OS 20/50+ PH 20/30-
- SLE: Central cornea clear, mild limbal neov, TBUT 5 sec, trace conj liss green ou
- Fundus/Mac(undilated): no obvious media/fundus pathology (PSC, ERM, CME…)
- Last visit 11 mos: OD 20/30+ OD 20/30+ OU 20/20- SLE: Trace NS OU

15

CASE #2: INITIAL THOUGHTS

- Corneal irregularity?
  CL overwear(edema), keratitis, keratoconus
- Corneal dystrophy/degeneration?
- Cataract?
- Subtle retinal conditions?
  ERM, ICSC, lamellar hole…
- Neurological?

16

CASE#2: DIAGNOSIS/MGMT?

PLAN

- Diag: Probable corneal edema, secondary to CL overwear
- Mgmt: "Discussed" d/c CL wear, "agreed" to limit CL wear to <7-8hrs/day
- Start Lotemax gel tid ou, rechk 2 weeks

2 WK F/U

- Patient reports no improvement in VA
- BCVA: OD 20/40 OS 20/50 REF: myopic shift OS>OD
- SLE: Cornea? Topography? Fundus(dilated)? NORMAL???

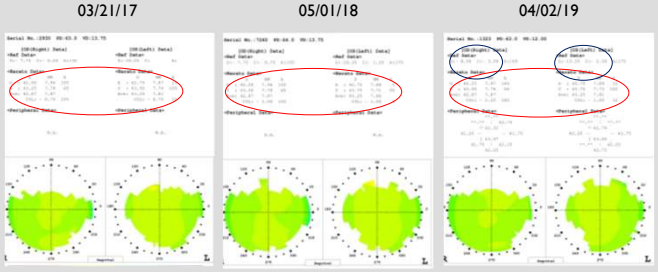
17

CASE #2: THOUGHTS?

- Topography
- Visual Field
- Macular OCT
- Imaging?

- Other possibilities?

18

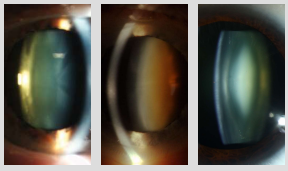


19

LENS EVALUATION

- Subtle, but cloudy white nuclear center
- Minimal effect on fundus view?

Diagnosis: Milky Nuclear Cataract



20

DIAGNOSIS: MILKY NUCLEAR CATARACT

- Different appearance than brunescence or cortical
- Significant glare, halo, blurred vision, monoc diplopia

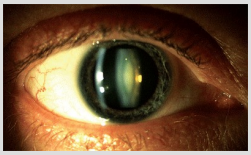
Key findings:

- Opalescent or "milky" white nucleus
- Dark central reflex on retinoscopy
- Slit beam bowing on retinal view
- Myopic shift 1-6 Diopters
- Clear internal view?

21

MILKY NUCLEAR CATARACT CAUSES?

- High myopia
- Younger middle-aged, males?
- Bilateral vs unilateral?
- Post-lasik?
- Not associated w any medical conditions
- Not associated w any medication use



22

CASE #2: NEW MGMT PLAN

- Diagnosis: Milky Nuclear Cataract
- Mgmt: Temporarily switch to SV Cl's
  Consult surgeon for cataract removal

23

CASE #3: GONNA TAKE MY HORSE TO THE OLD TOWN ROAD…CRY 'TIL I CAN'T NO MORE

- 48 year old WF Daily wear SCL
- Reports severe burning tearing, redness ou. Increasing CL intolerance. Lives on farm, raises horses
- Ocular hx: RCE OD, EBMD OU,
  Previous diagnosis Dry Eye disease, Allergic conj ou
- Systemic hx: Reports being testing for unknown autoimmune condition
- Meds: Zyrtec, Flonase, Pazeo

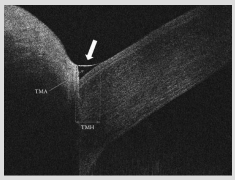
24

CLINICAL DATA

- BCVA: 20/20 OD 20/25+ OS (-650 D)

SLE:

- TBUT: 3-4 sec ou
- Shirmer: 3-5 mm ou, low meniscus ou
- NaFL: 2+ corneal staining ou
- Lissamine green: 2-3+ conjunctival stain, +LWE



25

FAILED TREATMENT OPTIONS

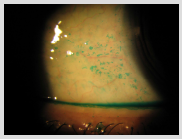
- Patient reports seen 2 OD's and PCP over previous 5 years
- Failed treatment options:

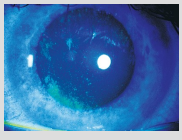
Restasis (1 yr)
Xiidra ($$$)
Azasite/Muro (1-2 mos)
Lid scrubs
Art Tears
Pazeo (current)
Omega-3 supple (2 yr)
Punctal Plugs (6 mos)
Warm compresses

26

WHAT NOW?

- Step back and reevaluate
- Consider value of previous treatment options
- Length of treatment
- Compliance?
- Other options?



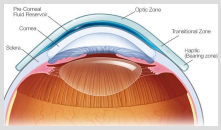


27

SCLERAL CONTACT LENSES

Advantages:

- Bathes the cornea in saline solution throughout the day
- Immediate symptomatic relief
- Creates a shield against dust particles/allergens
- Aspheric MF design alleviates need for glasses
- Motivated CL wearer



28

SCLERAL CONTACT LENSES

Disadvantages:

- Cost to patient
- New modality and training
- Does not address potential autoimmune/inflammatory component

29

CASE #3: MANAGEMENT

- Restart Restasis bid ou
- Add FML 0.1% susp bid ou x 1 mos
- Refresh gel qhs ou x 1 mos
- Continue Pazeo qd ou, (add Alrex prn during peak seasons)
- Rechk 1 mos: Decreased injection, minimal dye staining ou

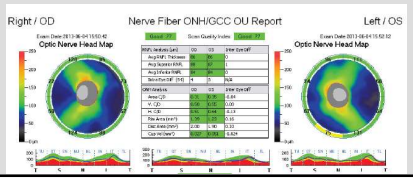
  Refit patient with Acculens Scleral 15mm diam
- Results: BCVA 20/20 ou, Patient Happy!

30

CASE #4: "DO YOU SLEEP WITH YOUR SOCKS ON?"

- 55yo wf
- Ocular hx: unremark
- Systemic hx: Hypothyroid
- Meds: Synthroid
- BCVA: -575 OD -525 OS 20/20 OU
- SLE: WNL, Pachy: 535 OU
- IOP(DCT) 14-17 (over 4 visits)

31



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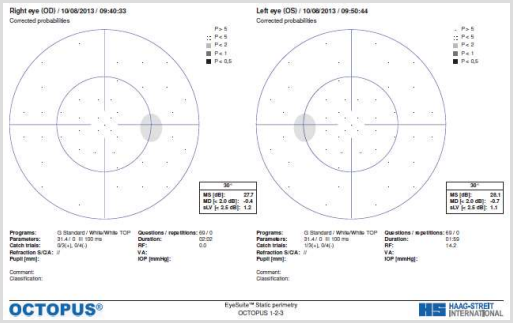

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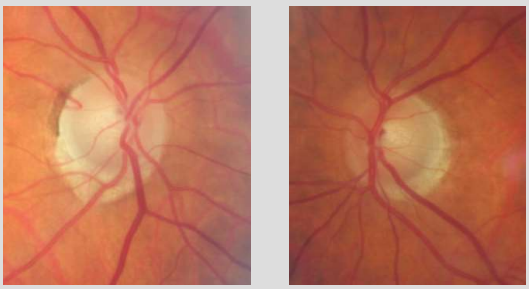

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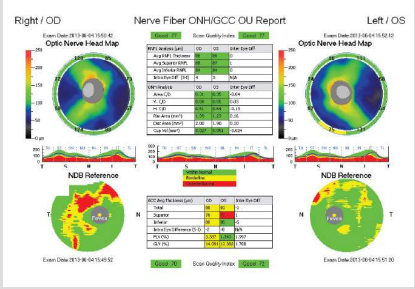


35

CASE #4: ADDITONAL INFO

- History low BP 95/55 RAS, p56
- Always "cold hands, cold feet"
- "I wear socks to bed"
- Low OPA OD 0.8 OS 0.7
- OPP/DPP?

36

OCULAR PERFUSION PRESSURE

)cular Perfusion Pressure(MOPP)

2/3 [Diastolic Perfusion Pressure (DPP)

DPP = DBP - IOP

37

TABLE. STUDIES DEMONSTRATING AN ASSOCIATION OF LOW PERFUSION PRESSURE WITH OAG

Survey/Study	Design	Finding
Baltimore Eye Survey (Tielsch et al 1995)[2]	Population-based prevalence survey	DOPP < 30 mm Hg associated with a six-fold increase in OAG prevalence
Egna-Neumarkt study (Bonomi et al 2000)[3]	Population-based prevalence survey	DOPP < 68 mm Hg associated with a threefold increase in OAG prevalence
Proyecto VER (Quigley et al 2001)[4]	Population-based prevalence survey	DOPP < 50 mm Hg associated with a four-fold increase in OAG prevalence
The Los Angeles Latino Eye Study (LALES; Memarzadeh et al 2010)[5]	Population-based prevalence survey	SOPP ≤ 80 mm Hg, DOPP ≤ 40 mm Hg, or mean OPP ≤ 50 mm Hg associated with a 2.5-, 1.9-, and 3.6-fold increase, respectively, in OAG prevalence
The Barbados Eye Study (Leske et al 2008)[7]	Population-based longitudinal study	SOPP < 101 mm Hg, DOPP <55 mm Hg, or mean OPP < 42 mm Hg associated with a 2.6-, 3.2-, and 3.1-fold increased risk, respectively, of developing glaucoma at 4 years

Abbreviations: OAG, open-angle glaucoma; DOPP, diastolic ocular perfusion pressure; SOPP, systolic ocular perfusion pressure; OPP, ocular perfusion pressure.

38

CASE #4: DIAGNOSIS AND MGMT

Diagnosis: Normal Tension Glaucoma OU

Plan:

- Treament Alphagan P 0.1 bid ou
- IOP 13-15 OU
- PA(1 yr) OD 2.8 OS 2.3
- Other considerations?

39

NTG: "PROCEED WITH CAUTION"

Don't put all your eggs in the c/d basket

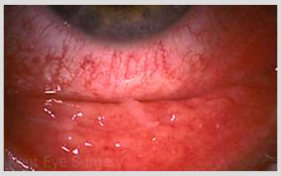
-OCT/GCC, asymmetric pp atrophy, NFL, Disc hemes

- NTG, ask the right questions
  - -Low BP, pulse, nocturnal readings
  - -Meds, time of day
  - -Hi myopia, hx migraines
  - -Asian, women, petite
  - -Sleep Apnea
  - -"Cold hands, cold feet"
  - -Use the NTG equation as a risk guide(OPP/DPP)

40

CASE #5: THE STUBBORN RED EYE

- History: 15yo wf presents w red eye OD onset 2 weeks
  - Reports started after getting eyelash glue in eye
  - Mild mucous discharge, swollen
  - Diag w conjunctivitis at Urgent Care/tobradex qid od
  - Initial improvement, recurred after d/c gtts
- Clinical presentation:
  - Conj injection 2+ OD, neg keratitis
  - Mild inf pannus, inf limbus
  - Grade 1-2+ mucopurulent discharge
  - Follicular? rxn Gr 3 OD, LL>UL, neg OS
  - PAN inconclusive?



41

THOUGHTS? ADDITIONAL QUESTIONS?

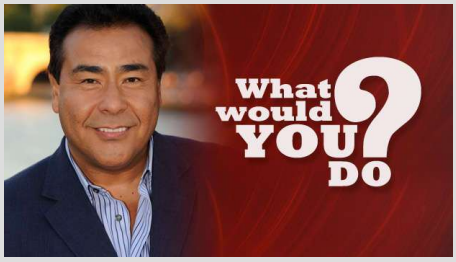
Viral?
- Non-responsive to antibiotic
- Slight improvement w steroid comp
- Lingering after d/c gtts
- PAN?
- Hx cold/flu? Other illness?
- Unilateral?
- Follicular rxn?

Other?

Toxic?
- Tobramycin?
- Course of initial improve to recurrence
- Unilateral
- Eyelash glue?

Allergic?
- Slight improvement w steroid
- Unilateral?
- Itching?

42



43

TREATMENT

- Start FML qid OD
- Artificial tears qid OD
- Return to clinic 5-7 days

1 Week Follow-Up
- Initial improvement 1st few days
- Now seems WORSE!!?
- NOW WHAT?

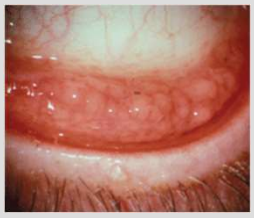
44

CHRONIC FOLLICULAR CONJUNCTIVITIS
DIFFERENTIAL DIAGNOSIS

Toxic Follicular Conjunctivitis
- Identifying offending agent (eyelash glue)
- Improvement after removal

Molluscum Contagiosum
- Viral infection
- Lesions often near eyelid

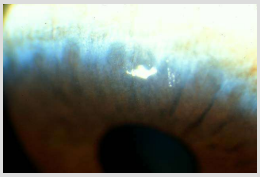
Chlamydial Conjunctivitis
- Trachoma
- Inclusion Conjunctivitis



45

TRACHOMA

Herbert's Pits

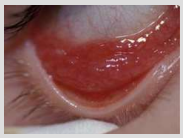


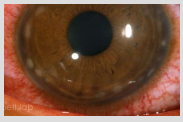
Conjunctival Scarring

46

ADULT INCLUSION CONJUNCTIVITIS

- Most common cause of ocular chlamydial inf
- Sexually transmitted systemic disease
- Presents as red, mucopurulent conjunctivitis
- Limbal pannus, peripheral SEI's
- Large follicular rxn inf>sup
- Small non-tender PAN
- Often unilateral initially
- Conjunctival scrapings poor yield





Treatment
- Doxycycline 100mg bid x 1-3 wks, Azithromycin 1g dose, Erythro 500mg qid x 7 days

47

FURTHER CONSIDERATIONS

48

THANK YOU

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49