CLINICAL CASES

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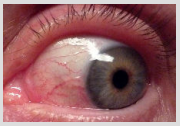
CASE #1: WHAT LIES BENEATH

- 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

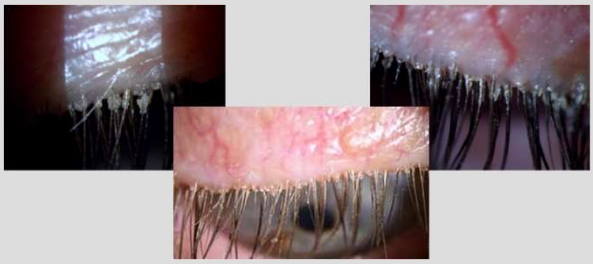
CASE #1: DIAGNOSIS AND MGMT

- 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?

DEMODEX BLEPHARITIS



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

DEMODEX BLEPHARITIS
PREVALENCE

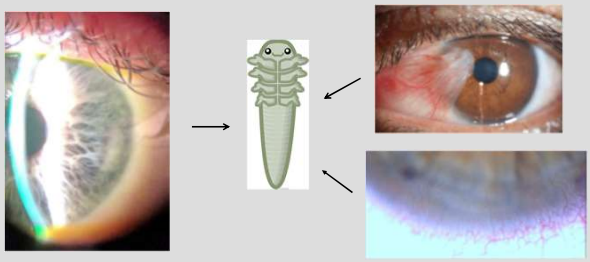
- Exposure can occur shortly after birth
- May be part of the normal skin fauna (hair follicles)
- Prevalence/Number mites per pt, increases w age[1,2]
  - <20yo – 13-20%
  - 25-50yo – 30-50%
  - 60yo – 84%
  - >70yo – 100%
- Mite density rises 6th decade of life(hygiene?)
- Gender?
- Presence of rosacea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

1 Hom 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

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

DEMODEX MITES CAUSE OR EXACERBATE MANY LID MARGIN & OCULAR SURFACE DISEASES



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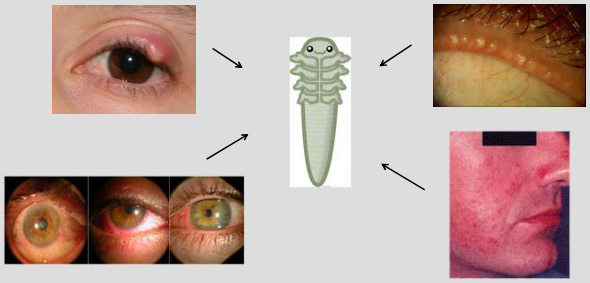
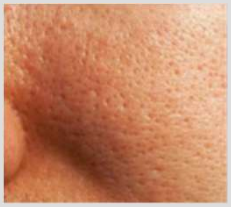


DEMODEX: HOME SWEET HOME

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

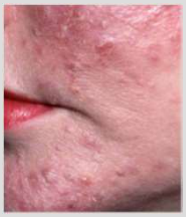


DEMODEX AND ROSACEA

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

Demodex? ⟷ Rosacea?

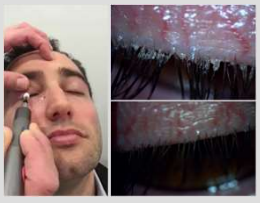
- Inflammatory response causing papulopustular rosacea



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/jouro ophthal 2009

DEMODEX MANAGEMENT

- Pre-treatment grading
- Remove cylindrical dandruff
- Kill the mites!
  - TTO/meds? (Ivermectin)
  - Starve them
- Maintenance



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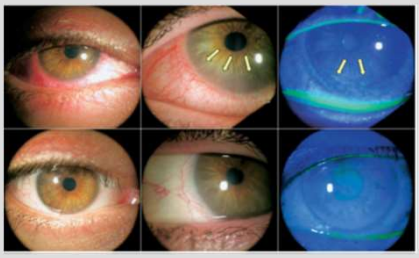
Corneal Manifestations of Ocular *Demodex* Infestation

AHMAD KHEIRKHAH, VICTORIA CASAS, WEI LI, VADREVU K. RAJU, AND SCHEFFER C. G. TSENG



Pre TTO Tx

Post TTO Tx

DEMODEX MANAGEMENT

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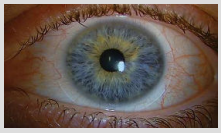
Mgmt: Remove CD (Microblepharo exfoliation)
Cliradex (TTO) to lid margins and facial area qhs ou
F/u 6 weeks to eval and discuss maintenance plan

CASE #3: 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

CASE #3: INITIAL THOUGHTS

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



CASE#3: DIAGNOSIS/MGMT?

- 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

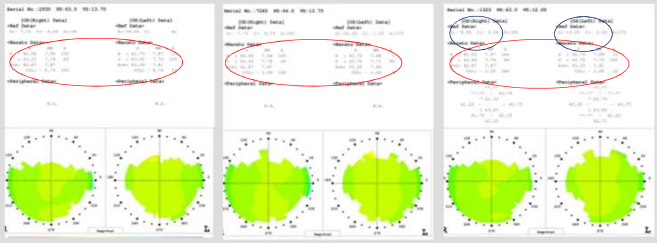
- 2 Week F/U: Patient reports no improvement in VA
- BCVA OD 20/40 OS 20/40 myopic shift OS>OD
- SLE: Cornea? Topography? Fundus(dilated)? NORMAL???

CASE #3: THOUGHTS?

- Topography
- Visual Field
- Macular OCT
- Imaging?

- Other possibilities?

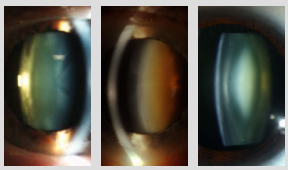
03/21/17 05/01/18 04/02/19



LENS EVALUATION

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

- Diagnosis: Milky Nuclear Cataract OU

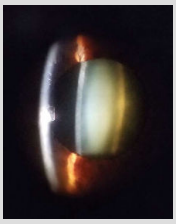


DIAGNOSIS: MILKY NUCLEAR CATARACT

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

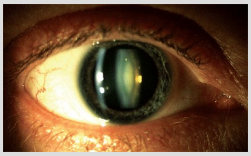
Key findings:

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



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

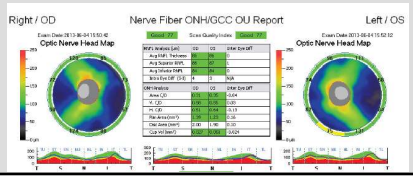


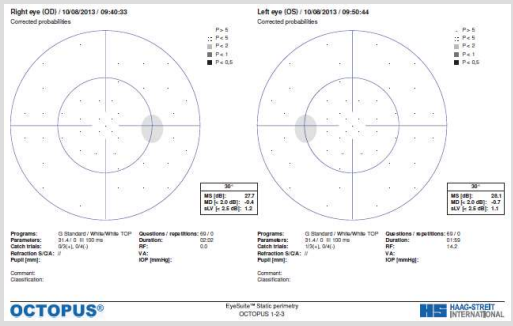
CASE #3: NEW MGMT PLAN

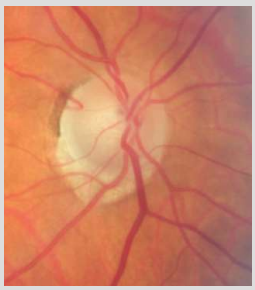
- Diagnosis: Milky Nuclear Cataract
- Mgmt: Temporarily switch to SV CI's
  Consult surgeon for cataract removal

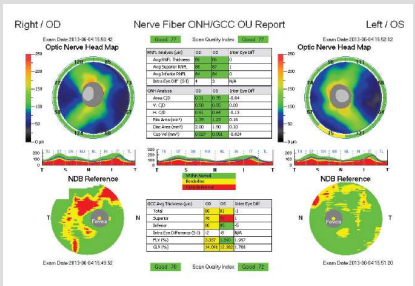
CASE #5: "DO YOU SLEEP WITH YOUR SOCKS ON?"

- 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)









CASE #5: 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?

OCULAR PERFUSION PRESSURE

Mean Ocular Perfusion Pressure(MOPP)
MOPP = 2/3 [DBP + 1/3(SBP – DBP)] – IOP

Diastolic Perfusion Pressure(DPP)
DPP = DBP - IOP

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.

CASE #5: 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?

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)