Course Description: This lecture provides a guide to manage ocular emergencies. Case examples will emphasize clinically relevant information for the diagnosis and treatment of various sight-threatening and life-threatening conditions.

Course Objectives:

1. Describe common ocular emergencies that may present in an eye care practice setting

2. Describe importance of a thorough history, slit lamp examination, and dilated fundus examination in ocular emergencies

3. Define appropriate treatment and follow-up plans to manage ocular emergency cases

Ocular Emergencies

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Course Outline

1. Eye Care Emergencies

- **a.** Back to the basics
  - **i.** Emergent vs Urgent
  - **ii.** Vision vs Life Threatening
  - **iii.** Acute vs Chronic
  - **iv.** Progressive vs Stable
  - **v.** Proper Documentation

b. Triaging

i. Staff responsibilities

ii. Doctor responsibilities

2. Case 1 (Foreign Body – Dr. Bull case)

a. 23 year old male “got something in his right eye” 2 months prior. Presents with significant ocular pain (8 out of 10) and 3+ conjunctival hyperemia

1. Clinical Presentation

a. CC/HPI

b. Visual & Acuity & Entrance Testing

c. IOP, Slit Lamp Photos

3. Discussion on differential diagnoses, diagnosis, treatment, and management

a. Traumatic iritis

b. Endophthalmitis

c. Corneal infection

d. Anterior synechiae

b. Clinical Presentation

1. Corneal scar with iris trapped in wound
2. CT- shows intraocular foreign body- suspected metallic
3. B-scan- lens dislocation

c. Diagnosis- Penetrating intraocular foreign body with iris wound adhesion

d. Treatment-

1. CT vs MRI in this case- suspect for metallic substance
2. Retinal vs cataract vs iris vs corneal surgery

e. Prognosis-

1. Poor- patient is currently hand motion
2. Risk of sympathetic ophthalmia

3. Case 2 (Corneal Ulcer- Dr. Quint case)

a. 56 year old male presents with painful, photophobic, red right eye

1. Clinical Presentation

a. CC/HPI

b. Visual & Acuity & Entrance Testing

c. Anterior & Posterior segment findings

2. Discussion on differential diagnoses, diagnosis, treatment, and management

b. Sterile infiltrate vs. infectious Infiltrate

i. Infiltrative keratitis (IK) vs. microbial keratitis (MK)

ii. Contact Lens peripheral ulcer (CLPU)

iii. Contact Lens-induced acute red eye (CLARE)

iv. Common signs and symptoms of each

v. Beware of Masqueraders

1. Corneal dellen, Salzmanns nodular degeneration, Terriens marginal ulceration, rheumatoid corneal melt, herpetic eye disease

vi. Find the pathogen

1. Staphylococcus, Pseudomonas, Streptococcus

c. Culturing

d. Treatment

i. Antibiotic Categories

ii. Dosing

iii. Steroid

iv. Amniotic Membranes

v. Off-label options

e. Clinical Pearls

4. Case 3 (Tire Explosion – Dr. Bull Case)

a. 24 year old male new patient presents in 10 out of 10 pain OU and inability to open either eye due to a tire with “cleaner” exploding while working on it.

1. Clinical Presentation
    a. CC/HPI
    b. Visual acuity & Entrance Testing
    c. IOP
    d. Slit lamp photos
    e. Anterior & Posterior segment findings
2. Diagnosis= multiple corneal abrasions OU with traumatic uveitis OU (OS>OD) with possible chemical component
3. Treatment
    a. Wash out of the eyes with removal of any remaining foreign body
    b. BCL vs Amniotic membrane
    c. Debridement of irregular tissue
    d. Medications
        i. Antibiotic, steroid, NSAID
    e. Pain management
    f. Follow-up care

4. Prognosis and outcome

5. Case 4 (Giant Cell Arteritis- Dr. Quint case)

a. 67 year old male with sudden vision loss in left eye

1. Clinical Presentation

a. CC/HPI

b. Visual & Acuity & Entrance Testing

c. IOP, Slit Lamp Photos

d. Anterior & Posterior segment findings

2. Diagnosis=GCA

3. Discussion on differential diagnoses, diagnosis, treatment, and management

b. GCA Definition & Demographics

c. Systemic symptoms/signs

i. Headache

ii. Scalp/temple tenderness

iii. Polymyalgia rheumatica

iv. Jaw claudication

v. Weight loss

vi. Malaise

vii. Fever

viii. Neck pain

ix. Tongue/scalp necrosis

d. Ocular manifestations of GCA

i. AA-ION

ii. CRAO

iii. Amaurosis fugax

iv. Posterior ischemic optic neuropathy

v. Cilioretinal artery occlusion

vi. Transient visual obscuration

vii. Painful diplopia/ocular motility restriction

viii. Homonymous hemianopia

e. Occult GCA

f. Workup

i. ESR

ii. CRP

iii. CBC with differential and platelet count

iv. Temporal artery biopsy

g. Treatment

i. Immediate steroids

ii. Appropriate Follow-up

iii. Long-term Implications

h. Clinical Pearls

i. Immediate steroids

ii. Appropriate Follow-up

iii. Long-term Implications

6. Case 5 (Functional vision loss- Dr. Bull case)

a. 15 year old male presents with a complaint of complete (NLP) vision loss in OS upon waking up that morning.

1. Clinical presentation
    a. CC/HPI
    b. Visual acuity & entrance testing
    c. IOP
    d. Anterior and posterior segment findings
    e. Additional testing: OCT, VF, ERG, VEP, MRI
    f. Follow-up testing
2. Diagnosis: functional vision loss secondary to migraine
    a. Referral to neuro-ophthalmologist and consult notes
3. Discussion on differential diagnoses, diagnosis, treatment, and management
4. Follow-up and prognosis

7. Case 6 (Panuveitis-Dr. Quint case)

a. 18 year old male with pain & blurry vision in left eye

1. Clinical Presentation
    a. CC/HPI
    b. Visual & Acuity & Entrance Testing
    c. IOP, Slit Lamp Photos
    d. Anterior & Posterior segment findings
2. Diagnosis=Panuveitis secondary to syphilis
3. Discussion on differential diagnoses, diagnosis, treatment, and management

8. Case 7 (Branch retinal artery occlusion- Dr Bull case)

a. 70 year old female presents 3 weeks post cataract surgery OS with complaints of decreasing vision OS

1. Clinical Presentation
    a. CC/HPI
    b. Visual & Acuity & Entrance Testing
    c. IOP
    d. Anterior & Posterior segment findings
    e. Additional testing
        i. OCT (macula and ONH), OCT-A, visual field
2. Diagnosis: Branch retinal artery occlusion
3. Discussion on differential diagnosis, diagnosis, treatment and management
    a. Emergent ER referral for stroke workup with emphasis on cerebrovascular and cardiovascular system.
4. Follow up and prognosis

9. Case 8 (Cardiac arrest- Dr. Bull case)

a. 83 year old male presents to office for cataract preoperative appointment

1. Clinical presentation
    a. Unable to perform
2. Diagnosis: Loss of pulse during pre-op testing
3. Discussion on handling of emergencies
    a. Staff role
        i. 911
        ii. CPR training

iii. Defibrillator

10. Clinical Pearls for Ocular Emergencies

a. Vision vs Life Threatening

b. Urgent vs Emergent

c. Prompt diagnosis & appropriate management essential to save sight & lives