What Every Tech Should Know About Ocular Emergencies

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Rule #1

Entire Staff Needs To Be Trained

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

What is an Ocular Emergency?

Get help from the audience
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?

For today

• An ocular emergency is a condition that can cause a sudden loss of, or decrease in a person's vision that could lead to a permanent condition.

Before and after

Lid Lacerations
Impaled Objects

After
Stomach a little sensitive???

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

Not just the globe!

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

Ocular Presentations can be Sorted into 4 Classifications

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

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
Ocular Signs/Symptoms

**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

The Obvious signs

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

Orbital Cellulitis
Shingles

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 members
  - 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 eyesight is

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

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

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...

Technician Procedures

- 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 Scenarios

• 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

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

A. Sudden Loss of Vision (Painless)

• Central Retinal Artery Occlusion
• Central Retinal Vein Occlusion
• Vitreous Hemorrhage

A. Sudden Loss of Vision (Painless)

• Ischemic Optic Neuropathy
• Retinal Detachment

A. Sudden Loss of Vision (Painful)

• Acute Angle Closure Glaucoma
• Optic Neuritis

B. Flashes of Light

• Retinal break or detachment
• Posterior Vitreous Detachment
C. Spots in Front of Eyes

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

E. Blood in the Eye

- Hyphema
- Subconjunctival hemorrhage

F. Blunt Trauma

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

G. Penetrating Injury

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

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

Urgent Classification

A. Red Eye

B. Lid Lumps and Bumps

C. Protrusion of Eye

D. Contact Lens Pain

Cellulitis

How long do we irrigate?
Abuse Cases – State Laws - Bullying

A. Red Eye

• 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

C. Protrusion of Eye

• 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

D. Contact Lens Pain

• Urgent condition if:
  – PAIN
  – Discharge
  – Decreased VA
  – Significant redness
  – Light sensitivity
• Questions to ask:
  – What type of lenses?
  – Solutions / drop use
  – How old are lenses?
  – Painful for how long?
B. Slow, Progressive VA Decrease

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

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

New Creative Ways

Routine Classification

A. EVERYTHING ELSE

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)?

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

Question

- What is the top cause of malpractice claims?
- Answer: misdiagnosis due to failure to dilate the patient (ref: AOA)

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

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.

Irrigation

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

How long do we irrigate?

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

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

- Documentation!!!!!!

2/10/2016

Laser Pointers

- 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 (arrow). 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.

2/10/2016

Call it

2/10/2016

Call it

2/10/2016
Suspected Global Penetration

- Protruding object
- Positive Sidel
- Organic Object

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

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

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”

Summary

A. 4 Classifications for Clinical Management
B. Examples of Symptoms Within Each Classification
C. Probable Diagnosis and Appearance
D. Most Important Questions to Ask Every Potential Patient
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

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...

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
  - May check under upper lid (often site of small FBs)

Diabetic Retinopathy

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

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)

Corneal Foreign Body

- Plant Deposits
Iris Bombe - Acute Glaucoma

Questions

- What is the first treatment step on a walk-in patient?
  a. Check pressures
  b. Set-up referral
  c. Check visual acuity
  d. Wait for instructions from office manager

- Do you know where your emergency protocols are?

Questions

- Which is not urgent?
  a. Recent onset of flashes and floaters
  b. Sudden loss of vision
  c. Foreign body from grinding machine
  d. Gradual decreased in vision for 90 days

- Iris Bombe involves what main structures?
  a. Iris, corneal, crystalline lens
  b. Retina, crystalline lens
  c. Corneal, retina
  d. Sclera, cornea

- Which is not normally associated with a Hyphema?
  a. Blood in anterior chamber
  b. Irregular pupil
  c. Normal vision
  d. Pain

Questions

- Which is the least urgent?
  a. Penetrating wound to globe
  b. Overdue contact Rx
  c. Sudden pain/blurred vision post trauma
  d. Chemosis

- Hyphema's normally are associated with trauma?
  a. True
  b. False

- Which is not normally associated with a acute glaucoma?
  a. Blood in anterior chamber
  b. Irregular pupil
  c. Steamy cornea
  d. Pain

Questions

- Hordoleum is an emergency?
  a. True
  b. False

- Which is not normally urgent?
  a. Sty
  b. CRVO
  c. Alkali burn
  d. Acute glaucoma

- Which is not normally associated with a sty?
  a. Bump on lid
  b. Irregular pupil
  c. Normal vision
  d. Pain

Questions

- How long would you irrigate after an unknown chemical was splashed in the eye?
  a. 5-10 min
  b. 10-15 min
  c. 15-20 min
  d. 20-30 min

- If a patient has received severe facial burns, what can you do to the eyes?
  a. apply a moist, sterile dressing for comfort
  b. apply a heavy ointment for protection
  c. apply protective safety glasses
  d. apply a dry, sterile dressing for comfort

Review Questions
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

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

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

Prevalence of Ocular Diseases

**Glaucoma** 4.4 Million

**Diabetic Retinopathy** 5.3 Million

**Intermediate AMD** 8.0 Million


Thank you

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