Top Referrals from the Emergency Department at an Academic Medical Center

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University Hospitals / Case Western Reserve University
Department of Ophthalmology

University Hospitals
Cleveland | Ohio

No Financial Disclosures

University Hospitals

- ★ Academic medical center and community hospital network in Northeast Ohio
- ★ 21 hospitals, >50 health centers and outpatient facilities, >200 physician offices
- ★ Joint venture with Case Western Reserve University School of Medicine, Northeast Ohio Medical University and University of Oxford - home to some of the most prestigious clinical and research programs. >3200 active clinical trials and studies

Why might ophthalmology be consulted?

- Corneal abrasion
- Corneal ulcer
- Conjunctivitis (allergic, viral, bacterial)
- Endophthalmitis
- Retinal tears and detachment
- Floaters
- Headache
- Globe rupture
- Orbital fracture
- Hyphema
- Intraocular lens subluxation
- Hordeolum and preseptal cellulitis
- Orbital cellulitis
- Dacryocystitis / dacryoadenitis
- Metastatic cancers
- Anterior uveitis
- Posterior uveitis
- Hypertensive retinopathy
- Diabetic retinopathy
- Medication toxicity
- Ocular foreign body
- Ocular migraines
- Retinal hemorrhages
- Cataracts
- Visual disturbance
- Cranial nerve palsy
- Idiopathic Intracranial Hypertension
- Intracranial mass or hemorrhage
- Diplopia
- EOM restriction
- Anisocoria
- Optic neuropathy
- Ptosis
- Proptosis
- Corneal scarring
- Transient Ischemic Attack
- Stroke

Narrow it down…

Topics to discuss

1. Corneal Abrasions
2. Flashes and Floaters
3. Orbital Trauma

Case examples
Treatment and management
Clinical Pearls

Corneal Abrasion

49 year old W male presents to ED as transfer from regional ED with complaint of right eye foreign body sensation. Reports this morning got a mixture of sand/plaster/lime into his right eye. At regional ED eye was irrigated with 1000cc of saline, pH improved from 7 to 8 upon discharge. Denies pain, but has constant drainage.

Near sc OD 20/25, OS 20/30 PH 20/20

IOP 9/11mmHg

Slit Lamp and Fundus Exam

External Exam

	Right	Left
External	copious discharge	Normal

Slit Lamp Exam

	Right	Left
Lids/Lashes	lower lid 2+ edema	Normal
Conjunctiva/Sclera	2+ injection	White and quiet
Cornea	no epithelial defect	Clear
Anterior Chamber	Deep and quiet	Deep and quiet
Iris	Round and reactive	Round and reactive
Lens	Clear	Clear
Anterior Vitreous	Normal	Normal

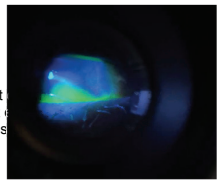
Fundus Exam

	Right	Left
Disc	Normal	Normal
C/D Ratio	.3	.3
Macula	Normal	Normal
Vessels	Normal	Normal
Periphery	Normal	Normal

Plan:
-Start moxifloxacin QID, erythromycin BID, PFAT q1-2H

-RTC 2 days for outpatient

Corneal Abrasion



49 year old W male presents to ED as transfer from regional ED with complaint
sensation. Reports this morning got a mixture of sand/plaster/lime into his right
irrigated with 1000cc of saline, pH improved from 7 to 8 upon discharge. Denies
drainage.

Follow-up #1

Still reporting constant discharge, redness, irritation and swelling in right eye. Some light sensitivity. No pain, described more tenderness since injury. Blurred vision but believed due to watering. Using moxi QID.

Distance OD 20/100, OS 20/20

Plan:
-Continue moxifloxacin QID, PFAT q1-2H
-Start 1% cyclopentolate BID
-Recommend gel-AT QHS
-Discussed BCL option, deferred
-RTC 4 day f/u

External Exam	Right	Left
External	Normal	Normal
Slit Lamp Exam		
	Right	Left
Lids/Lashes	Mild superior/lower eyelid edema	Normal
Conjunctiva/Sclera	3+ injection greatest nasal and inferior; Positive NaFl staining from 3:00-7:00	White and quiet
Cornea	4.3mm H "triangular" NaFl defect extending from pupil axis to inferior cornea	Clear
Anterior Chamber	Deep and quiet	Deep and quiet
Iris	Round and reactive	Round and reactive
Lens	Clear	Clear
Anterior Vitreous	Normal	Normal

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Corneal Abrasion

49 year old W male presents to ED as transfer from regional ED with complaint of right eye foreign body sensation. Reports this morning got a mixture of sand/plaster/lime into his right eye. At regional ED eye was irrigated with 1000cc of saline, pH improved from 7 to 8 upon discharge. Denies pain, but has constant drainage.

Follow-up #2

Improving slowly. Not uncomfortable anymore. Vision also gradually improving, still reporting some blur and intermittent light sensitivity. Using all drops as directed.

Distance OD 20/50 PH 20/30, OS 20/20

Plan:
-Continue moxifloxacin QID, PFAT q1-2H, 1% cyclopentolate BID, gel-AT QHS
-RTC 1 week f/u

External Exam	Right	Left
External	Normal	Normal
Slit Lamp Exam		
	Right	Left
Lids/Lashes	Mild superior/lower eyelid edema	Normal
Conjunctiva/Sclera	3+ injection greatest inferior; Positive NaFl staining at 5:00	White and quiet
Cornea	1.4mm round NaFl defect inferiorly	Clear
Anterior Chamber	Deep and quiet	Deep and quiet
Iris	Round and reactive	Round and reactive
Lens	Clear	Clear
Anterior Vitreous	Normal	Normal

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Corneal Abrasion

49 year old W male presents to ED as transfer from regional ED with complaint of right eye foreign body sensation. Reports this morning got a mixture of sand/plaster/lime into his right eye. At regional ED eye was irrigated with 1000cc of saline, pH improved from 7 to 8 upon discharge. Denies pain, but has constant drainage.

Follow-up #3

Improving. Slight blur still. Using all drops as directed.

Distance OD 20/25-2, OS 20/25

Plan:
-Continue moxifloxacin BID x 4 days then discontinue. Continue PFAT and gel-AT
-Stop 1% cyclo
-Monitor as needed

External Exam	Right	Left
External	Normal	Normal
Slit Lamp Exam		
	Right	Left
Lids/Lashes	Normal	Normal
Conjunctiva/Sclera	White and quiet; Diffuse conjunctival punctate staining	White and quiet
Cornea	Small area of coalesced SPK inferior; diffuse 2+ PEE; mild MCE	Clear
Anterior Chamber	Deep and quiet	Deep and quiet
Iris	Round and reactive	Round and reactive
Lens	Clear	Clear
Anterior Vitreous	Normal	Normal

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Corneal Abrasion

37 year old W male presents to ED with chief concern of his cat scratching his right eyeball. He endorses having his cats outside and upon coming in, got scratched in the eye with assumed dirty claws/paws by his vaccinated cat. He endorses having significant eye pain, darkened & blurred vision immediately after incident & when it did not dissipate, came to be seen.

VA near OD/OS 20/20

IOP 13/16mmHg

EOM/Pupil/VF WNL

Color OD/OS 11/11

-No infiltrates, AC well formed, No globe compromise

Plan:
-Moxifloxacin QID, erythromycin QHS, AT 3-4x per day
-RTC 2 days outpatient

Slit Lamp Exam

	Right	Left
Lids/Lashes	Normal	Normal
Conjunctiva/Sclera	White and quiet	White and quiet
Cornea	linear abrasion central to temporal cornea 7mm (w) x 1mm (h), abrasion inferior cornea 5mmx5mm, abrasion central 2mmx2mm	1+ inferior spk
Anterior Chamber	Deep and quiet	Deep and quiet
Iris	Round and reactive	Round and reactive
Lens	Clear	Clear
Anterior Vitreous	Normal	Normal

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Corneal Abrasion

37 year old W male presents to ED with chief concern of his cat scratching his right eyeball. He endorses having his cats outside and upon coming in, got scratched in the eye with assumed dirty claws/paws by his vaccinated cat. He endorses having significant eye pain, darkened & blurred vision immediately after incident & when it did not dissipate, came to be seen.

Follow-up #1

States vision is improved by 80%. Has not needed artificial tears but has been using the antibiotic drops as directed. Also using Tylenol and Advil for pain relief. Reports some pain and watery eyes. No light sensitivity.

VA distance 20/20 OD/OS

Anterior segment: **Linear 5 mm NaFl epithelial defect inferior temporal extending paracentrally to limbus w/ surrounding area of negative NaFl staining. No cells/flare. No conjunctival injection.**

Plan:
-Continue moxi QID x 1 week, erythromycin QHS x 2 days
-Discussed S/Sx of RCE
-Recommend gel-AT QHS
-Discussed long term prognosis with corneal scarring in location of scratch
-RTC 1 week for f/u.

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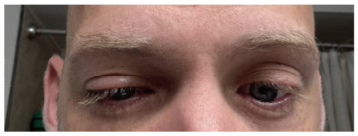
Corneal Abrasion



37 year old W male presents to ED with chief concern
having his cats outside and upon coming in, got scratc
vaccinated cat. He endorses having significant eye pa
& when it did not dissipate, came to be seen.

Follow-up #2

Pt messages on our portal 1 month later - 2 days ago he started experiencing sand-like feeling in his right eye which has now become sharp pain and tenderness. Increased tearing. Used AT and gel-AT but no relief. Symptoms started after opening eyes in AM. Associated dull headache and light sensitivity. Eye pain 8/10

VA OD 20/20-2

Anterior segment: **Linear 5 mm hairline stromal scar inferior temporal with 1mm area of positive NaFl staining paracentral to visual axis. 1-2+ cells. 1+ conjunctival injection.**

Plan:
-Start moxifloxacin QID, 1% cyclo BID, PFAT throughout day, gel-AT QHS
-Start 1% pred acetate QID in 2 days
-RTC 4 day f/u

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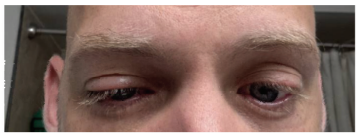
Corneal Abrasion



37 year old W male presents to ED with chief concern having his cats outside and upon coming in, got scratc vaccinated cat. He endorses having significant eye pai & when it did not dissipate, came to be seen.

Follow-up #3

Vision and pain have improved. Reports headache from both eyes focusing differently. Discontinued cyclopentolate himself after 1 day. Slight visual distortions and halos in right eye.

VA OD 20/20

Anterior segment: **Linear 5 mm hairline stromal scar inferior temporal with trace area of positive NaFl staining paracentral to visual axis. Trace cells. No conjunctival injection.**

Plan:
-Continue moxifloxacin QID x 1 week
-Continue 1% pred acetate QID x 1 week, then BID x 1 week then d/c.
-PFAT throughout day, gel-AT QHS
-RTC 2 week f/u

Corneal Abrasion

37 year old W male presents to ED with chief concern of his cat scratching his right eyeball. He endorses having his cats outside and upon coming in, got scratched in the eye with assumed dirty claws/paws by his vaccinated cat. He endorses having significant eye pain, darkened & blurred vision immediately after incident & when it did not dissipate, came to be seen.

Follow-up #4

Followed all drops as directed. Vision in right eye is almost as good as left eye now. No pain, watering or light sensitivity.

VA OD 20/20

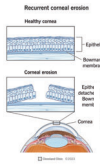
Anterior segment: **Linear 5 mm hairline stromal scar inferior temporal with trace area of positive NaFl staining paracentral to visual axis. No cells. No conjunctival injection.**

Plan:
-Start 50mg doxycycline BID x 3 weeks
-Start FML drops BID x 3 weeks
-PFAT throughout day, gel-AT QHS
-RTC 1 month

Corneal Abrasion

Recurrent corneal erosions - Faulty hemidesmosome adhesion complexes and abnormal basement membrane formation

- Loose adherence of the epithelium to the underlying stroma
- Etiology: Trauma, EBMD
- Increased levels of MMPs, interleukin-1, toxic free fatty acids



TREATMENTS FOR RECURRENT CORNEAL EROSION SYNDROME

Treatment		Example	Indication	Recovery Period	Effectiveness	Prophylactic Qualities
Medical	Lubrication	Artificial tears with NSAIDs and antibiotics	Acute attack	Short	Low	Mild
		Lacri-Lube or Muro 128 with NSAIDs and antibiotics	Chronic episodes	Short	Low	Mild
	Punctal occlusion	Collagen or silicone punctal plugs	Failed lubrication	Short	Moderate	Moderate
	Bandage soft contact lens	Focus Night & Day or Kontur	Failed lubrication and punctual occlusion	Long	Moderate	N/A
	Combination therapy	Oral tetracyclines, topical corticosteroids, lubrication	Failed lubrication and punctal occlusion	Short	High	High

Treatment of recalcitrant recurrent corneal erosions with inhibitors of matrix metalloproteinase-9, doxycycline and corticosteroids

D Dursun [1], M C Kim, A Solomon, S C Pflugfelder

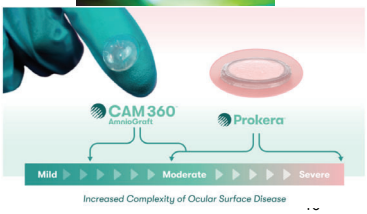
Conclusions: Therapy with a combination of medications that inhibit metalloproteinase-9 produced rapid resolution and prevented further recurrence of cases of recurrent corneal erosions that were unresponsive to conventional therapies.

https://www.aao.org/eyenet/article/treatment-of-recurrent-corneal-erosions

Corneal Abrasion

Management:

- -Topical antibiotics
- -Artificial tears
- -Cycloplegics
- -BCL
- -Amniotic membranes
- -OTC pain relievers
- -Hypertonic saline solution
- -Vitamin C



Flashes and Floaters

63 year old AA male presents to ED urgent clinic with complaint of visual disturbance x 2 days. OD feels like looking through little hairs and millions of black spots. No flashes, no curtain. No recent trauma.

Hx of cataract surgery and s/p YAG OU 2022.

Under care with retina for NPDR.

VA OD 20/40-2 NIPH, OS 20/20-1

IOP 18/17mmHg

DFE OD: +Shaffer sign, scattered DBH, pre retinal hemorrhage inferior, no BHT 360

DFE OS: Scattered DBH, no BHT 360

Flashes and Floaters

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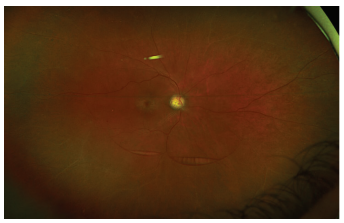
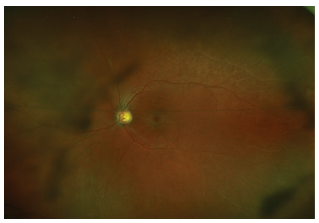
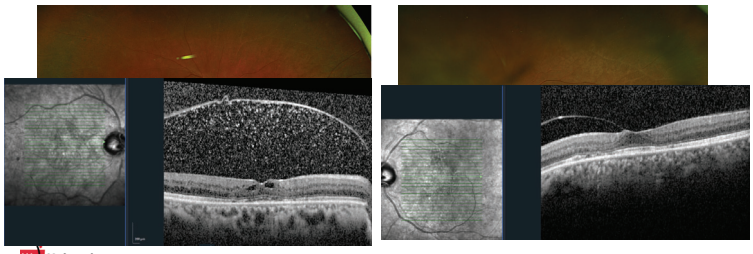




Flashes and Floaters

Plan: RTC 3-4 weeks for DFE f/u. RD precautions.

63 year old AA male presents to ED urgent clinic with complaint of visual disturbance x 2 days. OD feels like looking through little hairs and millions of black spots. No flashes, no curtain. No recent trauma.



Flashes and Floaters

59 year old C male presents for ED with complaint of seeing streaks in vision x 1 day. Also reports slightly decreased vision. Initially history of chronic small floaters, now noticing larger dark floater intermittently. No flashes. Hx of right eye injury 25 years ago.

VA OD/OS/OU 20/20

DFE OD: PVD OD w/ Weiss ring. Inferior cobblestone degeneration. Diffuse pigmentary changes.

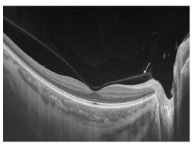
DFE OS: Syneresis. Diffuse pigmentary changes.

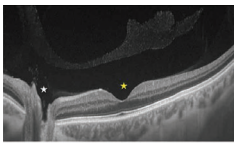
Plan: RTC 3-4 weeks for DFE f/u. RD precautions.

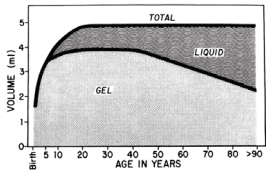
Flashes and Floaters

Range of conditions
- Vitreal (syneresis, vitreous detachment)
- Vitreoretinal (Vitreomacular traction, epiretinal membrane, macular hole)
- Retinal (retinal hole/tear, detachment)

Age-related vitreous changes (gel liquefaction and weakening of vitreoretinal proteinaceous adhesions) = syneresis vs synchiasis

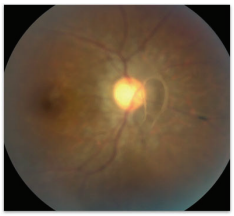


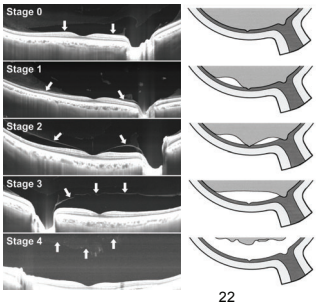




Flashes and Floaters

Posterior Vitreous Detachment (PVD) – separation of vitreous cortex from the retinal internal limiting membrane (ILM)
- Risk factors:
  - Trauma, myopia, women, ocular surgeries





Flashes and Floaters

Current recommended management:

- Subsequent DFE 4-6 weeks after initial symptoms

Most patients with delayed retinal breaks are seen within 2 months of initial examination.

Symptomatic Posterior Vitreous Detachment and the Incidence of Delayed Retinal Breaks: Case Series and Meta-analysis

ROBERT E. COFFEE, ANDREW C. WESTALL, GARVIN H. DAVIS, WILLIAM F. MIELER, AND ERIC R. HOLZ

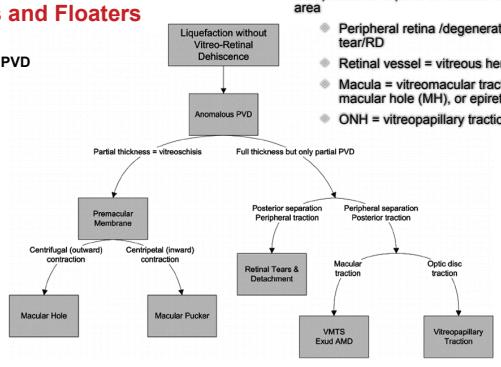
• PURPOSE: To establish the necessity for an early follow-up examination after an initial funduscopic examination with negative results for patients with acute, symptomatic posterior vitreous detachment (PVD).

• RESULTS: The incidence of retinal tears in eyes with a symptomatic PVD was 8.2%. The overall rate of retinal break in the meta-analysis portion of the study was 21.7%. In total, 1.8% of patients had retinal tears that were not seen on initial examination. Of the 29 patients with delayed-onset retinal breaks, 24 (82.8%) had at

• CONCLUSIONS: If the results of an initial examination of a patient with an acute, symptomatic PVD are negative for retinal tears, the necessity of early follow-up may be best determined by the presence of pigmented cells in the vitreous, vitreous hemorrhage, or retinal hemorrhage. Most patients with symptomatic PVD may not need an early follow-up examination.

Flashes and Floaters

Anomalous PVD



Complications depend on location and size of tractional area
- Peripheral retina /degenerative lesions = retinal tear/RD
- Retinal vessel = vitreous hemorrhage
- Macula = vitreomacular traction syndrome (VMTS), macular hole (MH), or epiretinal membrane (ERM)
- ONH = vitreopapillary traction syndrome (VPTS)

Flashes and Floaters

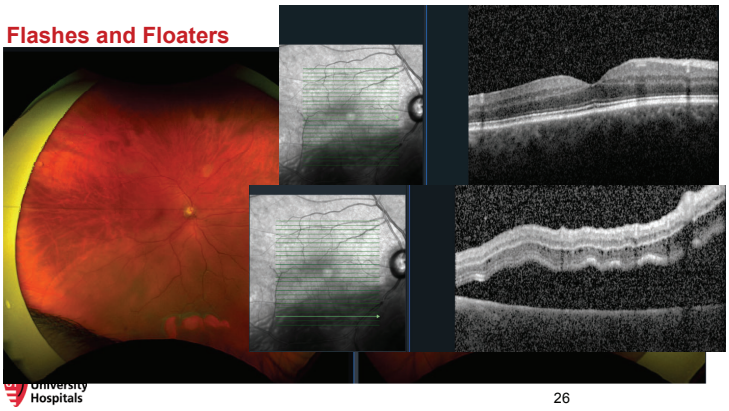
Revisit case -

59 year old C male presents for ED with complaint of seeing streaks in vision x 1 day. Also reports slightly decreased vision. Initially history of chronic small floaters, now noticing larger dark floater intermittently. No flashes. Hx of right eye injury 25 years ago.

Presents for 1 month PVD f/u. Reports vision seems to have declined in OD. Floaters are stable OU. Noticing orange light in peripheral vision OD that seems to be coming down in his vision. Started 2 days ago.

VA OD 20/25, OS 20/20

Flashes and Floaters



Flashes and Floaters

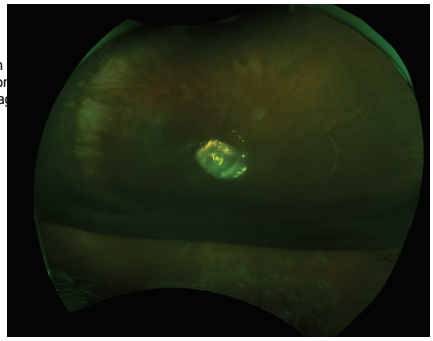
Revisit case -

59 year old C male presents for ED with
decreased vision. Initially history of chron
flashes. Hx of right eye injury 25 years ag

POW #1 - S/P PPV/EL/Gas OD

80% gas fill

Inferior tears well barricaded w/ laser



Flashes and Floaters

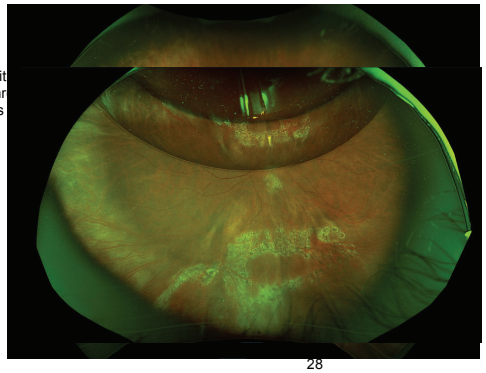
Revisit case -

59 year old C male presents for ED wit
decreased vision. Initially history of chr
flashes. Hx of right eye injury 25 years

POW #2 - S/P PPV/EL/Gas OD

60% gas fill

Inferior tears well barricaded w/ laser



Orbital Trauma

83 year old AA male presents to ED after falling down flight of stairs. Was found by his wife, he does not recall what happened. Presents full conscious and responsive with obvious R orbital hematoma. Found to have subacute R 3-7th rib fxs, subacute or chronic L 3-6th rib fxs, R parietal bone fx extending into R temporal bone, retrobulbar hematoma, nasal bone fxs, R medial orbital wall fx, L maxillary sinus fx, C1 ring fx, mildly displaced R lateral mass of C2, bilateral C7 pedicle fx, questionable epidural hematoma posterior to the C2 vertebral body. Ophthalmology consulted.

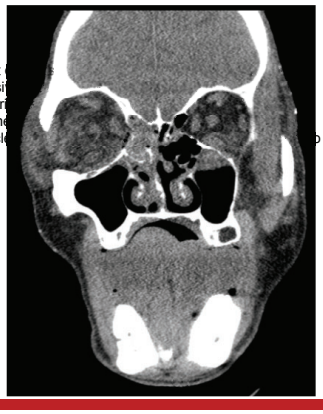
Upon quick evaluation, found to have fixed R dilated pupil, obvious proptosis and periorbital edema, bullous subconjunctival hemorrhage with chemosis

Orbital Trauma

83 year old AA male presents to ED after falling down flight
recall what happened. Presents full conscious and responsi
have subacute R 3-7th rib fxs, subacute or chronic L 3-6th r
temporal bone, retrobulbar hematoma, nasal bone fxs, R m
fx, mildly displaced R lateral mass of C2, bilateral C7 pedicl
the C2 vertebral body. Ophthalmology consulted.

Impressions:

- Comminuted and depressed fractures of R nasal bone and buckling of osseous nasal septum.
- Acute fracture of R medial orbital wall
- Chronic fracture of L medial orbital wall
- Orbital floors intact
- R sided exophthalmos with questionable tenting of the posterior globe at ON insertion



Orbital Trauma

83 year old AA male presents to E
recall what happened. Presents fu
have subacute R 3-7th rib fxs, sut
temporal bone, retrobulbar hemat
fx, mildly displaced R lateral mass
the C2 vertebral body. Ophthalmo

ED visit

VA near sc OD CF 3ft, OS 20/50

Pupils: OD 7mm light and dark, irr
OS 4mm light and dark, ro

IOP initially unreadable —> S/P L

-IOP went from 23mmHg to 2

	Right	Left
External	Proptosis, 3+ periorbital edema, horizontal midline superficial laceration, 1 mm superficial laceration on right lateral aspect of nose	Superficial abrasions

Slit Lamp Exam

	Right	Left
Lids/Lashes	3+ UL/LL edema moderate-severe taut/resistance to retropulsion, s/p lateral canthotomy and superior and inferior canthotysis	Normal
Conjunctiva/Sclera	4+ 360 bullous subconjunctival hemorrhage with chemosis	White and quiet
Cornea	1+ microcystic edema	Clear
Anterior Chamber	Deep and quiet	Deep and quiet
Iris	9 mm, round/fixed	Peaked @ 7:00, mid-dilated/minimally reactive

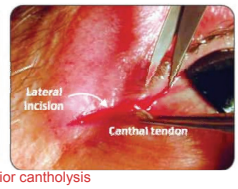
Fundus Exam

	Right	Left
Disc	Sharp margins, no pallor/edema. +Inferior disc hemorrhage.	
C/D Ratio	0.2	
Macula	Flat, intact	
Vessels	Normal in course and caliber. 1 superonasal pre-retinal hemorrhage, 2 pre-retinal hemorrhages along the inferior vascular arcade.	
Periphery	Unable to assess d/t EOM restriction	

OS dilation deferred as CT head had not resulted (unsure if patient needed NSGY evaluation at the time). OD pupil 7mm without dilation, able to assess fundus.

University Hospitals

Orbital Trauma



83 year old AA male presents to ED af
recall what happened. Presents full co
have subacute R 3-7th rib fxs, subacut
temporal bone, retrobulbar hematoma,
fx, mildly displaced R lateral mass of C
the C2 vertebral body. Ophthalmology

IOP initially unreadable —> S/P Lateral canthotomy and inferior and superior cantholysis

-IOP went from 23mmHg to 27mmHg to 23mmHg

Orbital Compartment Syndrome - Ophthalmic emergency

-Increased intraorbital pressure >> perfusion pressure of the Ophthalmic artery
-Can result in ischemia and permanent vision loss

To relieve pressure: Canthotomy and cantholysis

University Hospitals

Orbital Trauma

83 year old AA male presents to ED after falling down flight of stairs. Was found by his wife, he does not recall what happened. Presents full conscious and responsive with obvious R orbital hematoma. Found to have subacute R 3-7th rib fxs, subacute or chronic L 3-6th rib fxs, R parietal bone fx extending into R temporal bone, retrobulbar hematoma, nasal bone fxs, R medial orbital wall fx, L maxillary sinus fx, C1 ring fx, mildly displaced R lateral mass of C2, bilateral C7 pedicle fx, questionable epidural hematoma posterior to the C2 vertebral body. Oph

Inpatient Consult - Day 3

VA near sc OD CF 3ft, OS

Pupils: OD 7mm light and d
OS 4mm light and d

External Exam

	Right	Left
External	Proptosis, 3+ periorbital edema, horizontal midline superficial laceration, 1 mm superficial laceration on right lateral aspect of nose	Superficial abrasions

Slit Lamp Exam

	Right	Left
Lids/Lashes	3+ UL/LL edema moderate taut/resistance to retropulsion, s/p lateral canthotomy and superior and inferior canthotysis	Normal
Conjunctiva/Sclera	3+ 360 bullous subconjunctival hemorrhage with chemosis	White and quiet
Cornea	Clear	Clear
Anterior Chamber	Deep and quiet	Deep and quiet
Iris	Fixed/dilated, iris sphincter tears @ 6:00, 8:00, 9:00	Peaked @ 5:00, mid-dilated/minimally reactive

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83 year old AA male presents to ED after falling down flight of stairs. Was found by his wife, he does not recall what happened. Presents full conscious and responsive with obvious R orbital hematoma. Found to have subacute R 3-7th rib fxs, subacute or chronic L 3-6th rib fxs, R parietal bone fx extending into R temporal bone, retrobulbar hematoma, nasal bone fxs, R medial orbital wall fx, L maxillary sinus fx, C1 ring fx, mildly displaced R lateral mass of C2, bilateral C7 pedicle fx, questionable epidural hematoma posterior to ed.

	Right	Left
	No proptosis, tr periorbital ecchymosis	Superficial abrasions

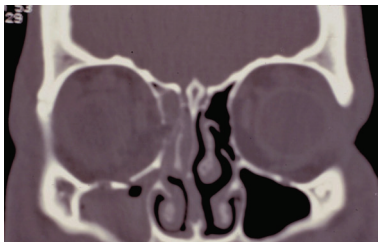
	Right	Left
	UL/LL ecchymosis s/p lateral canthotomy and superior and inferior cantholysis with slow, active ooze from C&C site	Normal
	bullous subconjunctival hemorrhage inferiorly with mild chemosis	White and quiet
	Clear	Clear
	Deep and quiet	Deep and quiet
	Fixed/dilated, iris sphincter tears @ 6:00, 8:00, 9:00	Peaked @ 5:00, mid-dilated/minimally reactive

University Hospitals

Orbital Trauma

Think Anterior to Posterior!

-Lid edema/Ecchymosis/Laceration
-Corneal abrasion
-Iris damage
-Traumatic AU
-Hyphema
-Crystalline lens damage/Subluxation
-Posterior segment insult
  -ON vs Retina
-Fractures of the orbit
-Orbital hemorrhage



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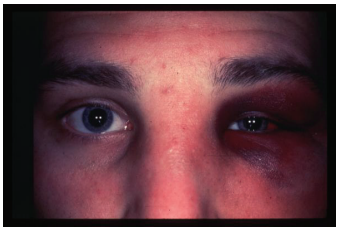
Orbital Trauma



Common presentation

-Periorbital ecchymosis
-Edema
-Crepitus
-Infraorbital anesthesia
  -Affecting cheek and upper lip
-Symptoms exacerbated by sneezing or blowing nose
-Muscle entrapment

University Hospitals

Orbital Trauma

Common presentation

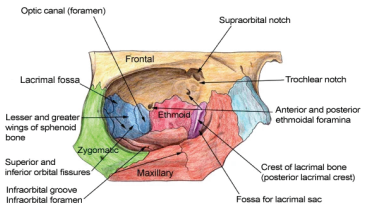
Orbital Fractures

-Most commonly will involve the orbital floor and/or medial wall

-Infraorbital rim is weakened near the canal of the infraorbital nerve

-0.23mm thick

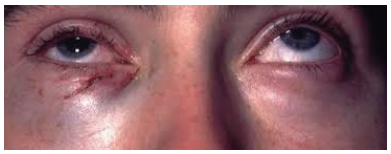
-"Blow out fracture" - occurs from compressive blow to the infraorbital rim or intraorbital pressure transmitted via posterior displacement of the globe



Orbital Trauma

Indication for surgery

- Persistent diplopia x 1 month
- Enophthalmos > 2 mm
- Muscle Ischemia



Common Patient Instructions

-Ice packs around affected area

-Avoid drinking from straw and forcibly blowing nose

-Oral antibiotics consideration for sinusitis

-Follow up care within 2-4 weeks with OD/OMD

Orbital Trauma

56 year old C female presenting to the ED after MVC. Patient was r
hour earlier today when she was T-boned resulting in her lurching fo
windshield resulting in starring of the windshield. Was not wearing a
arrived to the scene and noted that she was notably confused. Opht
globe injury.

On imaging no orbital fractures noted. The ED physician noted left h
laceration to the left eye for which erythromycin ung TID was started

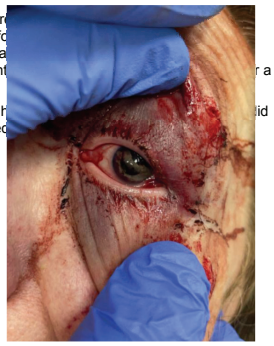
Near sc OD 20/40, OS HM

IOP 11/11mmHg

Pupils OD round and reactive, no APD

OS Irregular, s/p trauma, no APD on reverse

EOM full OU



Orbital Trauma

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	Right	Left
External		periorbital edema and ecchymosis.

Slit Lamp Exam

	Right	Left
Lids/Lashes	Normal	superficial 1.5cm non margin involving laceration parallel to the lids
Conjunctiva/Sclera	White and quiet	temporal SCH
Cornea	Clear	clear, no epi defect, seidel negative
Anterior Chamber	Deep and quiet	formed, inferior 2mm hyphema. Some clumps of iris pigment
Iris	Round and reactive	large iridodialysis extending from 11 oc to 3 oc
Lens	tr NS	tr NS, iris pigment on ST portion of anterior capsule. some zonules visible.
Anterior Vitreous	Normal	poor view

Fundus Exam

	Right	Left
Disc	pink and sharp	pink and sharp
C/D Ratio	0.3	0.3
Macula	Normal	poor view
Vessels	Normal	appear wnl
Periphery	Normal	poor view, no RD on B scan, some hyperechoic material settling inferiorly (VH?)

Orbital Trauma

56 year old C female presenting to the ED after M
hour earlier today when she was T-boned resultin
windshield resulting in starring of the windshield. V
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globe injury.

Plan:

#Blunt trauma OS #Hyphema OS #Iridodialysis

-Bed rest with head elevation. No heavy lifting or bending

-Avoid blood thinners. Acetaminophen ok for pain

-Cyclopentolate 1% TID

-Shield over eye

-RTC 2 days with me

	Right	Left
External		periorbital edema and ecchymosis.

Slit Lamp Exam

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Lids/Lashes	Normal	superficial 1.5cm non margin involving laceration parallel to the lids
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Orbital Trauma

56 year old C female presenting to the ED after MVC. Patient was reportedly running around 30 miles an hour earlier today when she was T-boned resulting in her lurching forward and hitting her face into the windshield resulting in starring of the windshield. Was not wearing a seatbelt. Airbags did deploy. EMS arrived to the scene and noted that she was notably confused. Ophthalmology consulted due to concern for a globe injury.

2 day f/u - Unsure if she has been receiving eye drops. Reports light sensitivity and eye pain.

VA distance OD 20/20, OS HM

IOP 7/8mmHg

Plan: Continue same regimen,
-Add OTC AT QID
-Add Pred acetate QID
-RTC 5 days for f/u with B-scan for fundus view

Slit Lamp and Fundus Exam

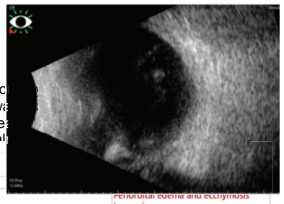
External Exam

	Right	Left
External	Normal	Periorbital edema and ecchymosis

Slit Lamp Exam

	Right	Left
Lids/Lashes	Normal	Superficial 1.5cm non margin involving laceration parallel to the lids
Conjunctiva/Sclera	White and quiet	Temporal SCH from 3-5:30 o'clcok
Cornea	Diffuse 2+ SPK	Diffuse 2+ superficial punctate keratitis (SPK), no epi defect, seidel negative
Anterior Chamber	Deep and quiet	Deep and formed, inferior 1.5mm layered hyphema
Iris	Round and reactive	Large iridodialysis extending from 11-2 o'clock with iris in the visual axis
Lens	Tr NS	Tr NS, iris pigment on ST portion of anterior capsule. some zonules visible.

Orbital Trauma



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globe injury.

5 day f/u - Started drops 1 day ago.
Symptoms largely stable. OS only has peripheral vision. +Head pain, no significant eye pain.

VA distance OD 20/25, OS HM

IOP 11/8 mmHg

Plan: Improving anterior findings.
-Continue same regimen.
-RTC 1 week with retina for posterior segment concern

Slit Lamp and Fundus Exam

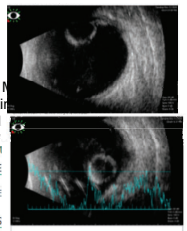
External Exam

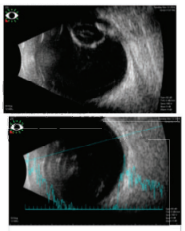
	Right	
External	Normal	Periorbital edema and ecchymosis improving

Slit Lamp Exam

	Right	Left
Lids/Lashes	Normal	Healed laceration parallel to the lids
Conjunctiva/Sclera	White and quiet	Temporal SCH from 3-5:30 o'clock (improving)
Cornea	Diffuse 1+ SPK	Diffuse 2+ superficial punctate keratitis (SPK), no epi defect, seidel negative
Anterior Chamber	Deep and quiet	Deep and formed, microhyphema at 4:00 midperipheral linear band
Iris	Round and reactive	Large iridodialysis extending from 11-2 o'clock with iris in the visual axis
Lens	Tr NS	1+ NS, iris pigment on ST portion of anterior capsule, some zonules visible.

Orbital Trauma





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windshield resulting in starring of the windshield
arrived to the scene and noted that she was not
globe injury.

1 week f/u - Using cyclo BID, Red QID, AT PRN. Vision OS poor, but pain is improving.

VA distance OD 20/30, OS HM

IOP 9/14 mmHg

Vitreous prolapse + Subluxated lens

Plan:
-Iridodialysis repair, cataract extraction, exploration of fundus lesion

Slit

	Right	Left
Lids/Lashes	Normal	Healed laceration parallel to the lids
Conjunctiva/Sclera	White and quiet	Temporal SCH from 3-5:30 o'clock (improving)
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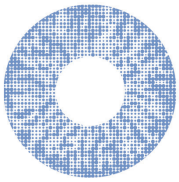
~9 months later w/ Retina, post cataract extraction

-Pt complaints of light sensitivity and struggling with vision in evening

-BCVA OD 20/20, OS CF 2FT

-Still persistent iridodialysis from 11:00-2:00



Suggest cosmetic CL fit

-Fit with Biocolor Orion

OS: Base Curve 8.6 Power: Plano-1.25x090
Clear pupil size: 4.2mm
Diameter: 14.2
Black underprint
Light Blue color (44-V)

Key Take Aways

-Capabilities of ED ophthalmic care

-Knowing common practice management from ED perspective

-Many of the patients may call your clinic to follow-up

-Staying up to date on urgent care ocular disease