

What Every Tech Should Know About Ocular Emergencies

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This lecture is graphic!



2/10/2016

Sight Gags by Scott Lee, O.D.



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Rule #1

Entire Staff Needs To Be Trained

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3 Things to always remember

- Everyone must be trained in emergencies! ...training
- Must know who to contact! ...too late to look it up ...post it
- There is NO SUCH THING AS A ROUTINE PATIENT until the exam is complete



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What is an Ocular Emergency?

Get help from the audience



Is this a real picture or a fake one?

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Questions

- Who is willing to share a story of an emergency?
- How many of your still patch?
- How many of you have engaged in an emergency?
- How many of you are afraid of emergencies in your office?

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For today

- An ocular emergency is a condition that can cause a sudden loss of, or decrease in a persons vision that could lead to a permanent condition



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Before and after

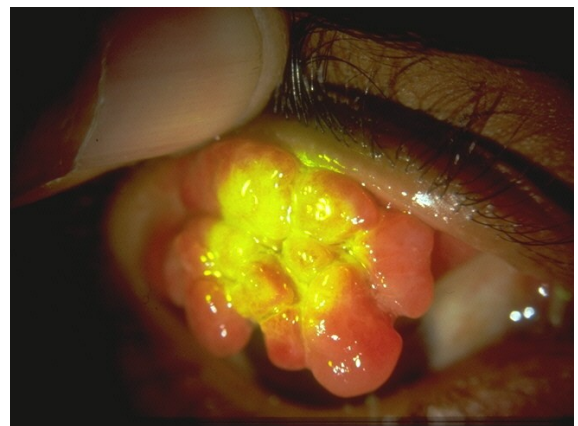


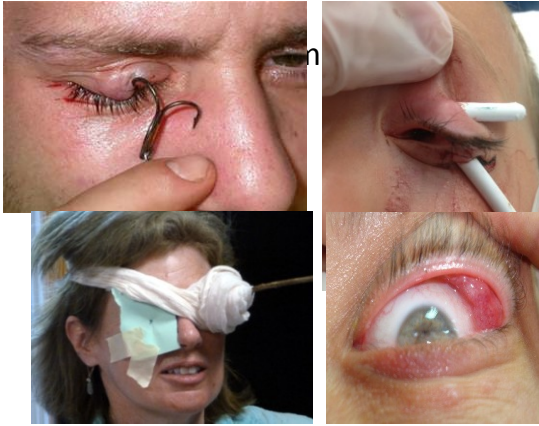
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Lid Lacerations



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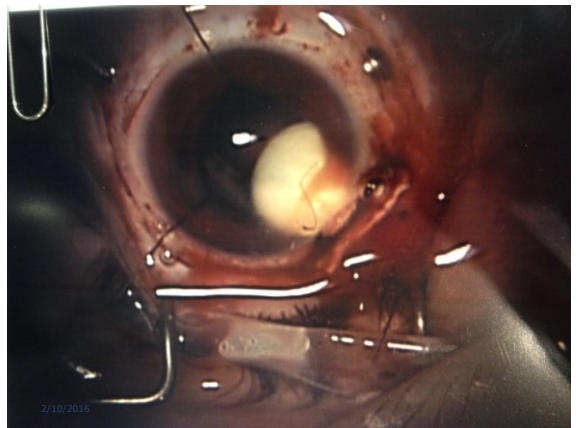


Impaled Objects



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After



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Stomach a little sensitive????

- Please turn your head or look down about now! Next slide Not good!

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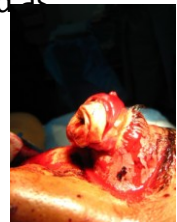
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Not just the globe!



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Triage is defined as:



- The process of sorting people based on their need for immediate medical treatment as compared to their chance of benefiting from such

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Ocular Presentations can be Sorted into 4 Classifications

- Emergency – Right now
- Urgent – Today
- Priority – This week
- Routine – Next Available



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What to do?

- Don't make a diagnosis?
- If no doctor is available, check office policy/use an ER
- This is a certifiable walk-in
- Do not delay if it is a true emergency
- Liability is on the person giving instructions on the phone
- If the patient is unable to see have them wait for an ambulance...get the info from the patient

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Ocular Signs/Symptom



Emergencies

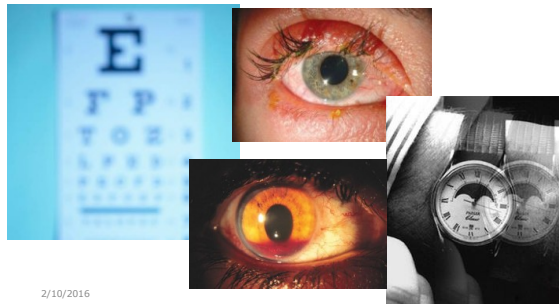
- Sudden increase in ocular pain
- Sudden blurred or loss of vision
- Bleeding in/around the eye
- Trauma
- Flashes/Floaters

Urgency

- Photophobia
- Pain
- Foreign Body
 - Organic
 - Non-organic
- Redness
- Abrasions

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The Obvious signs



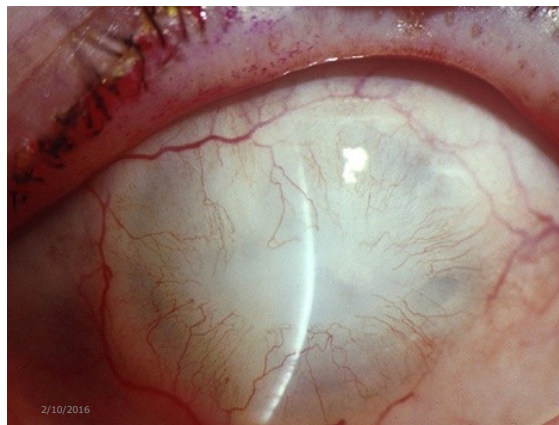
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Three True Emergencies

- Close angle glaucoma attack
- Alkali chemical burn
- Central retinal vein occlusion
- Globe penetrating trauma



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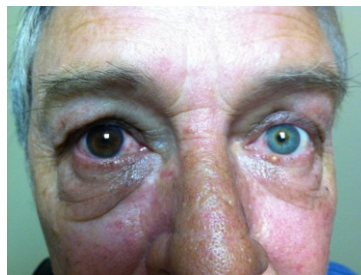


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Orbital Cellulitis

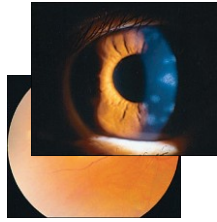


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Shingles



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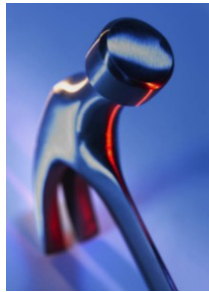
5 Steps for every emergency

- Step 1...know office protocols for an emergency
- Step 2...identify that an emergency exist
- Step 3 Get help...notify your doctor/other staff mbrs
 - Most senior medical person will stay with the patient
 - One will call 911
 - One will go and direct medical personnel to patient location
- Step 4 Call 911 if life, death or oversight is

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Emergency Tool Box

- Blood Pressure Kit
 - For suspected CRAO
 - Stroke in eye...blockage
- Humphrey's Visual Field
- Thermometer pt's with suspected Cellulitis
- Fox Shield and Tape for trauma
- PH Strips for chemical testing after irrigations
- Diamox to lower IOP



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The Importance of Early Diagnosis *Initial Visual Acuity at Treatment*

- Initial better VA means better final visual outcome
- Regardless of treatment, earlier detection results in better visual outcomes

TAP report no. 1 Arch Ophthalmology 1999



The Good

The Bad

The Ugly

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Patient Treatment Procedures

- Inform provider immediately
- Case History...complete Hx
- Visual acuity is critical...must be attempted
- Pressures are critical (projectile FB or possible aqueous leak needs extreme caution)
- In case a provider is not present...see office policy manual
- Know all office protocols for emergency and urgent care...

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Technician Procedure



- Never attempt any procedure in which you are not trained, proficient, and approved by your doctor
- When you identify an emergency...communicate with other staff members what is going on and to be ready to assist if necessary
- Don't be a hero, whom ever is most experienced and capable should be there to provide over sight (doctor)
- Alert the nearest ER (irrigate if needed) when

Pick a Scenario



- The exploding bottle of hair dye
- The curling iron burn
- The paper cut from a grocery bag
- The pilot on a bike
- Pet Chicken pecked owner in eye (fungal infection) LA
- Walk into waiting area finding unconscious patient
- Domestic Abuse Case

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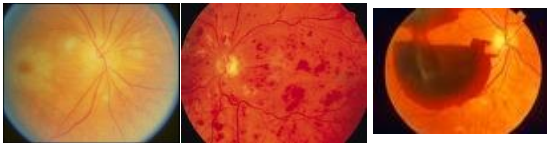
Immediate Classification

- A. Sudden Loss of Vision
- B. Flashes of Light
- C. Sudden Spots in Front of Eyes
- D. Double Vision
- E. Blood in Eye
- F. Blunt Trauma
- G. Penetrating Injury
- H. Chemical Burn



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A. Sudden Loss of Vision (Painless)



- Central Retinal Artery Occlusion
- Central Retinal Vein Occlusion
- Vitreous Hemorrhage

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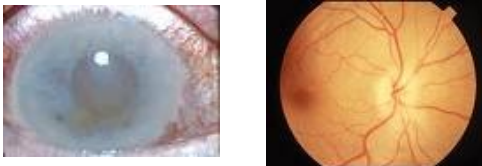
A. Sudden Loss of Vision (Painless)



- Ischemic Optic Neuropathy
- Retinal Detachment

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A. Sudden Loss of Vision (Painful)

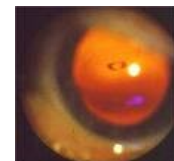


- Acute Angle Closure Glaucoma
- Optic Neuritis

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B. Flashes of Light

- Retinal break or detachment
- Posterior Vitreous Detachment



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C. Spots in Front of Eyes



- Transient spots
 - Migraine syndromes



- Long-standing spots
 - Posterior vitreous detachment
 - Vitreous hemorrhage
 - Floaters (syneresis)

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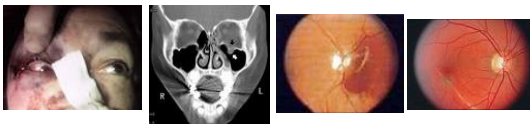
E. Blood in the Eye



- Hyphema
- Subconjunctival hemorrhage

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F. Blunt Trauma



- Blowout or orbital floor rupture
 - Must rule out retinal detachment or choroidal rupture
 - Must also rule out traumatic optic neuropathy

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G. Penetrating Injury

- Typically a high speed or sharp object
- Must intervene quickly to prevent endophthalmitis esp. if organic matter
- Seidel sign



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H. Chemical Burn

- Irrigate all chemical burns with sterile saline immediately and extensively
- Must try to:
 - Identify substance (acid vs base)
 - Timeline of chemical exposure



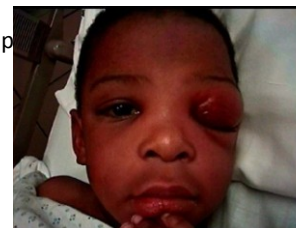
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How long do we irrigate?

Urgent Classification

- Red Eye
- Lid Lumps and Bump
- Protrusion of Eye
- Contact Lens Pain

Cellulitis



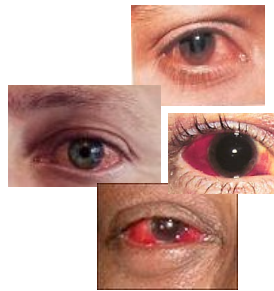
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Abuse Cases – State Laws - Bullying



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A. Red Eye

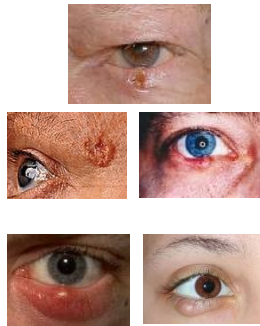


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- Identify exposure or likely FB incident
- PAIN is first indication
- Followed by:
 - Decreased VA
 - Discharge
 - Excessive tearing
 - Contact lens wearer?
 - Itching
 - Sensitivity to light

B. Lid Lumps and Bumps

- Again, PAIN is the #1 indication
- Must determine how long has it been there and if there are any recent changes to appearance
- Hordeolum/Chalazion vs BCC/SCC/sebaceous carcinoma

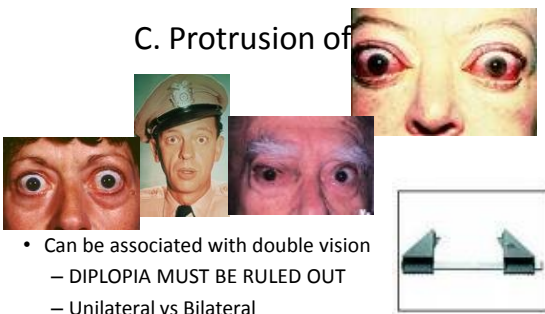


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C. Protrusion of

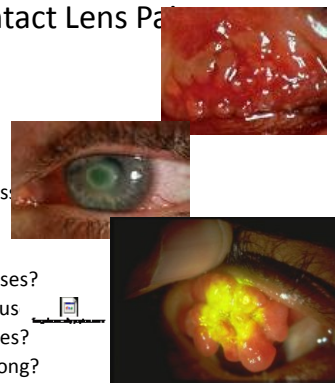


- Can be associated with double vision
 - DIPLOPIA MUST BE RULED OUT
 - Unilateral vs Bilateral
- Lid retraction vs Proptosis
- Can be related to thyroid, tumors, pseudotumor

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D. Contact Lens Pa

- Urgent condition if:
 - PAIN
 - Discharge
 - Decreased VA
 - Significant redness
 - Light sensitivity
- Questions to ask:
 - What type of lenses?
 - Solutions / drop us
 - How old are lenses?
 - Painful for how long?



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B. Slow, Progressive VA Decrease



- Likely related to refractive error changes, cataracts, age-related macular degeneration, or large total number of birthdays celebrated (age)



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C. Lost or Broken Eyewear

- Other patient concerns that fall into this classification are:
 - Chronic eye burning, tearing
 - Headaches that have not changed recently
 - Long-standing ptosis that has not changed recently



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New Creative Ways



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Routine Classification

A. EVERYTHING ELSE



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Questions to Ask Every Potential Immediate Patient

- Where are you? How close are you to a hospital?
- When did this begin? How long has the eye been bothering you?
- On a pain scale 0-10, where are you?
- Any decreased visual acuity (any change in vision)?

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Accurate documentation is always critical!

Mandatory Screening Tests

- Monocular aided visual acuity
 - Use pinhole technique if VA <20/40
- Non-contact tonometry
- Confrontational visual fields or FDT screening, if possible
- Exophthalmometry...speak to your doctor first
- Red cap desaturation or Color vision

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Question

- What is the top cause of malpractice claims?
- Answer: misdiagnosis due to failure to see patient



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Things that are essential in Emergencies

- Answer “what was the cause of reduced acuity?”
- If the issue internal? Did we dilate the patient?
- Was the patient referred? Do we have follow-up referral system?
- Did the patient show-up for the referral appt?
- Did you practice the “Duty to Warn or Informed Consent”
- Do you keep good records



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First aid for eyes

- Do not try to remove any “foreign body” except by flushing or sweeping, because of the risk of causing more damage to the surface of the eye
- Do not touch, press, or rub the eye, and do whatever you can to keep children from touching it (a baby can be swaddled as a preventive measure)
- Flush from medial to lateral to prevent cross contamination
- Gently pour a steady stream of lukewarm water from a pitcher (do **not** heat the water) across the eye...why is this warm?
- If a foreign body is not dislodged by flushing, it will probably be necessary for a trained medical practitioner to remove the FB.

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Irrigati

- Irrigate from medial to lateral
- If chemicals are involved use litmus paper to verify neutrality of chemicals



How long do we irrigate?

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Irrigati

- Morgan Lens
- Solutions...saline, Dacriose, water
- Litmus pH paper test
- Normal pH reading 7.3 – 7.7
- Irrigate for 30 minutes



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Domestic Violence

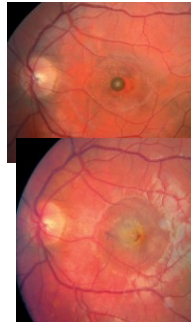
- Shaking Baby Syndrome
- Spouse Abuse
- Child Abuse
- Elderly Abuse
- Fights
- Any violence
- Any accident



• Documentation!!!!!!

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Laser Point



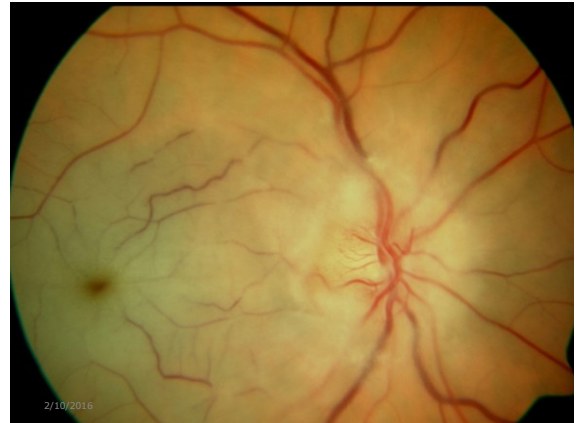
- **Retinal Injury in a Teenage Boy and Laser Pointers.**
- A photograph of the fundus of the left eye (Panel A) shows central subretinal hemorrhage (arrow) and retinal edema, suggesting a break in Bruch's membrane caused by a disruptive laser burn. A photograph of the fundus of the right eye (Panel B) shows several hyperpigmented areas in the foveolar region (arrows). These findings are consistent with scars in the pigment epithelium as a result of a thermal laser injury. A photograph of the fundus of the left eye after 4 months

BOLO for New Ways To Injure

- Manhattan ophthalmologist says he's performed approximately 20,000 corrective eye procedures. On Nov. 6, he did something different: he implanted a piece of platinum jewelry beneath the surface of a patient's eye.

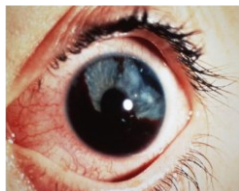


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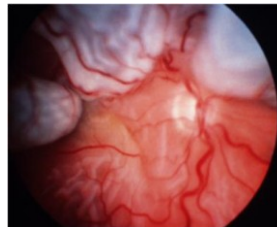
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Call it



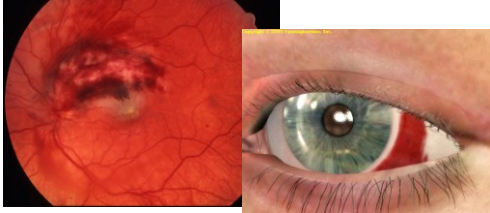
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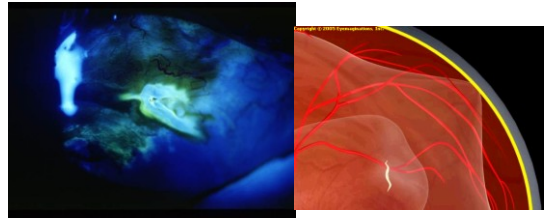
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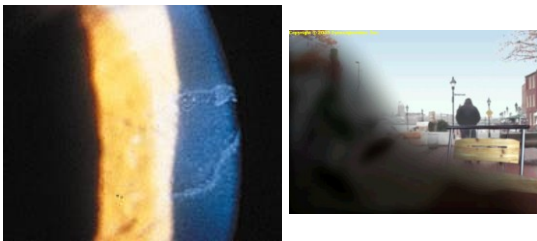
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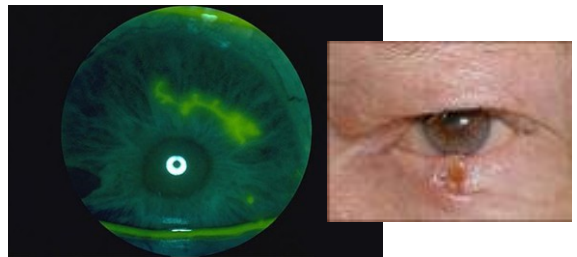
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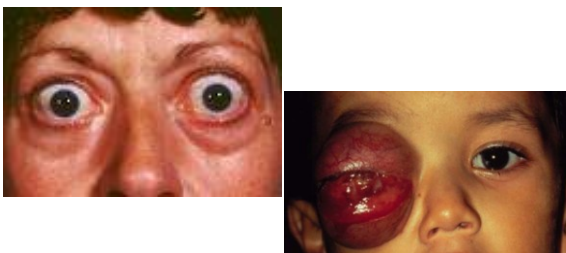
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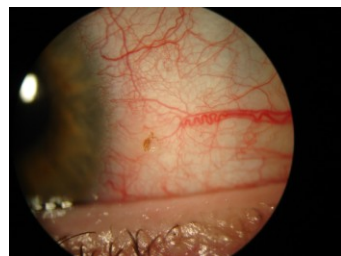
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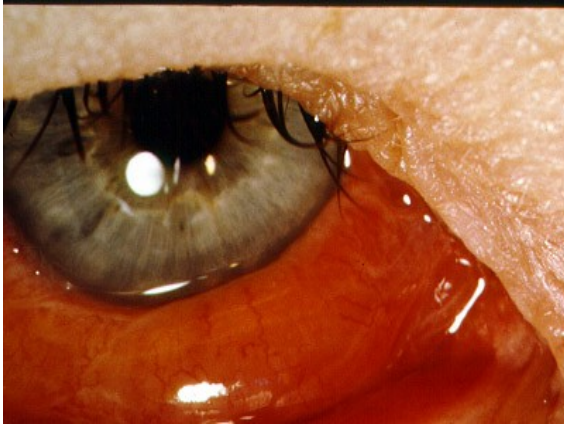


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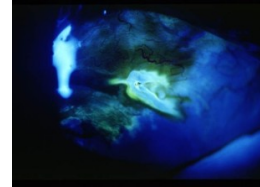


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Suspected Global Penetration

- Protruding object
- Positive Sidel
- Organic Object



Positive Sidel

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Pinquecula

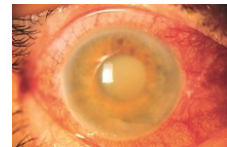
- Elevated “bump” or nodule (fatty plaque), usually in nasal bulbar conjunctiva
- **Symptoms:** occasional irritation/redness, allergies can cause flare-up
- **Treatment:** Lubricants (artificial tears) PRN, cool compresses with allergies



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Acute Glaucoma (closed angle)

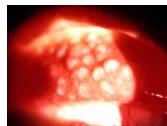
- Sudden onset of high Intraocular pressure (IOP)... caused by blockage of aqueous drainage
- **Symptoms:** Pain, blurred vision, colored lights around lights, frontal headache, nausea and vomiting
- **Signs:** High IOP, clouded/misty cornea, red eye, fixed or mid-dilated pupil
- **Treatment:** Preceptor/EVAC



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Conjunctivitis

- The “infamous” pink-eye
- Numerous causes:
 - Bacteria
 - Viruses
 - Allergies
 - Injury (abrasions, foreign bodies, blunt trauma)
 - Toxic Reactions (chemicals)
 - Often difficult to diagnose exact etiology



- **Tips for Diagnosis:** “Take detailed history”

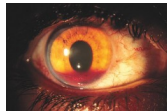
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Summary

- 4 Classifications for Clinical Management
- Examples of Symptoms Within Each Classification
- Probable Diagnosis and Appearance
- Most Important Questions to Ask Every Potential Patient

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Hyphema



- Typically from “blunt” trauma
- **Symptoms:** Pain, blurred vision
- **Signs:** Blood in anterior chamber (AC)
- **Treatment:** VA, evaluate globe for rupture, patch both eyes and immediate transfer



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Foreign Bodies

- **Non-Penetrating (cont.)**
 - Numb Eye with one gtt 0.5% Ophthaine or Paracaine
 - Use moistened cotton-tipped swab to gently remove FB
 - Erythromycin or Bacitracin ointment
 - F/U every 24hrs until symptoms resolve
 - May consider cycloplegic agent (1% Cyclopentolate)
- **Watch for Corneal Ulcers/Infections (discharge) = significant increase in**

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Foreign Bodies



- **Non-Penetrating** (not entering globe)
 - metal chips/sand/saw dust/plant material/etc.
 - take “careful” history (i.e. high speed?, falling objects?)
- **Symptoms:** FB sensation, tearing, history of a trauma
- **Treatment:**
 - Visual Acuity
 - Stain to visualize object or injury site (vital clues)
 - Irrigate with saline rinse

2/10/2016 May check under upper lid (often site of small

Diabetic Retinopathy

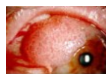
- Breakage in the blood vessels in the fundus
- Macula bleeding is more significant
- Ensure your patient has a take home Amsler Grid



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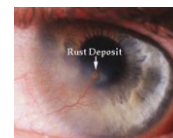
Allergic Conjunctivitis

- **Symptoms:** Usually both eyes, intense *itching*, recent exposure to known allergen, often past history of similar condition
- **Signs:** Chemosis, red and edematous eyelids
- **Treatment:** eliminate inciting agent, cool compresses, artificial tears PRN, vasoconstrictive agents (i.e. Visine, Naphcon-A PRN)



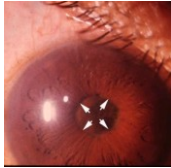
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Corneal Foreign Body



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Iris Bombe - Acute Glaucoma



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Questions

- Which is not urgent?
 - Recent onset of flashes and floaters
 - Sudden loss of vision
 - Foreign body from grinding machine
 - Gradual decreased in vision for 90 days
- Iris Bombe involves what main structures?
 - Iris, corneal, crystalline lens
 - Retina, crystalline lens
 - Corneal, retina
 - Sclera, cornea
- Which is not normally associated with a Hyphema
 - Blood in anterior chamber
 - Irregular pupil
 - Normal vision
 - Pain

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Questions

- Hordoleum is an emergency?
 - True
 - False
- Which is not normally urgent?
 - Sty
 - CRVO
 - Alkali burn
 - Acute glaucoma
- Which is not normally associated with a sty?
 - Bump on lid
 - Irregular pupil
 - Normal vision
 - Pain

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Questions

- What is the first **treatment** step on a walk-in patient?
 - Check pressures
 - Set-up referral
 - Check visual acuity
 - Wait for instructions from office manager
- Do you know where your emergency protocols are?

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Questions

- Which is the least urgent
 - Penetrating wound to globe
 - Overdue contact Rx
 - Sudden pain/blurred vision post trauma
 - Chemosis
- Hyphema's normally are associated with trauma?
 - True
 - False
- Which is not normally associated with a acute glaucoma?
 - Blood in anterior chamber
 - Irregular pupil
 - Steamy cornea
 - Pain

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Review Questions

- How long would you irrigate after an unknown chemical was splashed in the eye?
 - 5-10 min
 - 10-15 min
 - 15-20 min
 - 20-30 min
- If a patient has received severe facial burns, what can you do to the eyes?
 - apply a moist, sterile dressing for comfort
 - apply a heavy ointment for protection
 - apply protective safety glasses
 - apply a dry, sterile dressing for comfort

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Review Questions

- Where is the tape placed when patching?
 - a. forehead to chin
 - b. cheek to chin
 - c. forehead to cheek
 - d. chin to cheek
- What question do you ask the patient after you have finished patching?
 - a. how do you feel
 - b. can you open your eye
 - c. do you feel pressure
 - d. does it still hurt

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Review Questions

- A retinal detachment will normally be described by the patient as _____?
 - a. redness in vision
 - b. floaters
 - c. blood in the vision
 - d. part of the vision missing
- Which of the following questions IS NOT important to ask a patient experiencing floaters?
 - a. what time was your last floater
 - b. is the floaters transparent
 - c. is the floater stationary
 - d. how much does the floater weigh

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Review Questions

- Which of the following is the least urgent condition?
 - a. sudden severe pain
 - b. sudden loss of decrease in vision
 - c. change in prescription
 - d. blood in the anterior chamber
- What is a hyphema?
 - a. a wild animal
 - b. blood in the anterior chamber
 - c. blood in the posterior chamber
 - d. blood under the conjunctiva

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Prevalence of Ocular Diseases

Glaucoma 4.4 Million
Diabetic Retinopathy 5.3 Million
Intermediate AMD 8.0 Million

Source: *The Vision Problems in the U.S. Report, NEI, 2001*

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Thank you

<http://lynnslecturehelp.wordpress.com>

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