Ocular Urgencies and Emergencies: Obtaining a Quality Triage

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Objectives

- Discern major & minor complaints of:
  - double vision
  - eye pain
  - decreased vision
  - flashes/floaters
  - headaches (related to vision)
- Learn proper triaging skills
- Quick overview of common associated conditions
Life of the On-Call Resident

Residency -
- 5-6 weeks throughout year on-call
- Telephone triage
- Urgency vs Emergency vs needs for a routine eye exam

Private Office -
- On-call doctors
History of Present Illnesses

Location
Severity
Quality
Relief/Modifiers
Associated signs/symptoms

Frequency/Timing
Context
Onset
Duration
FODLARCS

Frequency
Onset
Duration
Location
Associated signs/symptoms
Relief
Context
Severity
How Often Is It Happening?
FODLARCS

Frequency
Onset
Duration
Location
Associated signs/symptoms
Relief
Context
Severity
Onset

When does it happen?
FODLARCS

- Frequency
- Onset
- Duration
- Location
- Associated signs/symptoms
- Relief
- Context
- Severity
How long has this been going on?

*When do you first remember this being an issue?*
FODLARCS

**F**requency

**O**nset

**D**uration

**L**ocation

**A**ssociated signs/symptoms

**R**elief

**C**ontext

**S**everity
Location

Which eye?
Which area of the eye?
FODLARCS

F - Frequency
O - Onset
D - Duration
L - Location
A - Associated signs/symptoms
R - Relief
C - Context
S - Severity
FODLARCS

Associated signs/symptoms

Do other symptoms accompany your main complaint?

redness - itch - irritation - flashes - floaters - light sensitivity - foreign body sensation
FODLARCS

Frequency
Onset
Duration
Location
Associated signs/symptoms
Relief
Context
Severity
FODLARCS

Relief

Does anything make it better?
What have you tried?
FODLARCS

F requency
O ffset
D uration
L ocation
A ssociated signs/symptoms
R elief
C ontext
S everity
FODLARCS

Context

Environment

Visual Demand

Have patient put you in their scenario
FODLARCS

F: Frequency
O: Onset
D: Duration
L: Location
A: Associated signs/symptoms
R: Relief
C: Context
S: Severity
FODLARCS

Severity

Pain scale 1-10
Mild, Moderate, Severe
Changes since it began?
FODLARCS

F - Frequency
O - Onset
D - Duration
L - Location
A - Associated signs/symptoms
R - Relief
C - Context
S - Severity
"I see double"
Extraocular Muscles
Interviewing the Patient

Utilize lay-mans terms

Double vision
- Do things split in two?
- How long does it occur?
- How frequently does it happen?
- Tell me what you’re looking at when this happens
- Glasses
"I see double"

Is it a tumor?

Or is it just glasses?

Or 1 of 5 other things
"I see double"

Duration

How long has this been going on?
“I see double”

**Frequency**

How Often Is It Happening?

- **All the time**
  - Constant
- **It only happens for a second or two**
  - Transient/Intermittent
"I see double"

Relief

What have you tried to alleviate?
Does anything make it better?
What environment is it better in?

closing an eye
stop reading/computer
eye drops
wearing glasses
head position
blinking
"I see double"

**Context**

Certain tasks?
- reading, computer, driving
- non-specific

Detail: side to side, overlapping, or up and down?

Have patient put you in their scenario
- Lying down
- Recent head injury?
“I see double”

Severity

Has it improved or gotten worse since it began?
- “It’s been worsening since it began”
- “It’s minor but I want it addressed”
“I see double”

Onset/Timing

Is there a specific time that it occurs?
- End of the day
- Right when I wake up
“I see double”

Associated signs/symptoms

Do any other symptoms accompany your main complaint?
- provide examples

Headaches - strain - pressure behind the eye - squinting - fatigue
“I see double”

I. Glasses

II. Eye teaming/focusing disorder

III. Ghosting
   - High astigmatism
   - Dry eye
   - Cataract
   - Retinal issue
   - Migraine/aura

IV. Neurological
Presbyopia

Double vision
- eyes inability to focus & converge/work together
- typically transient
- Occurs with near tasks
Accompanying frontal headaches
Improves with eyeglasses
Convergence Insufficiency

Binocular Vision Disorder
- **Childhood**
- **Inability** of eyes to **converge**/work together
- **Near tasks**
  - after 10-15 mins of reading (or less)
- Lack of interest in reading
  - Words run together
  - Falling behind in school
- Management
  - **Spectacle correction**
  - **Vision Therapy** exercises
Image Ghosting

High astigmatism
- ~1-2D or more
- Image “smearing”
- Not a true form of double vision
- Multiple points of focus
Image Ghosting

Dry Eye
- Tear film 1\textsuperscript{st} media in contact with incoming light
- Distortions & scatter
- Blinking or drops will improve
**Cataract**
- Media opacification
- Dirty/cloudy window
- Will be constant
- Surgery or AR coating
Cataract
**Image Ghosting**

**Retinal Problem**
- Distortions caused by swelling or traction of the retina
- Discovered on DFE, OCT or Amsler grid testing
  - Vitreomacular Traction
  - Epiretinal Membrane
  - Hole
  - Macula edema $2^{\circ}$ to $X$
Epiretinal Membrane

Image: http://theretinagroup.com
VMT

Image: https://www.asrs.org
Macular Edema
Migraine Aura

Characterized differently patient to patient
- Shimmer around objects
- Triggers
- No ocular findings to confirm
- Neurology

Image: http://migravent.com
Nerve Palsy

Extraocular muscles controlled by 3 different cranial nerves
- Cranial Nerves III, IV & VI
- Arise from brain stem
- Lesion = deficit in movement
  - **Eyes misaligned = diplopia**
- Constant
- Worse in particular gazes
- Compensatory head position to alleviate
- Due primarily to tumor, vascular issue, neurodegenerative disease
3rd Nerve Palsy

Image: https://entokey.com
4th Nerve Palsy

Images: https://www.reviewofoptometry.com
6th Nerve Palsy

Images: https://media.nature.com
Double Vision

Less Concerning
- Presbyopia
- High astigmatism
- Convergence Insufficiency
- Dry eye
- Cataract

Highly concerning
- Retinal issue
- Migraine
- Nerve Palsy
Double Vision

Presbyopia
- Worsens with near work
- Intermittent/transient
- Glasses help
- Ages 40+

Nerve Muscle Palsy
- Constant
- Two separate images
- Trauma, HTN, Brain Lesion

Needs routine eye exam

Prompt exam indicated
“My eye hurts”
Interviewing the Patient

Utilize lay-mans terms

Eye “Pain”
- Sharp vs dull/ache
- Scratchy, itch--minor
- Pain scale 1-10
Only registers **pain**
- 70-80 branches of main nerves
- Nerve density: 7,000 receptors/mm²
  - ~400x skin epidermis

Any sensation felt = **pain**

Image: http://biosciences.rice.edu
“My eye hurts”

Duration

How long has this been going on?
- days, months, years
“My eye hurts”

Severity

How would you rate the pain 1-10?
- Corneal injuries are highly painful

How would you describe the pain?
- Sharp shooting vs dull/aching
“My eye hurts”

Location

Which eye or area?
Can you localize the pain?
Is it worse in one eye?
“My eye hurts”

**Frequency**

*How Often?*
- All the time
  - Constant
- It only happens for a second or two
  - Transient
“My eye hurts”

Associated signs/symptoms

Do any other symptoms accompany your main complaint?
-give examples

redness - tearing - light sensitivity - blurry vision
“My eye hurts”

Onset/Timing

Is there a specific time that it occurs?
- Morning vs evening
- Blinking
- End of the day

Has this happened before?
"My eye hurts"

**Relief**

What makes it better?
- Closing eye
- Eye drops
“My eye hurts”

**Context**

Have patient put you in their scenario

- Is it worse outside than inside?
- After removing CL
“My eye hurts”

I. Dry eye
II. Abrasion/Scratch
III. Ulcer
IV. Foreign Body
V. Herpes dendrite
Dry Eye

Severe forms highly painful
- Constant or intermittent
- worse towards end of the day
- Alleviated by artificial tears
- Worse in the dryer seasons (winter)
- Longstanding
- Slower onset

Image: https://www.reviewofoptometry.com
Abrasions/Scratches

- Acute onset
- Known cause
- Very **painful**
- Tearing, light sensitivity, redness
- Artificial tears may help
- Closing eye will help
- Foreign body sensation

Image: https://imagebank.asrs.org
Ulcer

- Acute onset that worsens
- **Contact lens wear**
- Highly sensitive to light
- Hot tubs
- Stagnant water sources

Image: http://morancore.utah.edu
Foreign Body

- Mechanics/Industrial workers
- Metallic, wood, debris
- Known etiology
- Acute onset

Image: https://decisionmakerplus.net
Herpes Dendrite

- Form of an ulcer
- Simplex or Zoster
- Slower onset
- painful
Non-corneal forms of eye pain

Anterior Uveitis
- High **light sensitivity**
- **Dull** ache
- Internal eye inflammation
  - Due to:
    - Trauma
    - Autoimmune
    - Infectious
Angle Closure Glaucoma

- Drainage of aqueous fluid completely closed off
- Acute rise in eye pressure
- **Severe pain, nausea, headache, decreased vision**

Images: Duker Ophthalmology, Chapter 12
Eye pain

Less Concerning

- Dry Eye
- Abrasion
- Foreign body

Highly Concerning

- Uveitis
- Herpes dendrite
- Ulcer
- Angle closure
Eye pain

Dry Eye
- Artificial tears help
- Vision disrupting
- Associated symptoms

Routine exam indicated

Angle Closure
- Age
- Painful
- Vision affected

Highly urgent office visit

Ulcer
- Painful
- CL wearer
- Light sensitivity
- Acute

Urgent office visit
“I cant see”

What’s happening?
Interviewing the Patient
Utilize lay-mans terms

“I Can’t See”
- Literal vs figurative
- Out of focus?
- Totally black
- Partial vision loss
“I cant see”

Context
Are you performing a certain task?
Distance/Near/Intermediate
Dark or light conditions
Is it blur or a complete blackout?
“I can't see”

Duration

How long does it occur for?
“I can't see”

Frequency

Is it constant or intermittent?

Does it come and go or is it always there?
Location

Which eye?
Which portion of your vision?
Is it worse in one eye?

“I can’t see”
"I can't see"

**Relief**

Squinting? Glasses?
Does anything make it better?
What have you tried to alleviate?
"I cant see"

Onset

When does it happen?
When did this first start?
“I cant see”

Associated signs/symptoms

Do any other symptoms accompany your main complaint?

Obtain examples

pain - fluctuations - headaches - strain
“I cant see”

Severity
Mild, Moderate, Severe
Pain scale 1-10
Has it improved or gotten worse since it began?
"I cant see"

Out of Focus
- New glasses
- Dry eye
- Cataract

Distortions
- Retinal
  - Macular hole
  - Epiretinal membrane/macular pucker
- Vessel occlusion

Systemic
- Vessel obstruction
- Stroke
- TIA
“I cant see”

- **New glasses**
  - Longstanding
  - Gradual worsening
  - Not an emergency
“I can’t see”

**Dry eye**
- ATs will help
- Other symptoms
  - Foreign body sensation
  - Irritation
  - Redness
  - Fluctuating vision
Cataract
- Constant
- Worse at night
- Gradual onset
- Age related
"I cant see"

**Retinal**
- Macular hole
  - Constant
  - Blind spot in central vision
- Age related
- Acute onset
- No improvements
“I cant see”

Retinal
- Epiretinal membrane/macular pucker
  - Distorted vision
  - Gradual
  - No improvement
  - Age related
“I cant see”

Systemic
Vessel occlusion
- Arterial or Venous
  - Sudden
  - Severe vision loss
    - Complete or Partial
  - Vision threatening urgency to True emergency
- Due to **hypertension or impending stroke**
Central Retinal Artery Occlusion

Early

Image: https://www.merckmanuals.com

Late

Image: https://assets.cureus.com
Central Retinal Vein Occlusion
"I cant see"

Systemic
- Stroke
  - Bodily symptoms
    - R/L sided weakness
    - Tingling
    - Slurred speech
    - Asymptomatic
    - Visual Field Loss
      - Left sided = difficulty reading
- True emergency

Image: https://jamanetwork.com
"I cant see"

**Systemic**
- Transient Ischemic Attack
  - Moments of complete vision loss
  - “mini stroke”
- Ocular emergency
- Impending stroke
“I can’t see”

Less Concerning

Glasses  Dry eye  Cataract  Retinal

Highly concerning

Systemic
“I cant see”

Glasses
- Gradual
- Vision out of focus
- Squinting

Need for routine exam

Retinal
- Constant
- Portion of vision
- Variable onset

Systemic
- Stroke
- Other symptoms
- Vessel Occlusion
- Drastic vision loss
- Total blackout

Ocular & Life Threatening Emergency

Urgent office visit
Flashes and/or Floaters
Interviewing the Patient

Utilize lay-mans terms

Floaters
- Spots in vision?
- How long
- Describe

Flashes
- Camera flash vs aura
- Duration/Frequency
- When
- Hydration, Migraines, Stress
- Glare?
Flashes and/or Floaters

**Duration**

When did this all start?
How long does it occur for?
Flashes and/or Floaters

Associated signs/symptoms
Do any other symptoms accompany your main complaint?
Obtain examples

With or without flashes?
Flashes and/or Floaters

Frequency

How frequent are the flashes?

Does it come and go or is it always there?
Flashes and/or Floaters

Location

Which eye?

Which portion of your vision?
Onset

When does it happen?

Flashes and/or Floaters
Flashes and/or Floaters

Does anything make it better?
Flashes and/or Floaters

**Context**

Is it more obvious in any environments?
Flashes and/or Floaters

- Trauma
- Posterior Vitreous Detachment
- Retinal Detachment
- Migraines
Vitreous and Retinal Anatomy
Flashes and/or Floaters

**Trauma**
- Isolated incident
- Reported
- Acute onset

Image: http://vstudentworld.yolasite.com/
Flashes and/or Floaters

Posterior Vitreous Detachment
- Natural aging process
- Always warrants a dilation
- Time of onset is key
Flashes and/or Floaters

Retinal Detachment/Break
- High range of symptoms
- More flashes, more floaters

Image: imagebank.asrs.org
Flashes and/or Floaters

Migraine/Aura
differently patient to patient
- Shimmer around objects
- Triggers
- No ocular findings to confirm
- Neurology

Image: http://migravent.com
Dry eye

- Artificial tears will help
- Wont be the same each time
- Tiny particulates, not a solid floater
Flashes & Floaters

Less Concerning

Ocular Migraine*

Floater

Trauma

Flashes

Floaters

Curtain over vision

Highly concerning
# Flashes & Floaters

<table>
<thead>
<tr>
<th>Ocular Migraine</th>
<th>Flashes</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Stress induced</td>
<td>- <strong>Frequency</strong> determines level of concern</td>
</tr>
<tr>
<td>- Needs a rule-out</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Floater(s)</th>
<th>Curtain over vision</th>
</tr>
</thead>
<tbody>
<tr>
<td>- New ones</td>
<td>- Retinal detachment</td>
</tr>
<tr>
<td>- <strong>Time of onset</strong> determines level of concern</td>
<td></td>
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</tbody>
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**Patient virtually always has to be seen & dilated**
Headaches
Interviewing the Patient

Utilize lay-mans terms

Headaches

- Location
- Activity (vision related)
Headaches

Location

Which area of the head?

Point to the area (if in-office)
Headaches

**Duration**

When did it start?

How long has this been going on?
Headaches

Onset

Acute vs Chronic

Does it wake you up in the middle of the night?
Headaches

Frequency

How often is happening? daily vs monthly
Improved vs Worsening since onset?
Headaches

Associated signs/symptoms
- pressure behind eyes
- double vision

Obtain examples
Do any other symptoms accompany your main complaint?
Headaches

Relief

What makes it better?
What environment is it better in?
Headaches

Context

Distance/Near/Intermediate vision use
- Reading, Driving, Computer
Have the patient put you in their scenario
Headaches

Severity

Pain scale 1-10

Descriptors: Mild, Moderate, Severe
Headaches

- New glasses
- Eye teaming/focusing disorder
- Dry Eye
- Sinus Congestion
- WHOL - Worst Headache Of Life
Headaches

- New glasses
- Eye teaming/focusing disorder
  - Eye Strain
  - Current glasses may help
- Age
Headaches

- Sinus Congestion
- WHOL – Worst Headache Of Life
  - Aneurysm
  - Giant Cell Arteritis
  - Uncontrolled HTN
Headaches

Less Concerning

- Need for new glasses
- Sinus Congestion

Eye teaming/focusing disorder

Dry Eye

Highly concerning

- WHOL
Headaches

New glasses
- Visual tasks
→ Routine eye exam

Eye teaming/focusing disorder
- Children/Teenagers
→ Routine eye exam

WHOL
- Worst headache
- Sleep disruptive
- Elderly
→ ER referral
**Summary**

**Double vision**
- Need for glasses
- Worse case: intracranial/palsy

**Floaters**
- Always need to be dilated

**“I Can’t See”**
- Out of Focus
- Total blackout

**Flashes**
- “photopsia” vs aura
- Duration/Frequency

**Eye “pain”**
- Think cornea

**Headaches**
- Location
- Activity based
- Recent sinus/cold
Questions?