

SECO Boards Review

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No Financial Disclosures

2

Helpful Pearls

- Watch out for **buzz words** in questions and cases
 - "painful, unilateral vs bilateral, reduced, new medicines, time course, S/S
- Process of **ELIMINATION!**
- Make an **educated guess**
- After reading the case or questions, start thinking about **differential diagnoses**
- **READ THE QUESTIONS AND ANSWERS thoroughly**
- Pretend these are your **patients**
- **RELAX and BREATHE!**
- Be mindful of the test **TIME!**
- Memorization alone will not help you on this test, clinical analysis will!



3

THINK LIKE A DOCTOR!

- Case History
 - Consider time course (acute vs. chronic); **RECURRENT**
 - Gender/Race/Location/FHx/ Age
 - **MEDICATIONS!** Know the MOA and SEs (Systemic/Ocular)
 - Medical History
- Describe what you see
- Differential Diagnoses
- Clinical Tests
- Treatment/Management (previous tx)
- Follow Ups
- Pertinent Negatives
- **APPLY INFORMATION LEARN!!!**



4

Remember This: Problem Solving 101



5

Piecing it Together

- Anatomy & Physiology
- Pharmacology
- Systemic Disease
- Ocular Disease



6

Ocular Pharmacology

7

Understanding the Why: Key Considerations Before Rx'ing

- **Diagnosis & Etiology:**
 - What is the primary condition being treated?
 - Is it bacterial, viral, inflammatory, or systemic?
- **Mechanism of Action:**
 - How does this drug work?
 - Does it target the underlying cause or just symptoms?
- **Patient-Specific Factors:**
 - Age, pregnancy status, kidney/liver function, allergies
 - Medication interactions and contraindications

8

Understanding the Why: Key Considerations Before Rx'ing

- **Risk vs. Benefit:**
 - Will the treatment provide more benefit than harm?
 - Are side effects manageable or severe?
- **Alternative Therapies:**
 - Could another treatment be equally or more effective?
 - Are non-pharmacological options available?
- **Compliance & Accessibility:**
 - Is the medication affordable and available?
 - Will the patient adhere to the treatment plan?

9

Before You Rx.....Ask Yourself

- **Who is in my chair**
 - Age
 - Personal Medical History (Kidney/Liver)
 - **Allergies *******
 - Contraindications
 - Current Medications
 - BWI *****
 - How much
 - Intended Therapeutic Effect
 - Cognitive and Physical Ability of patient
 - Compliance



10



11



12

Your Team



13

Construction Paper Color Key

- A. Pink**
- B. Orange**
- C. Yellow**
- D. Red**
- E. Green**



14



15

Mingle Game-Multiple Response Edition

- In this game, you will be presented with a case followed by follow-up questions.
- For each question, you must select two or more correct answer choices.



16

Case Question

A 35-year-old patient presents to your office with redness, swelling, and warmth around their right eye, along with mild discomfort. There is no pain with eye movement, but the eyelid is tender to the touch. The patient also reports no fever and has no history of trauma or recent sinus infection.

Dx: **preseptal cellulitis**

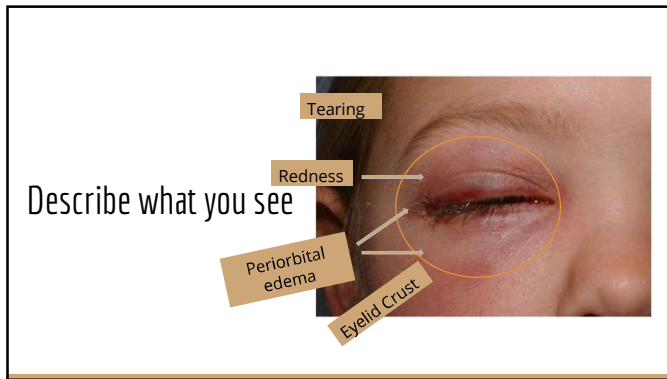


17

Describe what you see



18



19

A 6-year-old child presents with eyelid swelling, erythema, and tenderness. There is no pain with eye movement, no proptosis, and no afferent pupillary defect. The child has a history of a severe anaphylactic reaction to penicillin. Which of the following oral antibiotics is the best option for the patient? (Select all that apply)

- A) Ciprofloxacin
- B) Clindamycin
- C) Amoxicillin-Clavulanate
- D) Doxycycline



20

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21

A child with preseptal cellulitis shows worsening symptoms despite oral antibiotics. What is the next best step in management?

- A) Increase the dose of oral antibiotics
- B) Switch to topical antibiotics
- C) Admit for IV antibiotics
- D) Prescribe systemic antivirals



22

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23

Of the following, which of the following is the most common causative organism in preseptal cellulitis in children (Select 2)?

- A) Pseudomonas aeruginosa
- B) Haemophilus influenzae
- C) Staphylococcus aureus
- D) Neisseria gonorrhoeae

24

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- B) *Haemophilus influenzae***
- C) *Staphylococcus aureus***
- D) *Neisseria gonorrhoeae*

25

Which of the following side effects is most commonly associated with oral antibiotics used to treat lid infections? (**Select 1**)

- A) Gastrointestinal upset
- B) Increased intraocular pressure
- C) Corneal toxicity
- D) Photophobia



26

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Soft Tissue & Gland Infections

- Preseptal, MGD, Lid Edema, Hordeolum
- TX:
 - Category B
 - **Oral Penicillins**
 - (Augmentin 875 mg BID/ Amoxicillin 875mg X BID)
 - **Oral Cephalosporins** (Cephalexin 500 mg x BID)
 - **Oral Azithromycin** (500 mg/ Zpak)
 - **Oral Erythromycin** (500 mg x BID)



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29

Case Question

18 WM YO chronic allergy patient presents with sudden pain and blurred vision (see photo)

Dx: Vernal Keratoconjunctivitis



30

Question

• All are effective in treating VKC EXCEPT:

- A. Topical Immunomodulator
- B. Surgical Excision
- C. Topical Antiviral
- D. Topical Antibiotic
- E. Corneal Debridement

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Question

• All are effective in treating VKC EXCEPT:

- A. Topical Immunomodulator
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- C. **Topical Antiviral**
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32

Classic Signs of VKC

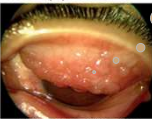
Figure 1. Clinical forms of VKC: Limbal or bulbar, palpebral and mixed

Limbitis



Limbal form of VKC: Gelatinous translucent appearance

GPC



Palpebral form of VKC: Cobble stone papillae seen after flipping of upper lid

Horners Trantas Dots



Yellow Horners Trantas dots: more

Epithelial Defects



Roughness of epithelium as

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Current Treatment of VKC

Mild (Grade 1) • Avoidance • Lubricants • Antihistamines • Mast Cell Stabilizers	Moderate (Grade 2) • ***Mild Treatment • Mild topical Steroids • Topical immunomodulator
Severe (Grade 3) • Mild Treatment • Topical Steroids • Topical Cycloplegics • Topical Immunomodulators	Very Severe (Grade 4) • Systemic Steroids • Cyclosporine • Tacrolimus • Shield Ulcer Debridement • Systemic Treatments • Surgical Excision

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Clinical Presentation of VKC vs AKC

Characteristics	VKC	AKC
Age of Onset	Usually <10 YO	>20 YOs
Sex	Male > Female	No Gender Difference
Seasonal Variation	> Spring Months	Perennial
Discharge	Thick, mucoid	Watery, clear
Conjunctival Scarring	Moderate incidence	High incidence
Horners Trantas dots	Common	Rare
Corneal Neovascularization	Not present unless secondary to infectious keratitis	Tends to develop
Eosinophils in conjunctival scraping	More likely	Less likely

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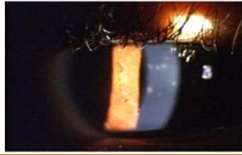


36

Case Question

A 32-year-old patient presents with red, watery eyes, photophobia, and a foreign body sensation in both eyes for the past 10 days. Examination reveals preauricular lymphadenopathy, conjunctival hyperemia, and multiple subepithelial corneal infiltrates.

What is the most likely diagnosis, and which treatment approach is recommended?



- A) Bacterial conjunctivitis; prescribe topical fluoroquinolones
- B) Epidemic keratoconjunctivitis (EKC); provide supportive care and consider topical steroids for subepithelial infiltrates
- C) Fungal keratitis; prescribe topical antifungals
- D) Allergic conjunctivitis; prescribe antihistamine drops

37

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Viral Conjunctivitis

- Mild-Moderate Cases: AT's and monitor
- Severe: Topical Steroid
 - Prednisolone or Loteprednol 1%
 - Presence of pseudomembranes and/or subepithelial infiltrates (SEIs)
- Betadine Therapy (EKC)
 - **CAUTION:**
 - should be used during pregnancy only if the potential benefit to the mother justifies the potential risk to the fetus; non-prescription use should be avoided.
 - increases breast milk iodine levels and can cause transient hypothyroidism in breastfed infants



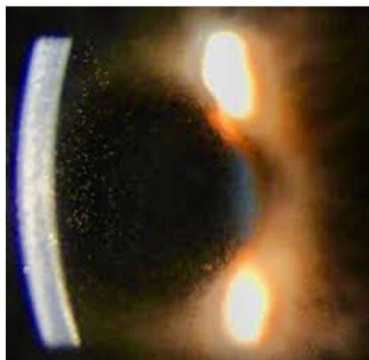
39



40

Case

Describe what you see



41

Which of the following are not appropriate cycloplegic agents for pain relief and synechiae prevention in acute anterior uveitis? **(Select 1)**

- A) Atropine 1%
- B) Pilocarpine 2%
- C) Homatropine 5%
- D) Tropicamide 1%



42

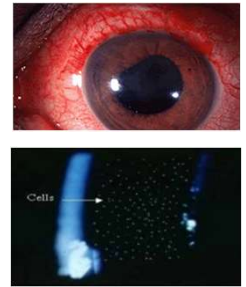
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Anterior Uveitis (G/NG)

- Topical Corticosteroids(Category C)
 - Topical Prednisolone 1%
 - Penetrates poorly into breastmilk
 - Safe for short-term use
 - Punctal occlusion
- Topical Cycloplegics/Mydriatics
 - Preg pts: Topical Cyclopentolate
 - Punctal Occlusion recommended



44

What is the mechanism of action of tropicamide in the eye? **(Select 2)**

- A) Tropicamide blocks beta-adrenergic receptors in the ciliary body.
- B) Tropicamide inhibits muscarinic acetylcholine receptors in the iris**
- C) Tropicamide inhibits muscarinic receptors in the ciliary body, leading to cycloplegia.
- D) Tropicamide stimulates alpha-adrenergic receptors to induce pupil constriction.



45

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46

In which of the following patient populations should atropine be used with caution? **(Select 2)**

- A) Elderly patients**
- B) Patients with Down syndrome**
- C) Pediatric patients
- D) Patients with hypertension



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Case Question

- A 45 YO Pt
- CC: Severe eye pain OS, which she describes as deep, aching, and worsening with eye movement x 3 days
 - has been progressively getting worse.
- She also reports feeling a dull headache and redness in the eye OS
 - denies any visual changes or discharge.
- Clinical Findings
 - Significant, deep conjunctival injection
 - blue-ish hue around the limbus, cornea appears clear
- PHX: Rheumatoid Arthritis (RA)
 - Meds: methotrexate



50

What is the most appropriate diagnosis of this case?

- A) Conjunctivitis
- B) Episcleritis
- C) Scleritis
- D) Uveitis

51

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52

Which of the following is the most appropriate use of **phenylephrine 10%** in this case?

- A) To rule out superficial inflammation
- B) To assess the level of dilating ability
- C) To treat ocular hypertension associated with the condition
- D) To reduce ocular pain and inflammation

53

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54

Which of the following statements is the most true regarding the pharmacology of phenylephrine in the eye?
(Select 1)

- A) Phenylephrine causes pupil dilation by stimulating alpha-1 adrenergic receptors in the iris.
- B) Phenylephrine causes pupil constriction by stimulating muscarinic receptors in the iris.
- C) Phenylephrine blocks beta receptors in the iris, leading to pupil dilation.
- D) Phenylephrine causes pupil dilation by inhibiting alpha-1 adrenergic receptors in the iris.

55

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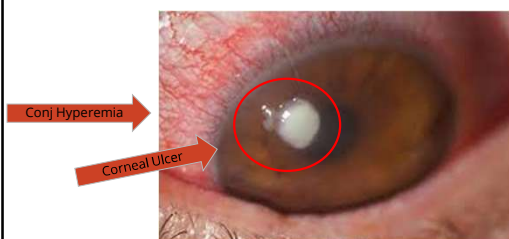
57

Describe what you see



58

Describe what you see



59

In the treatment of bacterial keratitis, why might a loading dose of an antibiotic be administered initially?
(Select 1)

- A) To achieve therapeutic drug levels more quickly
- B) To minimize the risk of corneal scarring
- C) To prevent antibiotic resistance
- D) To decrease the likelihood of an ocular allergic reaction



60

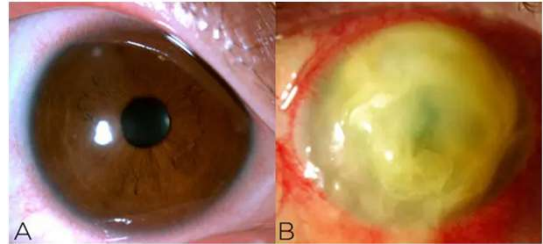
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61

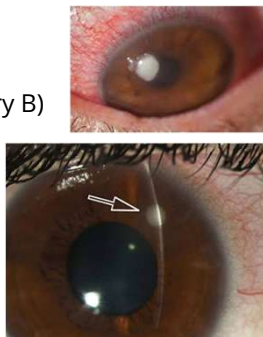
Non-infectious vs Infectious Etiology



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Corneal Bacterial Keratitis

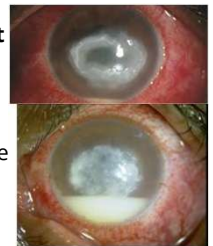
- Tx
 - Topical Antibiotics (Category B)
 - Tobramycin
 - Polymyxin B
 - Erythromycin
 - Azithromycin
 - **Severe cases** → Fortified cephalosporins



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Infectious Microbial Keratitis

- **Fortified Therapies have an excellent safety profile for severe bacterial keratitis**
 - Topical cephalosporin antibiotics,
 - such as cefazolin and ceftazidime
 - Topical tobramycin antibiotics
 - Topical fluoroquinolones



64

Which of the following is a common side effect of fluoroquinolones when used topically in the treatment of ocular infections? (**Select 1**)

- A) Corneal staining
- B) Increased intraocular pressure
- C) Tinnitus
- D) Conjunctival hyperemia



65

Which of the following is a possible side effect of fluoroquinolones when used topically in the treatment of ocular infections?

- A) Corneal staining
- B) Increased intraocular pressure
- C) Tinnitus
- D) Conjunctival hyperemia**



66

Case Question

Which of the following is the first-line treatment for fungal keratitis? (Select 1)

- A) Oral fluconazole
- B) Topical natamycin
- C) Topical acyclovir
- D) Oral doxycycline



67

Case Question

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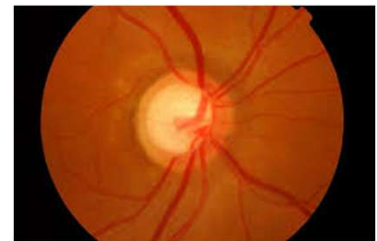
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Case

Describe what you see

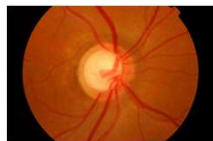


70

Case Question

Which of the following best describes the mechanism of action of latanoprost in treating glaucoma? (Select 2)

- A) Latanoprost increases the outflow of aqueous humor through the uveoscleral pathway.
- B) Latanoprost decreases aqueous humor production by the ciliary body.
- C) Latanoprost increases the outflow of aqueous humor through the trabecular meshwork.
- D) Latanoprost binds to prostaglandin receptors in the eye, enhancing aqueous humor drainage.**

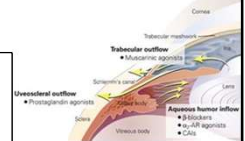


71

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Anti-Glaucoma Therapy



Common bottle top colors

Green/Teal: Prostaglandins, like latanoprost eye drop
Yellow: Beta blockers, like timolol eye drop
Purple: Alpha agonists, like brimonidine eye drop
Orange: Carbonic anhydrase inhibitors, like dorzolamide eye drop
Dark Blue: Combination drops, like dorzolamide-timolol, brimonidine-timolol
White: Rho kinase inhibitor, like netarsudil eye drop

American Glaucoma Society, 2024

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A patient with ocular hypertension is prescribed topical brimonidine. Which systemic side effects should be monitored? **(Select 3)**

- A) Dry mouth
- B) Hypotension
- C) Tachycardia
- D) Fatigue



74

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75

Which of the following medications is contraindicated in patients with asthma due to its potential to induce bronchospasm? **(Select 1)**

- A) Timolol
- B) Brimonidine
- C) Latanoprost
- D) Dorzolamide

76

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Question Time

A patient on Timolol drops for glaucoma presents with fatigue and shortness of breath. **What systemic condition should be considered?**

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- A) Timolol
- B) Dorzolamide
- C) Latanoprost
- D) Brimonidine

82

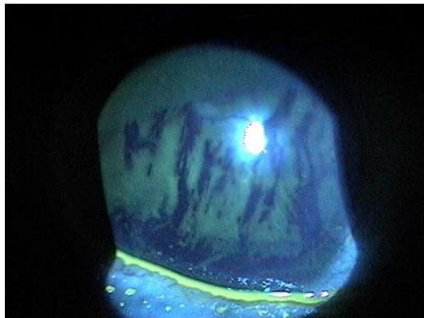
- A) Timolol
B) Dorzolamide
C) Latanoprost
D) Brimonidine



82

Case

Describe what you see



83

Dry Eye Syndrome

- Dry Eye Syndrome
 - Anti-inflammatory medication → cyclosporine A
 - Category C
 - OTC lubricate AT's and Gels (safe)
 - OTC low dose Brimonidine
 - Category B
 - **LUMIFY**



84

Which of the following best describes the mechanism of action of topical cyclosporine (Restasis) and lifitegrast (Xiidra) in the treatment of chronic dry eye disease? (Select 1)

- A) Increase aqueous tear production by stimulating lacrimal gland secretion
- B) Inhibit T-cell-mediated inflammation to improve tear film stability
- C) Block histamine release to reduce allergic conjunctivitis symptoms
- D) Increase meibomian gland function to improve lipid layer stability



85

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86

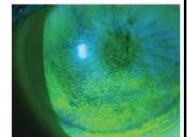
Which of the following statements about benzalkonium chloride (BAK) in dry eye drops is most accurate? (Select 1)

- A) BAK is a preservative that helps stabilize artificial tears for long-term use in dry eye patients.
- B) BAK can cause ocular surface toxicity and worsen dry eye symptoms with chronic use.
- C) BAK-containing drops are preferred for patients with severe dry eye disease.
- D) BAK improves meibomian gland function by reducing bacterial overgrowth.

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Ocular Allergies

- Ocular Allergies
 - Most topical antihistamines are **Category B** and safe to use → **alcaftadine 0.25%**
 - However, **Pataday and Pazeo** are **Category C**
- Low dose topical steroid use; short term (*PF, FML*)
- Omega 3 fish oil supplements are safe (fish oil allergies are RARE)



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Which of the following best describes the mechanism of action (MOA) of topical antihistamines in the treatment of allergic conjunctivitis? (Select 1)

- A) Block H1 receptors to reduce itching and inflammation
- B) Inhibit mast cell degranulation to prevent histamine release
- C) Decrease aqueous humor production to lower intraocular pressure
- D) Stimulate alpha-adrenergic receptors to reduce conjunctival hyperemia



90

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Ocular Pharm Pearls

- **Organize by Drug Class**
 - Categorize by MOA (Mechanism of Action)
 - I.e. Cholinergic, Adrenergic, Anti-inflammatory, etc.
 - Create a drug chart
 - (Drug Name | MOA | Uses | Side Effects | Contraindications)
- **Go hard on common ophthalmic drugs used in practice**
 - Autonomic Drugs (*Mydriatics vs. Miotics*)
 - Glaucoma Medications (*Beta-blockers, PGAs, CAls, etc*)
 - Ocular Antibiotics & Antivirals
 - Steroids & NSAIDs (*Ocular inflammation & side effects*)



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Ocular Pharm Pearls

- **Memorization Hacks**
 - Mnemonics & Acronyms 
 - Example:
 - "ABC" for Beta-Blockers → (*Avoid in Asthma, Bradycardia, CHF*)
 - "Never Let Go" for PGAs → (*Neovascularization, Lashes, Iris Color Change*)
 - Flashcards!!!!
- **Study Smart, Not Hard!**
 - **Active Recall** > Passive Reading
 - Study **with peers** for discussion & retention
 - Review **drug mechanisms visually** (Flowcharts, Diagrams)

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END

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Systemic Pharmacology

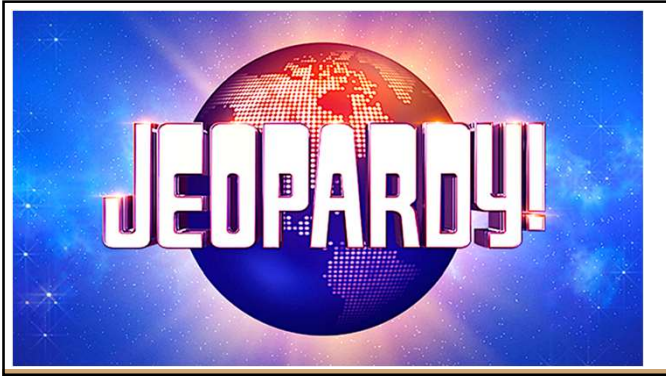
95

Systemic Pharm Pearls

- **Link to Systemic Pharmacology**
 - Systemic drugs affecting the eye
 - e.g., Topiramate → Angle Closure
 - Ocular side effects of common meds
 - I.e.
 - Digoxin → *Xanthopsia*
 - Hydroxychloroquine → *Bulls-eye Maculopathy*
- **Link it to A&P**
 - Where is the effect taking place → Location!
 - What's happening to the eye/effect
- **Practice with Clinical Cases & Questions**
 - Apply pharmacology to real cases



96



97

First-line oral
antiviral for
herpes simplex
keratitis



98

What is valacyclovir, famciclovir or acyclovir?

99

The first-line therapy for
Giant Cell Arteritis (GCA)
to prevent vision loss.



100

What are high-dose corticosteroids?

101

This class of drugs
causes a blue-tinged
vision (cyanopsia) as a
side effect.



102

What are PDE-5 inhibitors (e.g., sildenafil)?

103

This antimalarial and antirheumatic drug is used to treat RA and SLE.



104

What is hydroxychloroquine?

105

Floppy iris syndrome is a concern in patients taking this class of medication.



106

What are alpha-1 blockers (e.g., tamsulosin (Flomax))?

107

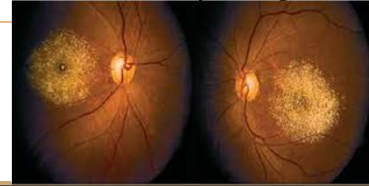
This medication can cause optic neuritis and color vision loss, particularly in tuberculosis treatment.

108

What is ethambutol?

109

This chemotherapy drug can lead to crystalline retinopathy



110

What is tamoxifen?

111

This drug can cause optic disc edema and increased intracranial pressure, mimicking IIH.

112

What is tetracycline?

113

A drug that can cause "bull's eye maculopathy" when used long-term



114

What is hydroxychloroquine?

115

This class of drugs is used for treating asthma and COPD by relaxing airway smooth muscles

116

What are beta-2 agonists?

117

This drug class is used as first-line therapy for type 2 diabetes

118

What are biguanides (e.g., metformin)?

119

This medication class is used for migraines and can cause vasoconstriction.

120

What are triptans?

121

Aldosterone antagonists
belong to this diuretic class

122

What are potassium-sparing diuretics?

123

Warfarin and heparin
belong to this class of
medications

124

What are anticoagulants?

125

This class of medications
treats glaucoma by
increasing aqueous humor
outflow.

126

What are prostaglandin analogs?

127

Beta-blockers reduce intraocular pressure by decreasing this.

128

What is aqueous humor production?

129

This drug prevents platelet aggregation by inhibiting COX-1 and COX-2

130

What is aspirin?

131

Acetazolamide reduces intraocular pressure by inhibiting this enzyme

132

What is carbonic anhydrase?

133

Atropine works by blocking
this type of receptor



134

What are muscarinic receptors?

135

Warfarin works by inhibiting
this vitamin-dependent
clotting cascade



136

What is Vitamin K?

137

This antibiotic inhibits DNA
gyrase.

138

What are fluoroquinolones?

139

Tetracyclines are
contraindicated in these two
populations

140

What are pregnant women
and children under 8?

141

Avoid NSAIDs in patients
with this chronic condition

142

What is chronic kidney
disease?

143

Systemic Diseases

144

Finding the "Frontman"!



145

Case 1, 69 BF

- **CC:** sudden **reduced vision and large floaters OD** x 3 days with no improvement;
 - No pain or discomfort and light sensitivity OD only



146

Case History

- **LEE:** >5 years ago (?)
- **Ocular History:** Unremarkable
- **Medical History:**
 - HTN, Obstructive sleep apnea (with CPAP use), Asthma
- **Medicine:** HCTZ, Albuterol Inhaler
- **Family History:** + DM, HTN, Heart Dz
- **Allergies:** NKDA
- **Observation:** Coughing, shortness of breath during case history reporting *"I feel like I am coming down with something"*

147

Case Findings

- **UCVA:**
 - **OD:** HM at 1 ft
 - **OS:** 20/80
 - NIPH OU
- **IOP:**
 - 10 mmHg OD | 11 mmHG OS
- **EOMs:** Full, no restrictions OD, OS
- **Pupils:** PERRLA OD, OS
- **CVF:** Restricted OD> OS

148

Clinical Findings

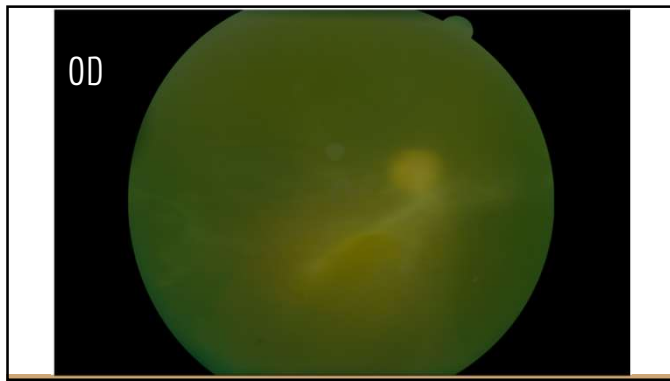
- **Adnexa/Lids:**
 - Normal OD, OS
- **Corneae:**
 - Moderately diffuse confluent SPK inferiorly OD, OS
- **Conjunctiva:**
 - OD: 1+ Injection
 - OS: Trace-1+ injection
- **Iris:** Normal and Reactive OU

149

Clinical Findings

- **Anterior Chamber:**
 - **OD:** Deep & Quiet (-)PAS/PS
 - **OS:** Deep & Quiet (-)PAS/PS
- **Lens:** 1+ NS OU
- **Posterior Segment (DFE):** *See next slide*

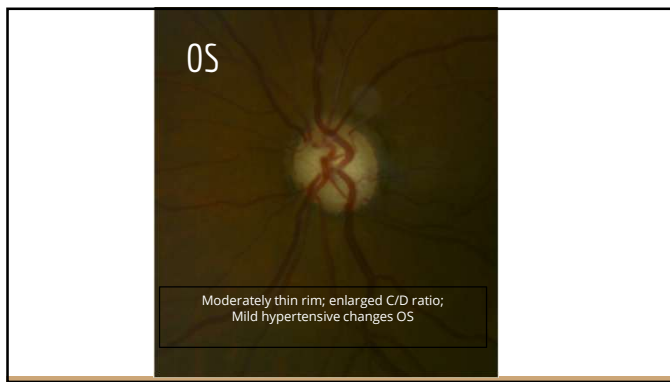
150



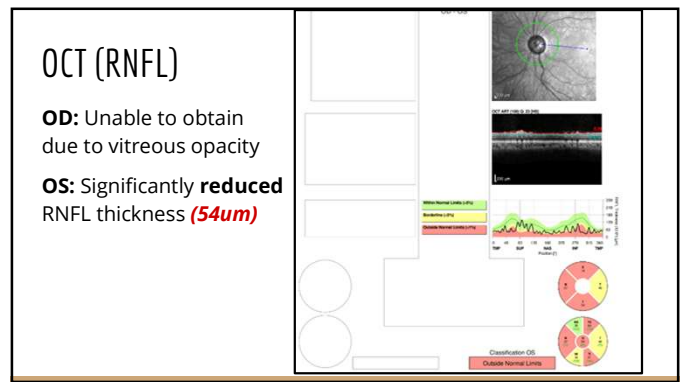
151



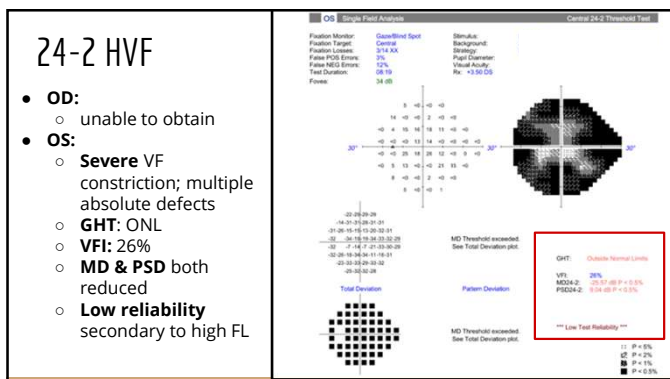
152



153



154



155

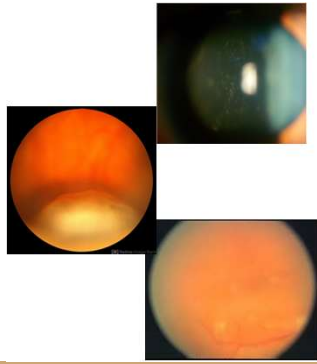
Assessment/Plan

- Diagnosis**
 - Active Vitritis OD**
 - High Risk Glaucoma Suspect OS
 - Mild HTN retinopathy OS
 - Ocular Surface Irritation
 - Exposure Keratopathy OU
 - Possible nocturnal lagophthalmos OU
 - Conjunctival Injection OD>OS
 - Mild NS Cataracts

156

Intermediate Uveitis (IU)

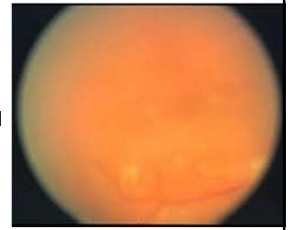
- **Primary Site of Inflammation** → **Vitreous**
 - Anterior vitreous, pars plana (snowbanking), peripheral retina
- **Etiopathogenesis**
 - Unknown
 - However, seems to be a **T-cell mediated disease process**
 - May be initiated by an infectious or autoimmune antigen



157

Intermediate Uveitis (IU)

- **Signs & Symptoms**
 - Floaters
 - Blurred vision
 - Photophobia
 - Anterior chamber no or minimal findings
 - Cells and flare, KPs possible
 - Uncommon, pain, redness
 - Posterior synechiae
- **Vitritis** is a characteristic feature of IU



158

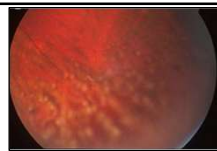
Differential Diagnoses



Tuberculous Chorioretinitis



Syphilis Posterior Uveitis



Multiple Sclerosis Associated Uveitis (Snowbanking)



Sarcoidosis Posterior Uveitis



Ocular Toxoplasmosis

159

Differential Diagnoses Cont'd

- | | | |
|---|---|---|
| <ul style="list-style-type: none"> • Infectious <ul style="list-style-type: none"> ◦ Tuberculosis ◦ Syphilis ◦ Toxoplasmosis ◦ Lyme Disease ◦ Retinal Necrosis ◦ Endophthalmitis | <ul style="list-style-type: none"> • Immune <ul style="list-style-type: none"> ◦ Pars Planitis ◦ Sarcoidosis | <ul style="list-style-type: none"> • Inflammatory <ul style="list-style-type: none"> ◦ Multiple Sclerosis ◦ Sjogren's Syndrome ◦ Behcet's |
|---|---|---|

- Idiopathic (Senile Vitritis) nearly 70% of cases

160

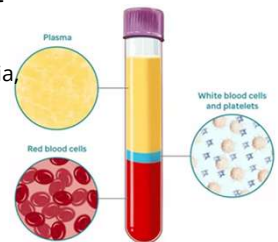
Assessment/Plan

- **Referred to Retina & Infectious Disease**
 - **B-Scan Ultrasonography**
 - Multiple dense, clumped vitreal opacities OD, Clear OS; Retina intact OD, OS
 - Ordered serology, chest X-ray, and urinalysis (**same day**)
 - CBC w/ diff, ESR, CRP, BMP, PPD, FTA-ABS, RPR, ANA, ELISA, Antibody/Antigen, PCR, ACE

161

Inflammatory & Immune Test

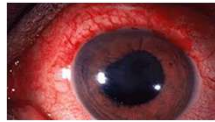
- **CBC w/ Differential:** Evaluates blood cells for infections, anemia, and hematologic disorders.
 - **Components:** RBC, WBC, platelets, and WBC differential.
 - Key Conditions: **Infections, anemia, leukemia.**



162

Inflammatory & Immune Test

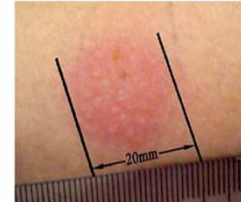
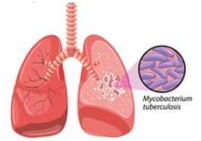
- **ESR & CRP: Detect inflammation.**
 - **ESR:** Measures RBC sedimentation rate; slower to respond.
 - **CRP:** Sensitive marker for acute inflammation and infection.
 - Key Conditions: **Autoimmune diseases, cardiovascular risks.**
- **ANA:** Detects auto-antibodies for autoimmune disorders.
 - a. Key Conditions: **Lupus, Sjögren's syndrome, scleroderma.**



163

Infectious Disease Testing

- **PPD:** Screens for tuberculosis.
 - Method: Skin test, measured after 48-72 hours.
 - Key Condition: **Tuberculosis (TB).**



164

Infectious Disease Testing

- **FTA-ABS & RPR: Syphilis diagnostics.**
 - RPR: Screening (non-specific).
 - FTA-ABS: Confirmatory (specific to *Treponema pallidum*).
- **Elisa & Antibody/Antigen Tests:** Detect infections and immune responses.
 - **ELISA:** Quantifies antibodies/antigens (e.g., HIV, Lyme).
 - **Antibody/Antigen Tests:** Rapid diagnostics for diseases like COVID-19.



165

Molecular & Metabolic Tests

- **PCR:** Amplifies DNA/RNA sequences for precise detection.
 - Applications: **COVID-19, genetic mutations, infections.**
- **BMP:** Assesses kidney function, electrolytes, and glucose levels.
 - Components: Sodium, potassium, BUN, creatinine, glucose, calcium.
 - Key Conditions: **Diabetes, kidney disease, dehydration.**
- **ACE Test:** Measures ACE levels to evaluate granulomas.
 - Key Condition: **Sarcoidosis.**



166

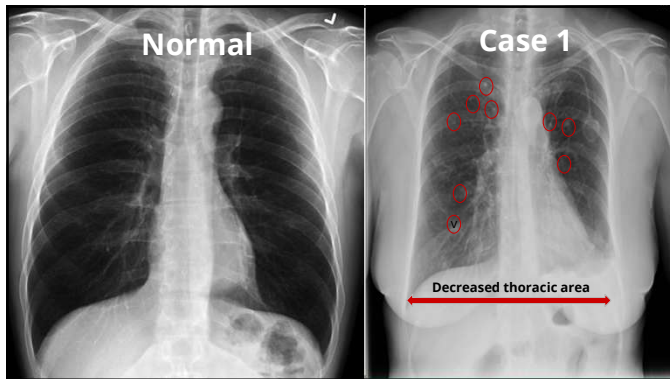
Serology Test Results

- **CBC w/ differential:** **elevated WBCs (>15,000/mm³)**
- **ESR:** **elevated (>10mm/h)**
- **CRP:** **elevated (>100mg/L)**
- **PCR:** **elevated**

167



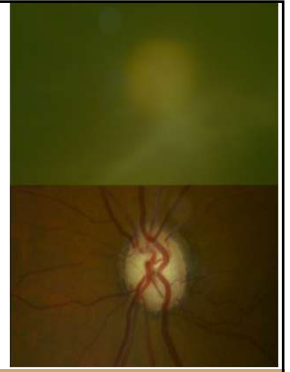
168



169

Updated Assessment & Plan

- **Legionnaires Disease**
 - Urinary analysis positive for *legionella*
- Severe Normal Tension Glaucoma OS x OSA



170

Legionnaires Disease

- Caused by **Legionella pneumophila**
 - Gram negative, aerobic bacteria
- Ranks fourth among **common causes of pneumonia**
 - (*S. pneumoniae*, *H. influenzae*, *Chlamydomphila pneumoniae*)
 - Community-Acquired Pneumonia
- **Atypical pneumonias**
 - Gram stained sputum smear does not show organisms
- **Prevalent worldwide**
- **DDx:** Pontiac Fever (*Milder Case*; flu-like symptoms)



171

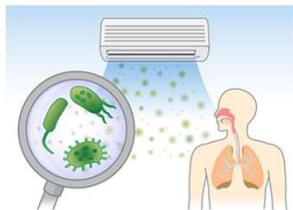
Transmission

- The most common form of transmission of Legionella is **inhalation of aerosols from contaminated water into the lungs**
 - i.e.
 - **Non-potable water sources:**
 - Air conditioning cooling towers, hot and cold water systems, humidifiers, whirlpool heated spas
 - **Potable water sources:**
 - Showers heads, faucets, respiratory therapy machines
- **No person to person** transmission has been reported

172

Risk Factors

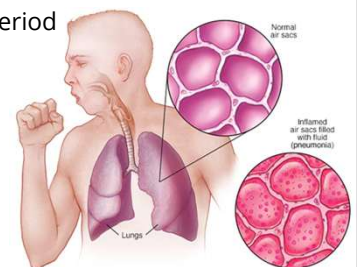
- Age
- History of cigarette smoking
- Chronic lung disease
- Immunosuppression
- Possible Exposure
 - Large bodies of water (i.e. lakes, streams)
 - Inside free living ameba
 - Warm water



173

Clinical Presentation of Legionnaires Disease

- 2-10 day incubation period
- Pneumonia
- Fever
- Pleurisy
- Purulent sputum
- Cough
- Diarrhea
- Headache
- Renal Failure



174

Diagnosis

- Chest X-Ray
- **Sputum Culture ***
- Direct Fluorescent Antibody staining of sputum
- **Urinary Antigen Testing***
- Antibody serology

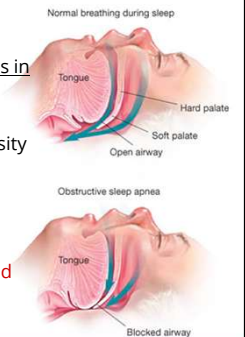
* High sensitivity



175

Obstructive Sleep Apnea

- **Sleeping disorder** characterized by lapses in breathing during sleep
- Causes:
 - Large tonsils, hormonal changes, obesity
 - Multifactorial
- **Risk Factors**
 - Men > Women
 - Age (>60yrs)
- **Central Sleep Apnea** → brain **doesn't send signal** to breathe



176

Continuous Positive Airway Pressure (CPAP)

- **Goal**
 - Uses mild air pressure to maintain breathing **airways are open during sleep**
- Commonly prescribed to treat sleep-related breathing disorders, i.e. sleep apnea
 - May be used to *treat preterm infants*



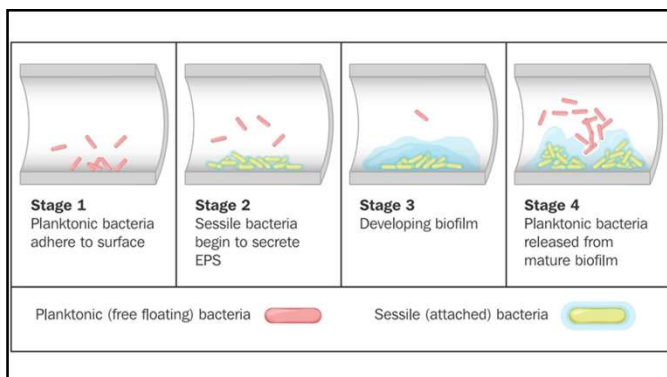
177

OSA, CPAP & Legionella

- Non-invasive positive pressure ventilation and CPAP (masks and tubing) are **potential sources of legionella infection**,
 - Especially if the equipment is not cleaned appropriately.



178



179

OSA, CPAP & Legionella

- Many OSA patients with CPAP at home and must be instructed how to clean their devices appropriately.
 - Cleaned daily with **distilled water**
 - Rinsing with tap water, instead of distilled water → **potential source of legionella colonization**
 - Most recommend that the tubing and humidifier be **cleaned at least weekly if not daily**
- In addition,
 - Masks and tubing are designed to be **disposable**
 - Should not be used more than their recommended periods (**3-6 months for CPAP masks**)



180

OSA & the Eye

- OSA is the **major risk factor** for **developing glaucoma (especially NTG)**
 - Studies show strong association between OSA and glaucoma.
 - Decreased blood perfusion to the head
- Complete ophthalmic evaluation should be advised** at every follow-up for patients with OSA
 - Undergo regular glaucoma screening and IOP monitoring
- Increased risks: **Dry Eyes, NAION, Papilledema, FES**



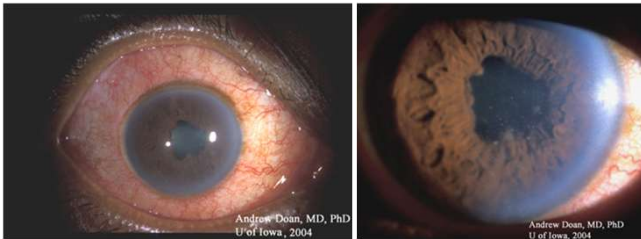
181

Case Follow Up

- First Line of Treatment** → **Antibiotics**
 - Macrolides or Fluoroquinolones (Oral/IV)
 - Levofloxacin or azithromycin for 7-10 days is recommended**
- Hospitalization may be needed in severe cases
- Case 1:**
 - Patient was treated with a **single high dose of IV azithromycin**; continued **oral azithromycin 500mg BID x 10 days**
 - Continued with **retina for intravitreal steroid injections**
 - Continued with **glaucoma for care**
 - 4 months post-therapy BCVA: 20/100, 20/80**
 - Severe NTG detected in OD

182

Case 2



183

SL Findings

- Marked conjunctival injection OU
- Ciliary flush OU
- 2+ cell/flare OU
- Large keratic precipitates (KP) and mutton fats on the corneal endothelium OU.
- There was central posterior synechiae around the pupil margin OU.



184

What is the most appropriate diagnosis of this case?

- A. Nodular Episcleritis
- B. Chronic Granulomatous Anterior Uveitis
- C. Necrotizing Anterior Scleritis
- D. Superior Limbic Keratoconjunctivitis



185

What is the most appropriate diagnosis of this case?

- A. Nodular Episcleritis
- B. Chronic Granulomatous Anterior Uveitis**
- C. Necrotizing Anterior Scleritis
- D. Superior Limbic Keratoconjunctivitis

186

Considering this case has an infectious-etiology, which of the following systemic condition(s) are NOT likely associated ?

- A. Syphilis
- B. Lyme Disease
- C. Sarcoid
- D. Tuberculosis
- E. Juvenile Idiopathic Arthritis



187

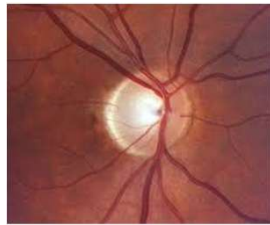
Considering this case has an infectious-etiology, which of the following systemic condition(s) are NOT likely associated ?

- A. Syphilis
- B. Lyme Disease
- C. Sarcoid
- D. Tuberculosis
- E. Juvenile Idiopathic Arthritis**

188

Which of the following anti-tuberculosis medications is known to cause optic neuropathy as a side effect?

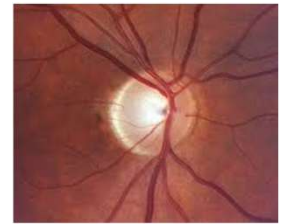
- A) Rifampin
- B) Isoniazid
- C) Ethambutol
- D) Pyrazinamide



189

Which of the following anti-tuberculosis medications is known to cause optic neuropathy as a side effect?

- A) Rifampin
- B) Isoniazid
- C) Ethambutol**
- D) Pyrazinamide



190

You are suspecting Tuberculosis as an underlying systemic, infectious cause. Which **TWO** tests below are the most appropriate in confirming a tuberculosis diagnosis? (**Select two answers**)

- A. Tissue Biopsy
- B. Quantiferon-TB Gold
- C. Lumbar X-Ray
- D. HLA-B27
- E. Hemoglobin A1C

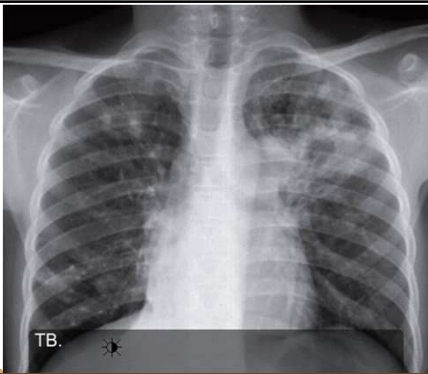
191

You are suspecting Tuberculosis as an underlying systemic, infectious cause. Which **TWO** tests below are the most appropriate in confirming a tuberculosis diagnosis? (**Select two answers**)

- A. Tissue Biopsy**
- B. Quantiferon-TB Gold**
- C. Lumbar X-Ray
- D. HLA-B27
- E. Hemoglobin A1C

192

TB CHEST X-Ray



193

RULE OF THUMB

- If you an infectious uveitis, **RULE OUT TB, SYPHILIS, and HIV!!**
 - These conditions can be great masqueraders and are often paired together

194

All are common HLA-B27 positive conditions except:

- A. Ankylosing spondylitis
- B. Rheumatoid arthritis
- C. Inflammatory Bowel Disease
- D. Psoriatic Arthritis

195

All are common HLA-B27 positive conditions except:

- A. Ankylosing spondylitis
- B. Rheumatoid arthritis**
- C. Inflammatory Bowel Disease
- D. Psoriatic Arthritis

UCRAP

196

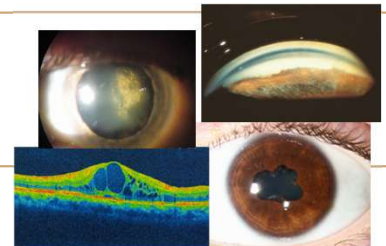
What are the main threats to vision in uveitis?

- A. PSC
- B. CME
- C. PAS
- D. All of the above

197

What are the main threats to vision in uveitis?

- A. PSC
- B. CME
- C. PAS
- D. All of the above**



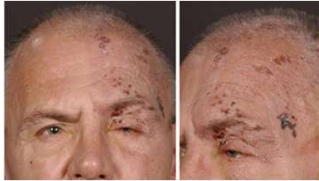
198

Case 3 Question

78 YO White Male Presents to Clinic

CC: Painful skin rash on left side of head and near eye X 1 day

Based on the photo shown, answer the following questions.



199

Question

- All are appropriate ophthalmic therapies for HZO epithelial keratitis except?
 - A. Topical Acyclovir
 - B. Oral Gabapentin
 - C. Topical Dexamethasone
 - D. Oral Prednisolone

200

Question

- All are appropriate ophthalmic therapies for HZO epithelial keratitis except?
 - A. Topical Acyclovir
 - B. Oral Gabapentin
 - C. **Topical Dexamethasone**
 - D. Oral Prednisolone

201

Case Question

What is the primary mechanism of action of acyclovir in treating ocular HSV keratitis? (Select 2)

- A) Acyclovir inhibits the viral DNA polymerase, preventing viral replication.
- B) Acyclovir binds to viral RNA, inhibiting viral protein synthesis.
- C) Acyclovir is incorporated into viral DNA, leading to chain termination.
- D) Acyclovir enhances the host immune response against the virus.



202

Case Question

What is the primary mechanism of action of acyclovir in treating ocular HSV keratitis?

- A) **Acyclovir inhibits the viral DNA polymerase, preventing viral replication.**
- B) Acyclovir binds to viral RNA, inhibiting viral protein synthesis.
- C) **Acyclovir is incorporated into viral DNA, leading to chain termination.**
- D) Acyclovir enhances the host immune response against the virus.



203

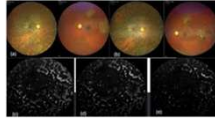
What are the potential side effects of using topical ganciclovir for HSV keratitis?

- A) Ocular irritation or stinging sensation
- B) Retinal toxicity and visual disturbances
- C) Conjunctival hyperemia or redness
- D) **Increased intraocular pressure**

204

What are the potential side effects of using topical ganciclovir for HSV keratitis? (Select 2)

- A) Ocular irritation or stinging sensation
- B) Retinal toxicity and visual disturbances
- C) Conjunctival hyperemia or redness
- D) Increased intraocular pressure



205

Ocular HSV

- **Oral Antivirals (Category B)**
 - Acyclovir 400 mg 5x/day x 10 days
 - **ONLY antiviral approved for use in lactating women**
 - Valacyclovir 250 mg tid x 7 days
 - Famciclovir 500 mg tid x 7 days
- **Topical Antivirals (Category C)**
 - Trifluridine
 - Zirgan
- **Stromal/AC Rxn Involvement**
 - Topical Prednisolone Acetate 1%
 - Loteprednol 1%



206

HSV Recurrence

- Prophylaxis (**Category B**): Oral therapy
 - Acyclovir 400 mg bid po
 - Valacyclovir 250 mg bid po
 - Famciclovir 500 mg qd po
- Long-term use of antivirals
 - CMP and liver/kidney monitoring



207

Case Question

28 WF YO presents with bilateral ON edema (see photo)

Based on this case information, what statement is most likely to be true?

- A. Not a malignant hypertensive crisis
- B. MRI assessment is not appropriate
- C. It is safe to assume lumbar puncture readings are within normal ranges
- D. B-Scan ultrasonography may aid investigation



208

Case Question

28 WF YO presents with bilateral ON edema (see photo)

Based on this case information, what statement is most likely to be true?

- A. Not a malignant hypertensive crisis
- B. MRI assessment is not appropriate
- C. It is safe to assume lumbar puncture readings are within normal ranges
- D. **B-Scan ultrasonography may aid investigation**



209

Which of the following pharmacological treatments is most commonly used to manage papilledema caused by increased intracranial pressure? (Select 2)

- A) Mannitol
- B) Timolol
- C) Pilocarpine
- D) Tropicamide
- E) Acetazolamide



210

Which of the following pharmacological treatments is most commonly used to manage papilledema caused by increased intracranial pressure? **(Select 2)**

- A) Mannitol
- B) Timolol
- C) Pilocarpine
- D) Tropicamide
- E) Acetazolamide



211

Which of the following conditions may be exacerbated by the use of acetazolamide? **(Select 2)**

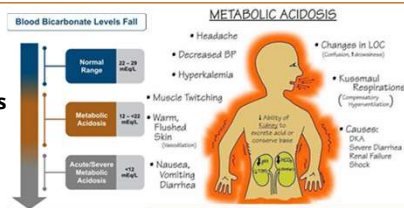
- A) Dehydration
- B) Metabolic alkalosis
- C) Metabolic acidosis
- D) Hypertension



212

Which of the following conditions may be exacerbated by the use of acetazolamide? **(Select 2)**

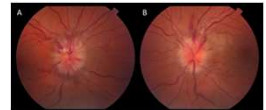
- A) Dehydration
- B) Metabolic alkalosis
- C) Metabolic acidosis
- D) Hypertension



213

Papilledema

- Dx of Exclusion
 - MRI/MRV (w/ and w/o contrast)
 - LP for elevated CSF
- Idiopathic Intracranial Hypertension (IIH)
 - Lifestyle changes/diet/weight loss
- Tx
 - Oral Acetazolamide or Topiramate
 - Metabolic Panel
 - **DEHYDRATION**
- Category C
- Most cases, monitor x 3-6 months
 - Repeat VF/OCT
 - Co-manage w/ ophth and neuro-OPH

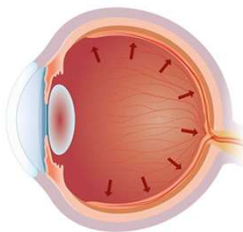


214

Case Question

How does acetazolamide help in the management of ocular hypertension? **(Select 1)**

- A) By reducing the production of aqueous humor
- B) By increasing the outflow of aqueous humor
- C) By decreasing the resistance of the trabecular meshwork
- D) By dilating the pupil to improve drainage

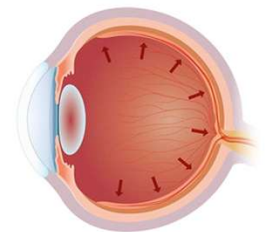


215

Case Question

How does acetazolamide help in the management of ocular hypertension?

- A) By reducing the production of aqueous humor
- B) By increasing the outflow of aqueous humor
- C) By decreasing the resistance of the trabecular meshwork
- D) By dilating the pupil to improve drainage



216

What is the primary concern with excessive dosing of topical timolol? (Select 1)

- A) Increased risk of rebound intraocular pressure elevation
- B) Potential for systemic beta-blocker effects such as bradycardia and hypotension**
- C) Corneal toxicity leading to epithelial breakdown
- D) Development of acute angle-closure glaucoma

217

What is the primary concern with excessive dosing of topical timolol? (Select 1)

- A) Increased risk of rebound intraocular pressure elevation
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218

Which of the following systemic conditions is most commonly associated with Roth spots on fundus examination? (Multiple Response)

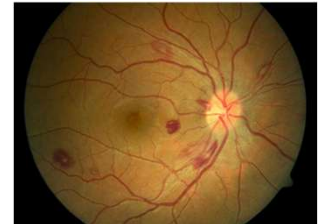
- A) Endocarditis**
- B) Anoxia**
- C) Leukemia**
- D) Sickle cell disease**



219

Which of the following systemic conditions is most commonly associated with Roth spots on fundus examination?

- A) Endocarditis**
- B) Anoxia**
- C) Leukemia**
- D) Sickle cell disease**



220

Red Light, Green Light

- You will be shown a picture of an ocular disease.



221

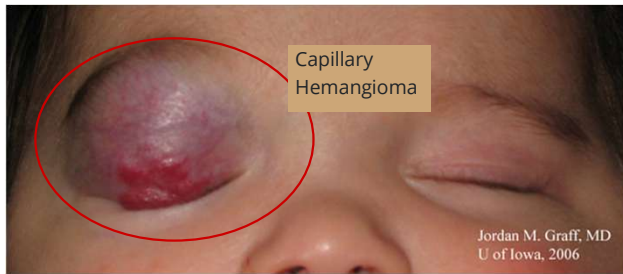
What am I?



Jordan M. Graff, MD
U of Iowa, 2006

222

What am I?



223

What is the main risk factor associated with this condition?

- A. Iridodialysis
- B. Positive TSH
- C. Keratoconjunctivitis
- D. Amblyopia

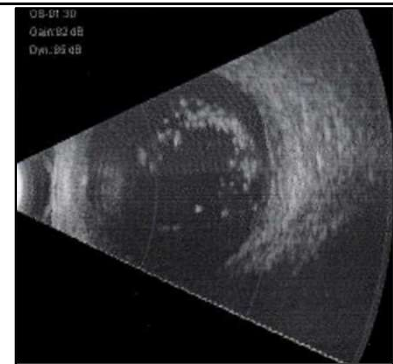
224

What is the main risk factor associated with this condition?

- A. Iridodialysis
- B. Positive TSH
- C. Keratoconjunctivitis
- D. Amblyopia

225

What am I?



226

What ocular condition does the B-Scan ultrasound image display?

- A. Exudative Retinal Detachment
- B. Ocular Histoplasmosis
- C. Asteroid Hyalosis
- D. Hemorrhagic Choroidal Detachment

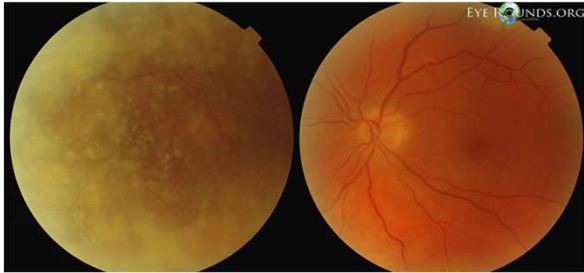
227

What ocular condition does the B-Scan ultrasound image display?

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- D. Hemorrhagic Choroidal Detachment

228

Asteroid Hyalosis



229

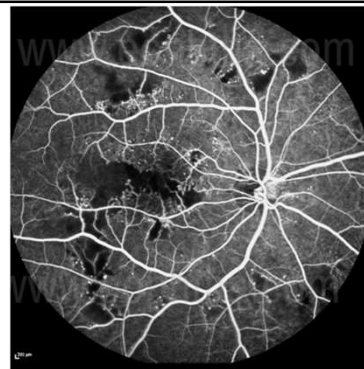
EyeRounds.org



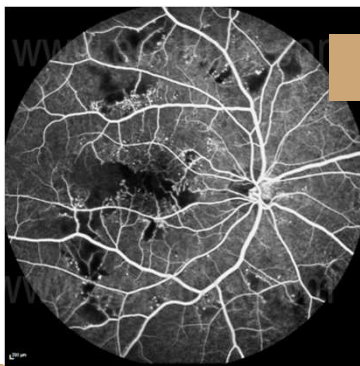
230

NAME THAT
TEST

231



232



IVFA

233

All are true statements about IVFA EXCEPT ?

- A. Capillary filling defects can be seen in diabetes and retinal vein and artery occlusion
- B. Window defect implies partial or total loss of blocking effect of RPE.
- C. Arterial macroaneurysms are example of leakage due to the permeability loss of vessels
- D. Choroidal filling is the last phase

234

All are true statements about IVFA EXCEPT ?

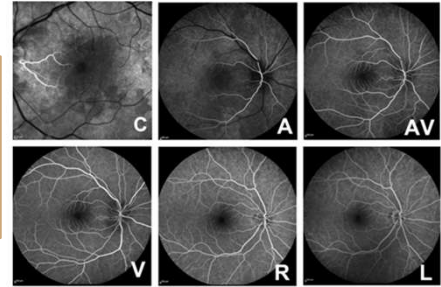
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- **B.** Window defect implies partial or total loss of blocking effect of RPE.
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235

IVFA

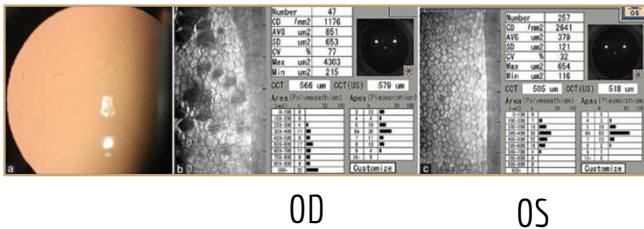
Phases of fluorescence angiography

- C. Choroidal
- A. Arterial
- AV. Arteriovenous
- V. Venous
- R. Recirculation
- L. Late phase.



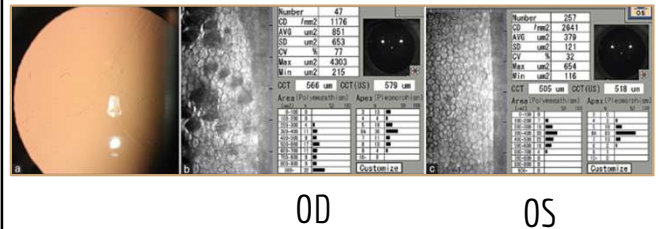
236

Name that test?



237

Spectacular Microscope: Endothelial Cell Count/Density



238

Case

Based on the specular microscope readings, what **appropriate** conclusion can be made? (**SELECT TWO**)

- A. This an ophthalmological test that analyzes the cells of the corneal epithelium
- B. The test reveals a normal uniform hexagonal mosaic of cells
- C. Invasive diagnostic tool
- D. A possible differential diagnosis is Schlichting Dystrophy
- E. Cataract surgery is an option is this patient

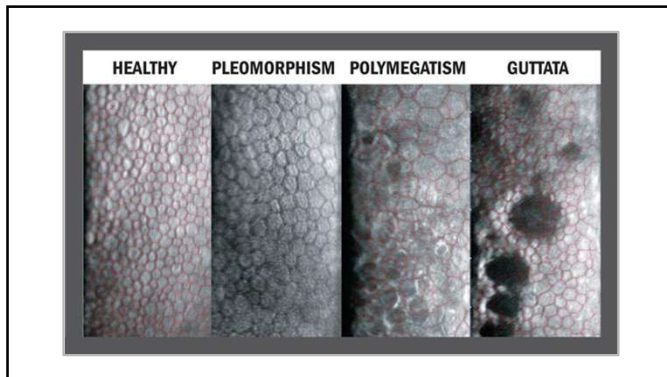
239

Case Question

Based on the specular microscope readings, what **appropriate** conclusion can be made? (**select 2**)

- A. This an ophthalmological test that analyzes the cells of the corneal epithelium
- B. The test reveals a normal uniform hexagonal mosaic of cells
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240



241

Name that test?



242

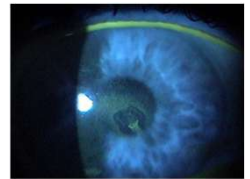
In severe stages, this test will yield decreased corneal sensitivity in all ocular conditions below EXCEPT?

- A. Neurotrophic Keratitis
- B. Herpetic Keratitis
- C. Acanthamoeba Keratitis
- D. Keratoconus
- E. Recurrent Corneal Erosion
- F. Diabetes

243

In severe stages, this test will yield decreased corneal sensitivity in all ocular conditions below EXCEPT?

- A. Neurotrophic Keratitis
- B. Herpetic Keratitis
- C. Acanthamoeba Keratitis
- D. Keratoconus
- E. Recurrent Corneal Erosion
- F. Diabetes



244

Case 9

- A 25-year-old male who had been experiencing a right-sided subcostal tenderness and increasing fatigue for the last several months.
- He also had noticed dark urine, jaundice and a 60 pound weight loss.



245

Case 9

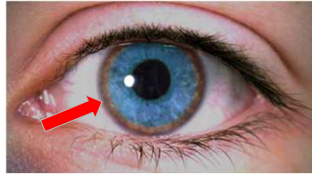
- Based on your slit lamp exam, what is the name of this ocular finding?
- A. Krukenberg's spindle
- B. Kayser Fleischer Ring
- C. Stocker's line
- D. Whorl Keratopathy



246

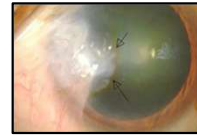
Case 9

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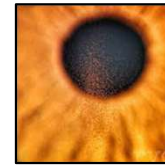


247

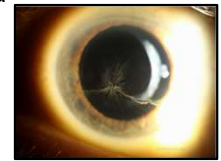
Pigmented deposits on the cornea



Stocker's line



Krukenberg spindle

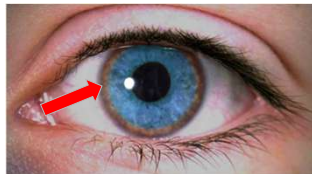


Whorl Keratopathy

248

Case 9

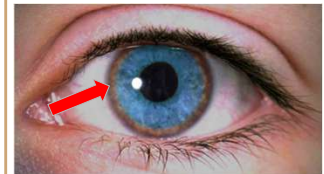
- What systemic disease are you concerned about based on your ophthalmic findings?
- A. Parkinson's Disease
- B. Cystic Fibrosis
- C. Wilson's Disease
- D. Fabry Disease



249

Case 9

- What systemic disease are you concerned about based on your ophthalmic findings?
- A. Parkinson's Disease
- B. Cystic Fibrosis
- C. Wilson's Disease**
- D. Fabry Disease



250

Case Question

Which of the following statements below is incorrect regarding the Wilson's Disease diagnostic work-up?

- A. A liver biopsy is possible
- B. Blood tests can monitor the liver function
- C. Liver tissue biopsy may reveal elevated levels of creatine
- D. Genetic mutations may be observed through blood analysis

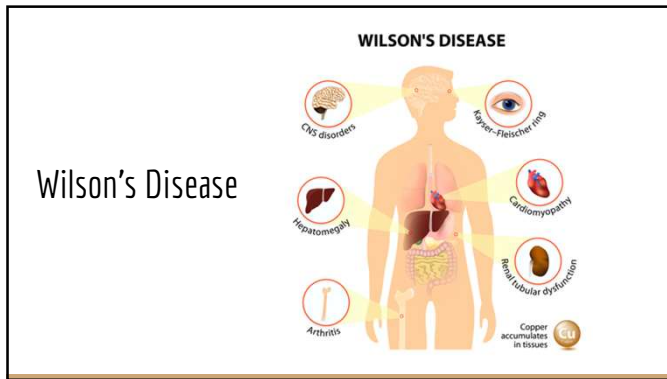
251

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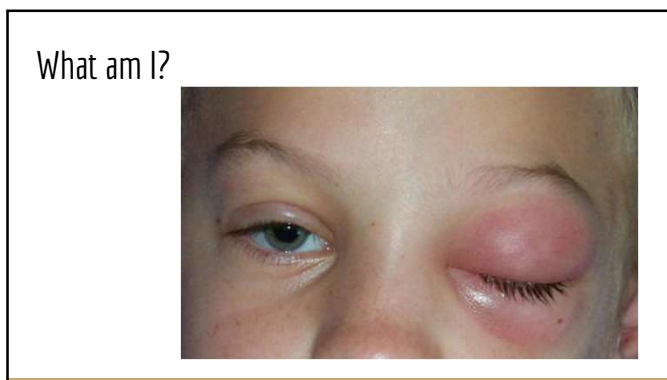
252



253



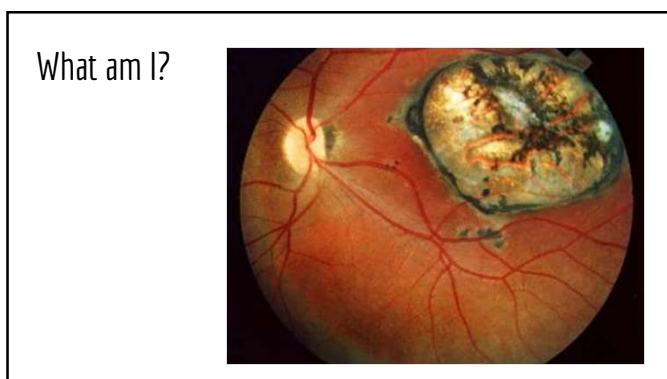
254



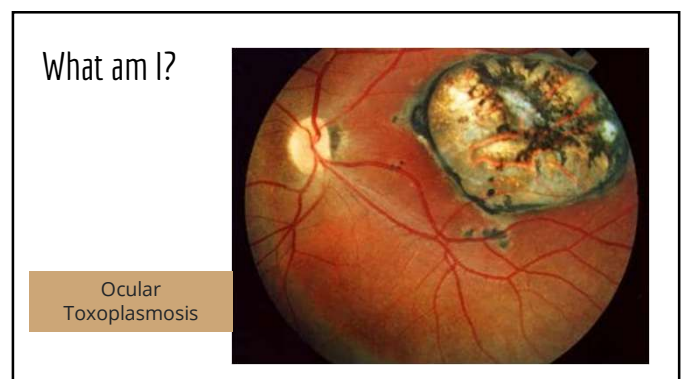
255



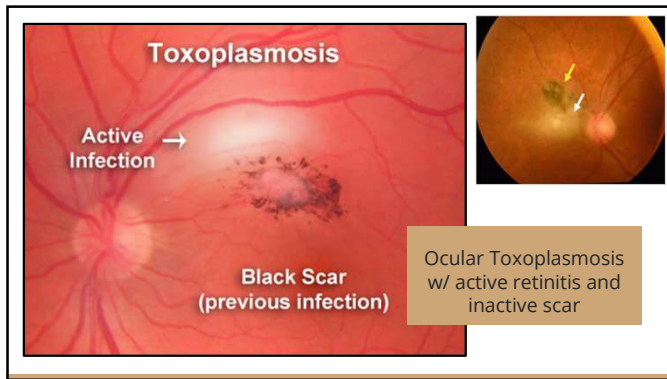
256



257



258



259

What am I?



260

What am I?



Dacryocystitis

261

What am I?



262

What am I?



Basal Cell Carcinoma

263

End

264

Getting Hosed

Clinical Diagnosis & Management of Traumatic Iridodialysis

Breanne McGhee OD, FAAO
Pacific University College of Optometry
Ochsner Medical Center



265

Case 26 YO WM

- **CC:** red, painful, photophobic OS after accidentally being injured with a compressed air hose nozzle
- **No** safety eyewear protection was worn at the time of the accident



266

Clinical Findings

- **VA (unaided):**
 - OD: 20/20
 - OS: 20/400
 - No improvement to pinhole
- **Pupillary testing**
 - Distorted, irregular D shaped OS pupil (-)APD
- **GAT:**
 - 18mmHg OD | 19 mmHg OS

267

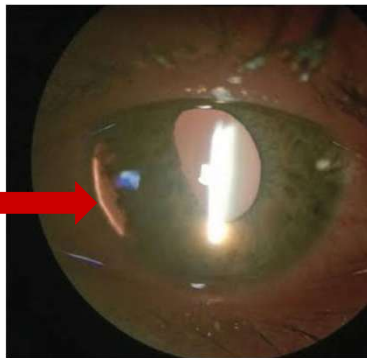
Clinical Findings Cont'd

- **Slit lamp:**
 - Mild nasal bulbar conjunctival abrasion
 - Mild conjunctival injection
 - Grade 1+ traumatic iritis
 - Moderately diffused central corneal edema
 - Trace hyphema
 - Sectoral disinsertion of the iris located inferior nasally from 8 o'clock to 10 o'clock with a corresponding transillumination defect

268

OS Findings

Iridodialysis with accompanying inferior nasal transillumination defect



269

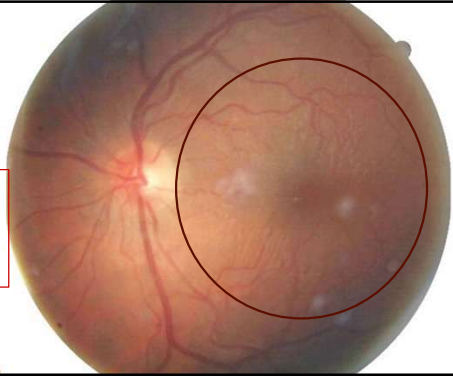
Clinical Findings

- Anterior segment findings in the right eye (OD) were unremarkable.
- **Gonioscopy was deferred** due to the presence of active inflammation and hyphema.

270

OS Findings

Diffuse radial striae within the macular zone



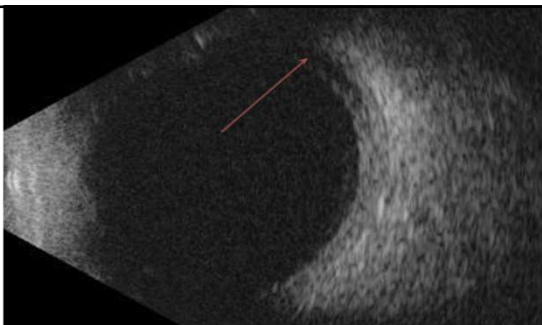
271

Fundus Assessment OS

- Multiple pre- and subretinal hemorrhages peripherally in the left eye.
- Retinas were intact with no holes, breaks or tears.

272

B-Scan OS



Presence of fluid in the left eye's nasal suprachoroidal space & confirmed no signs of a retinal detachment.

273

Assessment & Plan

- **Dx:** large iridodialysis, traumatic iritis, and commotio retinae OS was made.
- **Rx** topical cyclopentolate 1% BID, erythromycin topical ophthalmic 0.5 % ointment TID and Pred Forte (prednisolone acetate, Allergan) Q3H in the left eye until his follow-up in 24 hours.
- **Advised** head elevation during sleep and begin topical lubricants for anterior surface irritation.
- **Avoid** ASA for pain management; consider oral Tylenol

274

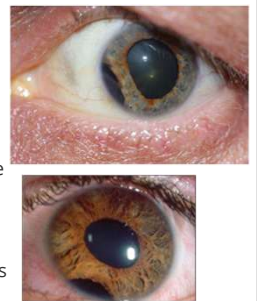
Case Follow Up

- The next day the patient exhibited significant improvement in ocular signs and symptoms.
- The conjunctival abrasion and iritis resolved, he showed improved corneal edema and resolving hyphema
- Referrals were made to retina specialty for posterior segment evaluation and general ophthalmology for possible surgery.

275

Iridodialysis

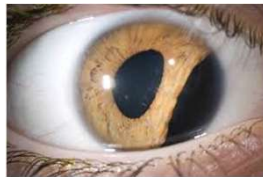
- Iridodialysis is the **separation of the iris root from its ciliary body** insertions
- Commonly sequelae of blunt or penetrating **ocular trauma**.
 - However, intraocular surgical procedures or congenital causes are possible
- Occurrences are commonly **unilaterally and sectoral**,
 - although complete dialysis of the iris have been reported



276

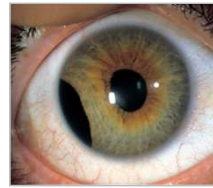
Iridodialysis

- The detachment of the peripheral iris root, the thinnest attachment, results in the classic **"D-shaped" pupil sign**
 - where the pupillary margin, opposite of the dissection, flattens.

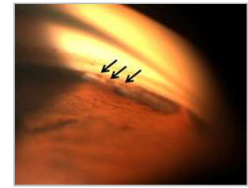


277

Iridodialysis vs Cyclodialysis



Separation of the iris root from its attachment to the anterior ciliary body

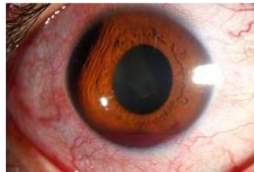


Separation of the ciliary body from its insertion at the scleral spur

278

Iridodialysis Clinical Presentation

- Pain, traumatic uveal inflammation
- Conjunctival injection
- Subconjunctival hemorrhage
- Hyphema
- Corneal abrasion
- Decreased or increased IOP
- Angle recession
- Vitreous hemorrhage or retinal detachments
- Photophobia
- Unilateral diplopia



279

Treatment & Management

- Management depends on the **size and location** of the iridodialysis.
 - Small, localized dialyses** (<3 clock hours) may resolve spontaneously during post-inflammatory period
 - May not require treatment
- Cosmesis is also a concern.

280

Treatment & Management

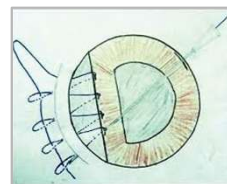
- Superior** dialyses are often covered by the upper lid and may present with fewer concerns,
 - Whereas temporal or inferior iridodialyses are more symptomatic.
- Larger dialysis** (more than 2 clock hours) requires a non-emergent referral for surgical intervention,



281

Treatment & Management

- Surgical interventions**
 - Depends on location & amount of iris area torn



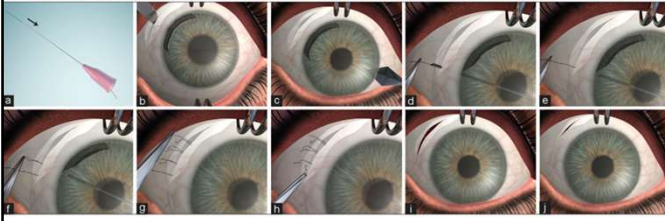
Cobbler Method



Hang Back Method

282

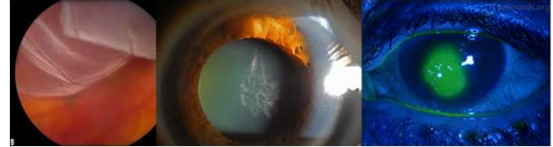
"Sewing Machine" Management



283

Treatment & Management

- Associated collateral ocular trauma complications
 - (e.g., *corneal abrasion, elevated IOP, retinal detachment*)
 - must be addressed, treated and managed accordingly with topical ophthalmic preparations or surgical interventions.



284

Treatment & Management

- **Cycloplegics (anticholinergic drugs)** are effective in alleviating pain
- **Topical corticosteroids** and **non-steroidal anti-inflammatory agents** can reduce acute immune responses.
- **Anti-glaucoma** medications may be used to lower IOP in ocular hypertensive concurrent cases
 - I.e *Beta-blockers, alpha agonists, and carbonic anhydrase inhibitors*
 - Avoid PGAs



285

Clinical Considerations

- Following the resolution of any accompanying inflammatory reactions, gonioscopy can rule out any trabecular meshwork damage or angle recession.
- Dialyzed angles with under 180° involvement have a lower risk for the development of secondary angle recession glaucoma.
- The **prognosis of iridodialysis is good** post-surgical therapy

286

Follow Up

- The patient returned asymptomatic and was happy with the cosmetic outcomes at his three-month follow up post-surgical iris repair.
- Visual unaided acuities were **20/20 OD, 20/20 OS.**
- His anterior and posterior segment findings were unremarkable with normotensive IOP in both eyes.
- Sequential follow ups at six months revealed stable findings with the patient remaining stable at each visit.
- Being stable, annual clinic visits were recommended for observation.

287