UVEITIS

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FINANCIAL DISCLOSURES- MARK SCHAEFFER, OD

FINANCIAL DISCLOSURES- ERIC SCHMIDT, OD FAAO

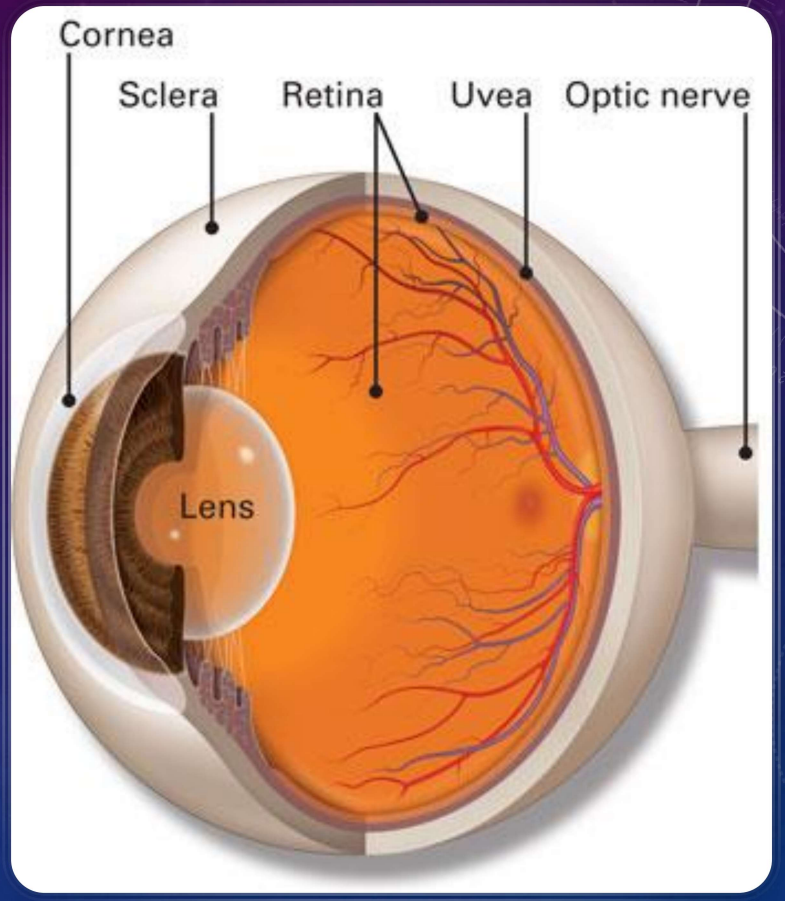
- Dr Schmidt is a consultant or advisor for the following companies:
  - Allergan
  - Aerie
  - Carl Zeiss
  - Eyenovia
  - Kala Pharmaceuticals
  - Ocular Therapeutix
  - Sun Pharmaceuticals
  - Tarsus
  - Visus Therapeutics

OBJECTIVES

- Discuss uveitis causes, prevalence, and considerations
- Review treatment plans including lab work
- Present cases featuring uveitis

WHAT IS UVEITIS

- Inflammation of the Uveal tract
  - Iris
  - Ciliary Body
  - Choroid



HOW DO YOU CLASSIFY YOUR UVEITIDES?

- Who: Patient demographics
- What: Type of inflammatory process, duration, other considerations
- Where: Location of inflammation
- Why: Etiology of inflammation

TYPES OF UVEITIS- LOCATION / ANATOMIC SYSTEM

- Anterior
- Intermediate
- Posterior
- Panuveitis

ETIOLOGY OF INFLAMMATION

- Traumatic
- Idiopathic
- Infectious
- Non-infectious

IUSG CLASSIFICATION SYSTEM

- Interantional Uveitis Study Group (2008) released new guidelines for classification:
- 3 main types based on etiology of inflammation:
    1. Infectious
    2. Non-infectious
        1. With Systemic Association
        2. Without Systemic Association
    3. Masquerade
        1. Neoplastic
        2. Non-Neoplastic

CLINICAL CONSIDERATIONS

- Age
- Gender
- Race
- Family History
- Sexual Habits
- Geographic / Social / Travel History
- Other lifestyle factors

SOCIOECONOMIC IMPACT

Age of onset in patients is typically in 3rd and 4th decade of life

- High active working potential
- Often debilitating for these patients

Increase in cases roughly 3x over 10 year period compared to 40 years ago

- Roughly 52.4/100k
- Affects over 280k people per year
- Causes 3 – 10 % of blindness

What does mean to your patients?

- Will have even greater impact moving forward

CLINICAL PRESENTATION – ANTERIOR UVEITIS

Symptoms

- Pain
- Light Sensitivity
- Redness
- Blurred vision

Signs

- Anterior Chamber reaction
  - Cells
  - Flare
- Circumlimbal flush
- Pupil reactivity?
- Keratic Precipitates
- Nodules
- Posterior synechiae
- Hypopyon

CLINICAL PRESENTATION – INTERMEDIATE UVEITIS

Symptoms

- Blurred Vision
- Floaters

Signs

- Snowbanking / snowballing
- Cells in anterior vitreous

CLINICAL PRESENTATION – POSTERIOR UVEITIS

Symptoms

- Floaters
- Decreased vision

Signs

- Vitritis – “Headlights in the fog”
- Retinitis
- Choroiditis
- Vasculitis
- Retinal detachments
- ON edema

LAB WORKUPS

WHEN DO YOU ORDER LABS?

WHAT DO YOU TELL THE PATIENT?

HOW DO YOU CO-MANAGE WITH SUB-SPECIALTIES?

WHEN SHOULD LAB TESTS BE ORDERED?

- Bilateral cases
- Atypical age group
- Recurrent uveitis
- Recalcitrant cases
- Hyperacute cases
- Worsens with tapering
- VA worsening
- Immunosuppressed px

WHAT LABS TO ORDER?

- *Complete Blood Count with differential (CBC with diff)
- *Erythrocyte Sedimentation Rate (ESR)
- *C-Reactive Protein (CRP)
- *Anti-Nuclear Antibody (ANA)
- *Angiotensin Converting Enzyme (ACE)
- Chest X-ray (CXR)
- Anti-neutrophil Cytoplasmic Antibody (ANCA)
- *Venereal Disease Research Labratory (VDRL) / Rapid Plasma Reagin (RPR)
- *Fluorescent Treponema Antibody Absorption Test (FTA-Abs)
- *Purified Protein Derivative (PPD) or Mantaux Test
- Enzyme Linked Immunosorbent Assay (ELISA) or Immunofluorescence Assay (IFA)
- Western blot
- *Rheumatoid Factor (RF)
- *Human Leukocyte Antigen (HLA)
- CD4 count

COMMON SYSTEMIC INVOLVEMENT*

- HLA-B27 Seronegative Spondylarthropothies
  - Ankylosing spondylitis
  - Reactive Arthritis
  - Psoriatic Arthritis
  - Crohn's Disease/ Ulcerative Colitis
- Rheumatoid Arthritis
- Systemic Lupus Erythematosus
- Sarcoidosis
- Tuberculosis
- Toxoplasmosis
- Syphilis
- Lyme Disease
- Herpes Simplex / Zoster

SERONEGATIVE SPONDYLARTHROPATHIES

Ankylosing Spondylitis

- M>>>>>>F
- 20s – 40s
- Lower back pain, can have pain in hips and shoulders
- Narrowing of sacroiliac joint on X-ray

Reactive Arthritis

- Uveitis, enteric infection, spondylarthropathy affecting lower extremities
- Don't give steroids!

Inflammatory Bowel Syndrome (Ulcerative Colitis and Crohn's)

- Can have X-rays similar to Ankylosing spondylitis
- Mild tissue swelling on radiograph

RHEUMATOID ARTHRITIS

Persistent symmetric polyarthritis (Synovitis) = hallmark symptom

- Destruction of synovial membrane- leads to hyperplastic, hyperactive joints
- Differentiates this from other arthritises

Genetic component

- 50% to develop

Prognosis

- 40% disabled within 10 years
- Mortality rate 2.5x greater than normal patients

Testing

- Rheumatoid Factor (RF)
- Anticyclic citrullinated peptide antibody (anti-CCP)

SYSTEMIC LUPUS ERYTHEMATOSUS

Chronic, microvascular inflammatory condition

- Generation of autoantibodies
- Defect in cell apoptosis signal
- Increased cell death

Epidemiology

- 5.1 per 10,000 (number on the rise)
- Average ~6 years from first symptoms to diagnosis

Patient Profile

- F>>>M (7:1 and 11:1 during child-bearing years)
- Affects minorities more

Prognosis

- Had 50% mortality rate previous, has decreased to 10%

Diagnostic Testing

- Anti-Nuclear Antibody (ANA)

SARCOIDOSIS

Noncaseating granulomas throughout body

Affects females slightly greater than males, 3X more likely to develop in AA patients

Lab Work

- Angiotensin converting enzyme
- Chest X-ray

SARCOIDOSIS OCULAR INVOLVEMENT

Anterior

- Conjunctivitis
- Episcleritis / Scleritis
- Uveitis
  - Mutton-fat KPs
  - Large Cells
  - Busacca and Koeppe nodules
  - Posterior synechiae
  - Increased IOP

Posterior

- Vitritis
- Periphlebitis
- Dalen-Fuchs Nodules
- Cystoid Macular Edema
- Optic Nerve granuloma

TUBERCULOSIS

- Active infection of mycobacterium tuberculosis
  - Airborne transmission
  - Humans only reservoir for M. Tuberculosis
- Caseating granulomas
- Purified Protein Derivative or Mantaux test

TUBERCULOSIS OCULAR INVOLVEMENT

Anterior

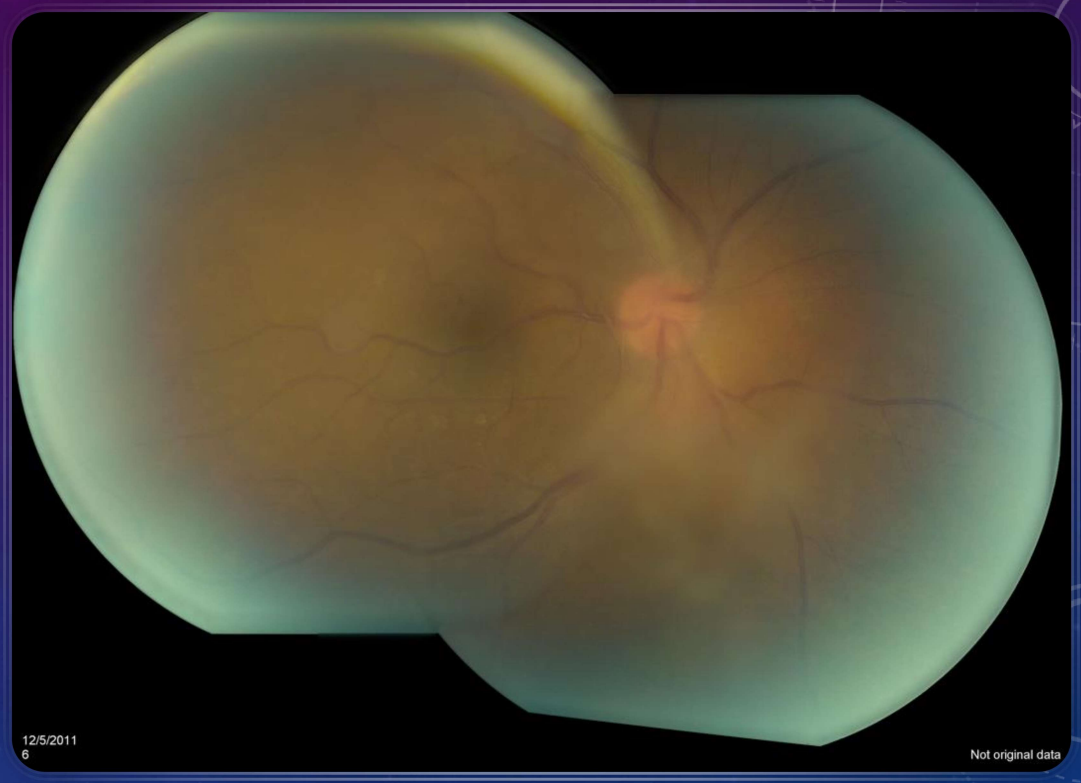
- Phylectenular keratoconjunctivitis
- Interstitial Keratitis
- Scleritis
- Uveitis

Posterior

- Retinal vasculitis
- Retinal neovascularization
- Association with Eales' Disease
  - Venous thrombosis
  - Retinal detachment

TOXOPLASMOSIS

- Infection of parasite Toxoplasma gondii
- Immunocompetent usually asymptomatic
- Fever, malaise, night sweats, myalgias
- 50% CNS involvement in immunocompromised (not AIDS)
- Brain involvement most common with AIDS patients
- Sabin-Feldman is diagnostic test
- Ocular symptoms:
  - Classic “Headlights in the fog” vitritis



SYPHILIS

Infection of spirochete Treponema pallidum

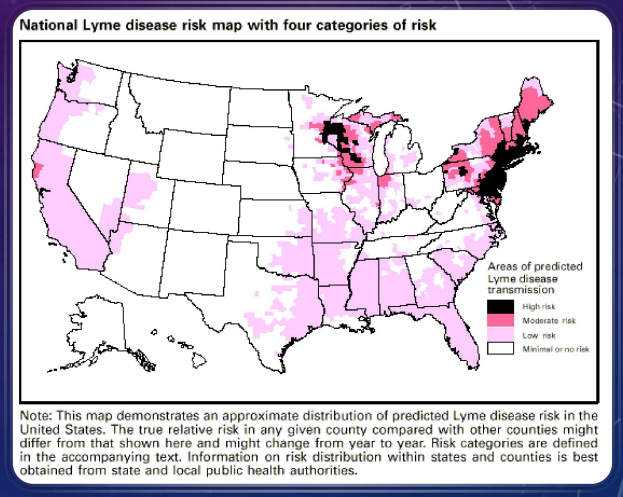
- Transmissible through sexual contact, mother-fetus in utero, blood transfusion, breaks in skin touching active lesions
- Testing: VDRL/RPR, FTA-Abs

Stages

- Primary (10-90d): infections occurs quickly
- Secondary (4-5 weeks post primary lesion)
  - Fever, malaise, myalgia, PAN, rash
  - 30% involvement in CNS
- Latent (5-10 years): seropositive but asymptomatic
- Tertiary: higher risk of cardiovascular issues
  - Argyll-Robertson pupil

LYME DISEASE

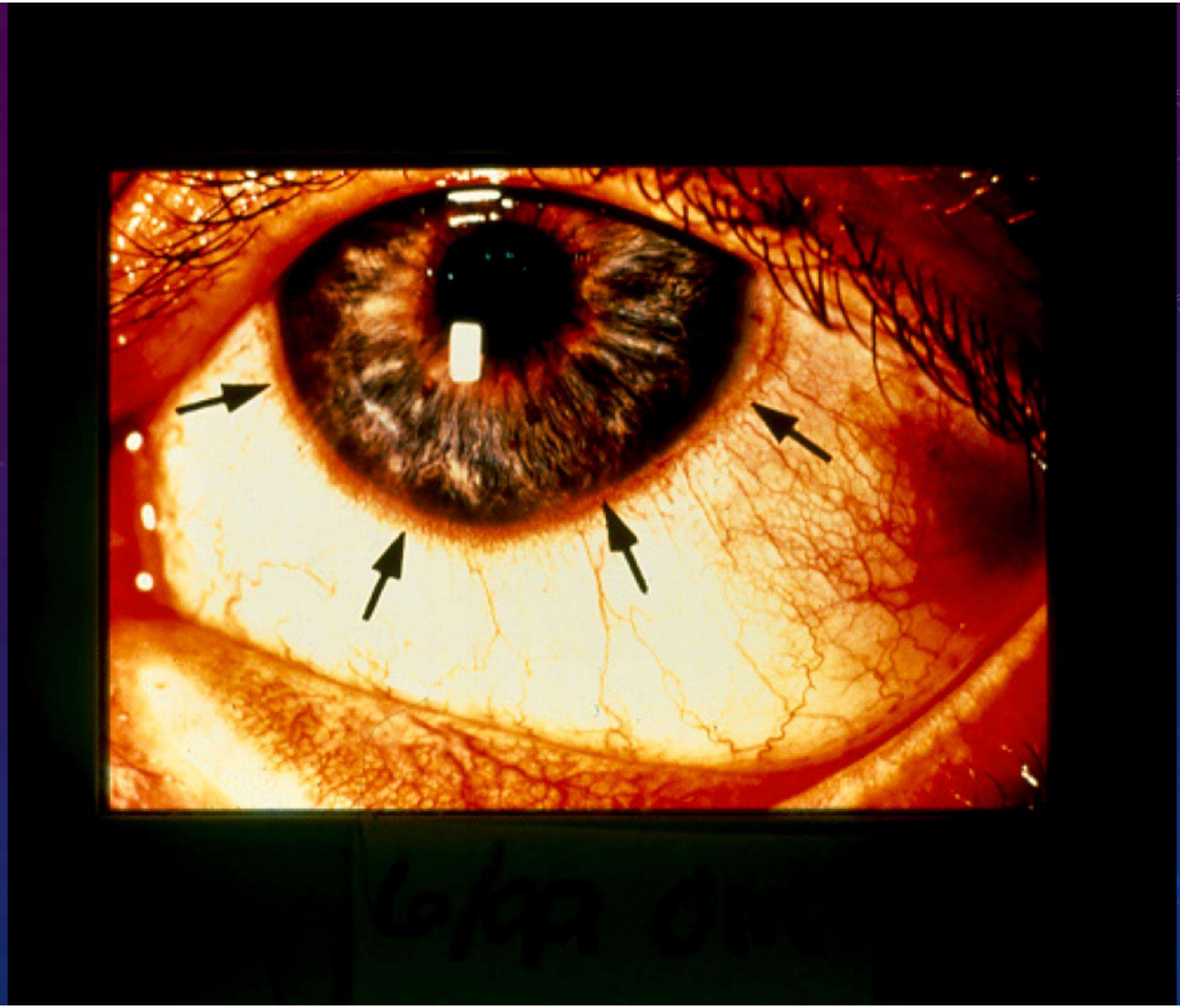
- Systemic infection from spirochete Borrelia burgdorferi (deer ticks)
- Geographic pattern
- Disease progression
  - Stage 1- Seropositive / Asymptomatic
  - Stage 2- local inflammation / erythema migrans
  - Stage 3- production of cytokines and immune complexes (mimics autoimmune response



CLINICAL CASES

THE CASE OF THE "REGULAR IRITIS"

- 48 y/o HM, HBP
- Cc: sore OD x 3 days
- No d/c, was not complaining of redness
- (+) photophobia
- VA OD 20/25, OS 20/20
- IOP – 18OD, 16 OS
- SLE- as shown



“REGULAR CASE”

- How would you treat this
  1. Prednisolone acetate 1% QID
  2. Pred acetate 1% Q4H
  3. Loteprednol QID
  4. Fluorometholone Q4H
  5. Durezol QID
  6. Pred acetate 1% Q2H

WHEN WOULD YOU NEXT SEE THE PATIENT?

1. 1 day
2. 2 days
3. 3 days
4. 4 days
5. 1 week

“REGULAR CASE” – NEXT VISIT

- No photophobia or pain
- VA 20/20 OU
- No injection
- Decreasing cells
- IOP 16 OD, 15 OS

- SO NOW WHAT??

TREATING UVEITIS

- Topical corticosteroids
- Topical cycloplegia/mydriatics
- Systemic corticosteroids
- Systemic non-corticosteroids / immunomodulators
- Antimicrobial drugs
- Cryotherapy
- Vitrectomy

WHEN DO YOU SEE THE PATIENT BACK?

WHEN TO INCORPORATE EACH?

CASE #2

- 86 year old M reports for red eye visit
- Blurred vision right eye worse than left
- Cloudy, film over vision
- Mild pain and light sensitivity

- Hx of Dry Macular Degeneration
- S/p Cataract surgery OU
- Hx of Vascular occlusion in 1980s

CLINICAL EXAM FINDINGS

- Vision uncorrected
  - OD 20/50 PHNI
  - OS 20/40 PH 20/30
- Slit lamp exam OD (OS unremarkable)
  - Conj white and quiet
  - Cornea: 2+ KPs inferior in triangular pattern, base wider inferiorly
  - A/C: 2+ cell
  - IOP: 33 mmHg OD, 17mmHg OS

CLINICAL EXAM FINDINGS

- Vision uncorrected
  - OD 20/50 PHNI
  - OS 20/40 PH 20/30
- Slit lamp exam OD (OS unremarkable)
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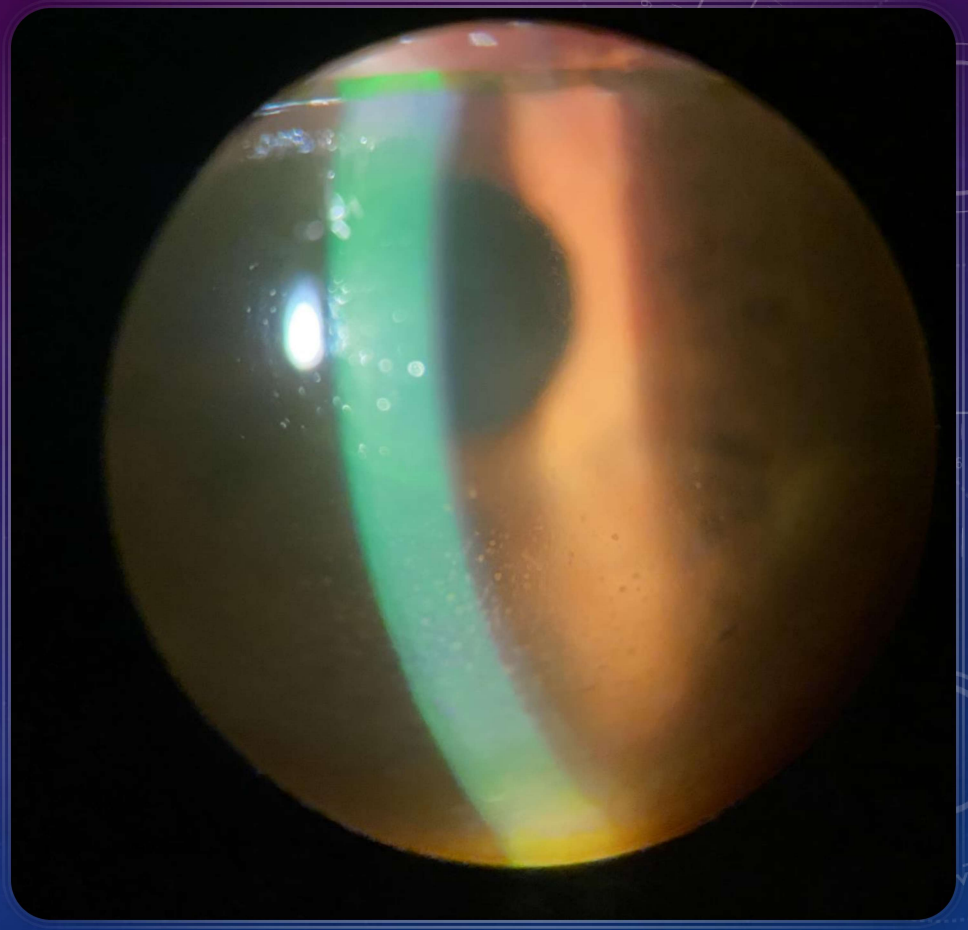


MANAGEMENT

- Cycloplegia in office
  - DFE unremarkable for posterior uveitis, pt had mild macular changes from dry AMD but stable from previous exam
- Simbrinza in-office while dilating (use bid OD at home)
  - IOP dropped from 33 to 23 in 30 minutes
- Durezol qid OD
- Valtrex 1g po tid
- RTC 1 day

RESOLUTION OF THE CASE

- Pt's vision got worse due to KPs creeping up higher in AC, but cells decreased over the next 5 days
  - VA was 20/200 PH 20/70
- IOP stayed in teens while on Simbrinza and Valtrex
- Had to switch to Pred q2h due to cost and availability
- Day 5-> No KPs, but diffuse SPK from Pred
  - VA 20/40
- Tapered off Pred over 2 weeks, finished Valtrex, d/c Simbrinza at 2 week follow-up visit
  - VA 20/25

CASE #3

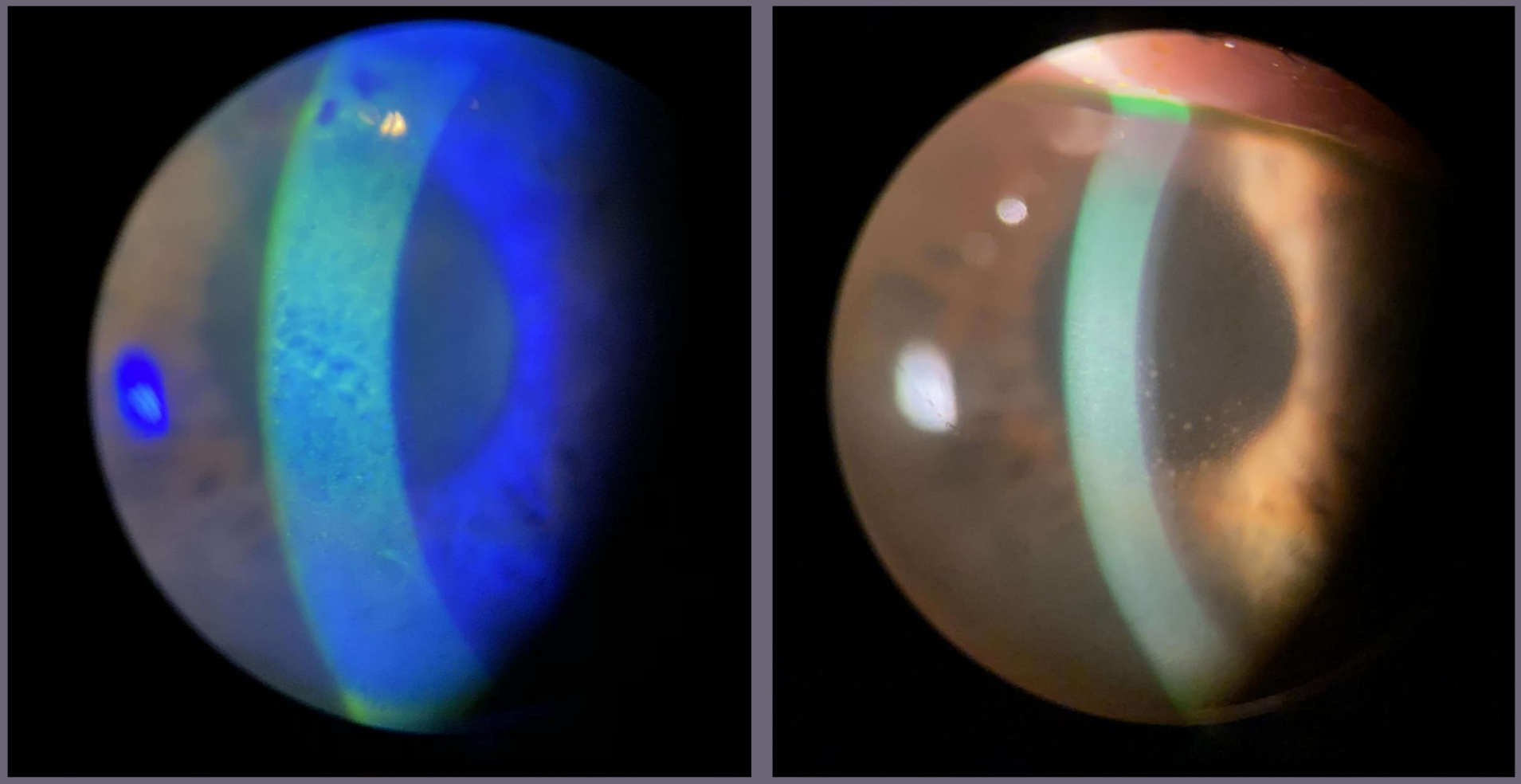
WHEN BAD GOES TO WORSE

PRESENTATION

- 66 year old female reports to clinic for red eye OS, blurred vision, discharge, headaches x 3 days
- Went to Urgent Care over weekend, was given gentamycin and follow-up if no improvement

CLINICAL EXAM FINDINGS

- VA (in old glasses)
  - OD 20/25
  - OS 20/60 PHNI
- Slit lamp findings OS (OD unremarkable):
  - Conjunctiva: 3+ injection
  - Cornea: Microcystic edema and limbitis 360
  - A/C: 1+ cell, inferior KPs, open angle
  - IOP
    - OD 18mmHg
    - OS 50mmHg



MANAGEMENT

- Durezol qid OS
- Cyclo in office
  - DFE unremarkable
- RTC in 24 hours

DAY 2

- Patient feels better, still having pain and blurred vision, less redness than day before
- VA
  - OD 20/20
  - OS 20/50 PH 20/40
- Slit lamp findings OS:
  - Conjunctiva: 3+ injection
  - Cornea: KPs almost resolved, small cluster
  - A/C: 1+ cell
  - IOP
    - OD 18mmHg
    - OS 44mmHg

- Continue Durezol qid OS
- Add Combigan bid OS
- RTC 3 days (over the weekend)

DAY 5

- Feeling a little better, feels like she's turning the corner
- VA
  - OD 20/20
  - OS 20/25
- Slit lamp findings
  - Conjunctiva: 2+ injection
  - Cornea: increased KPs (increased flow of aqueous?)
  - A/C: 1+ cell
  - IOP
    - OD 18mmHg
    - OS 22mmHg

DAY 7

- Was doing much better then woke up next day feeling worse than before
- VA
  - OD 20/30
  - OS 20/40
- Slit lamp findings
  - Decreased KPs from 2 days prior
  - A/C increased cells 2+, very little motility from convection flow
  - IOP
    - OD 18mmHg
    - OS 42mmHg (on Combigan)

MANAGEMENT

- Time to refer to corneal and glaucoma specialist
- IOP stayed in the 40s, needed oral steroids, oral IOP lowering meds, and Valtrex
- Eventually got tube shunt to lower IOP to manageable levels
- Anterior chamber PCR positive for VZV

POSSNER-SCHLOSSMAN SYNDROME

GLAUCOMATOCYCLITIC CRISIS

- Recurrent unilateral attacks of ocular hypertension
  - Mild discomfort / blurred vision
  - Increased IOP with open aglens
  - Mild AC reaction that doesn't match IOP spike
  - Crises lasting hours to weeks long
  - No signs of uveitis between attacks

UVEITIS

- Great opportunity for collaboration across the board
- Get a good referral network for patients who need these doctors
- Use a thorough history to rule out conditions
- Open the net to find out the underlying issue
- Prove systemic association
- Treat the patient as a whole
- Get involved with local groups of autoimmune disease

THANK YOU!