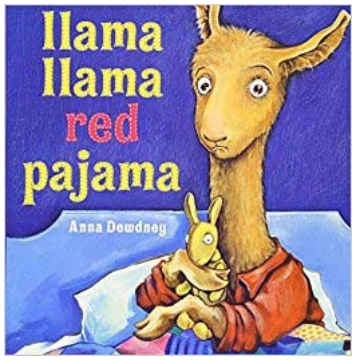
TRAUMA, TRAUMA

JAMES LEE, M.D., ASSISTANT PROFESSOR

TECHNICIAN CONFERENCE

OCT 26, 2018

A YOUNG PARENT WOULD HAVE HEARD THE TITLE AND IMMEDIATELY THOUGHT…



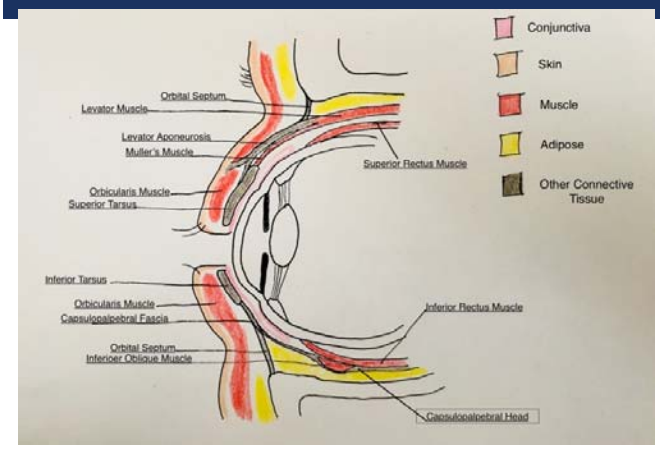
GROSS PICTURES

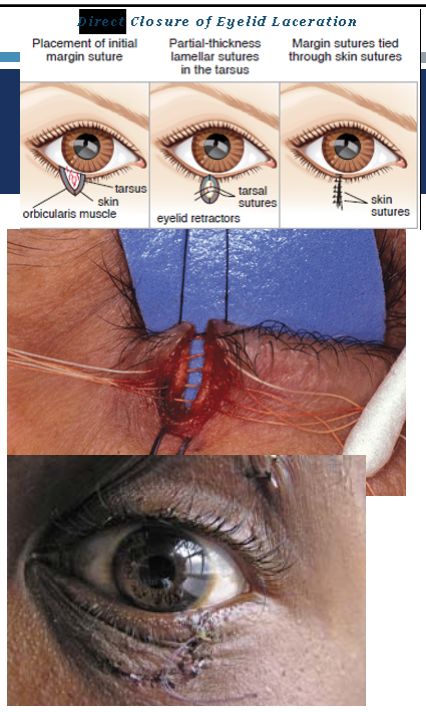
LET'S START WITH EYELIDS

- Lacerations of the eyelid without margin or canalicular involvement are usually no big deal
- We will typically sew these closed with plain gut suture and they heal without trouble (still watch for exposure)

BLINK FOR ME. NO SERIOUSLY.

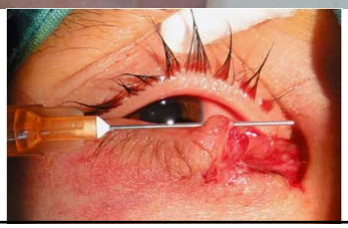
- Margin involving lacerations (without canalicular involvement) are more complex to close. The key is closing the tarsus appropriately and then lining up the structures at the margin

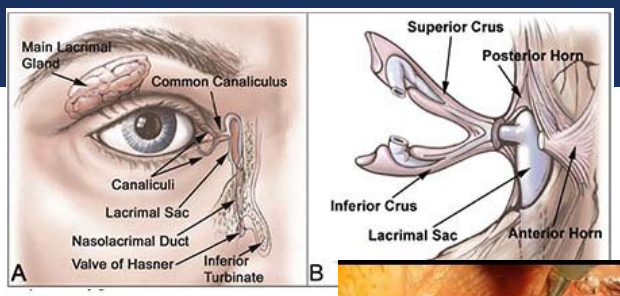


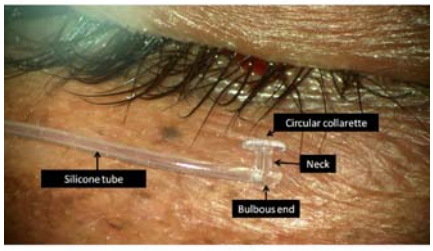


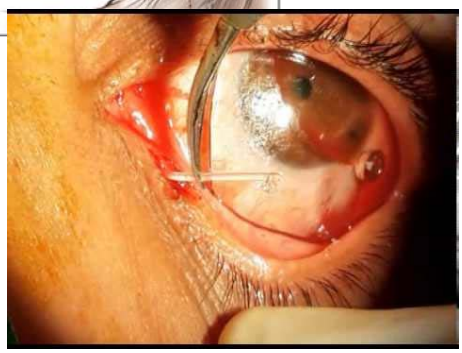
WORSE THAN IT LOOKS

- Lacerations involving the canaliculus require surgery under general anesthesia with canalicular repair. Failure to repair the canaliculus (if only one damaged) will results in epiphora in 50% of patients

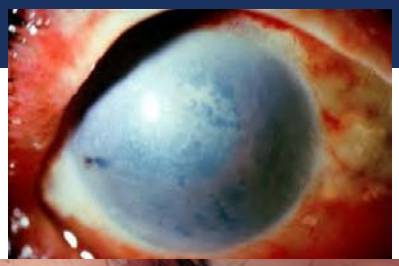


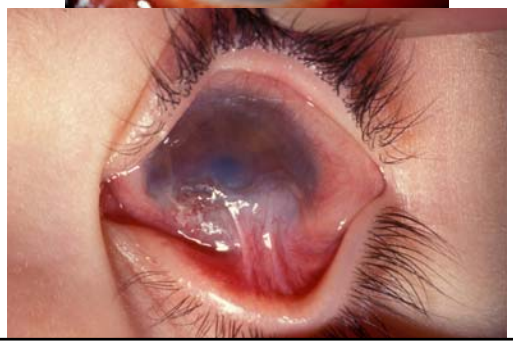




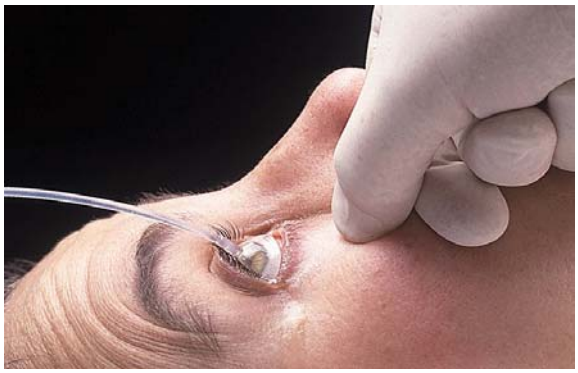


DON'T SPLASH ME BRO



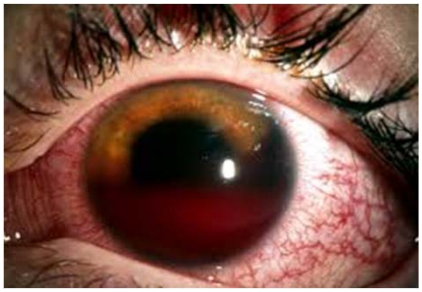


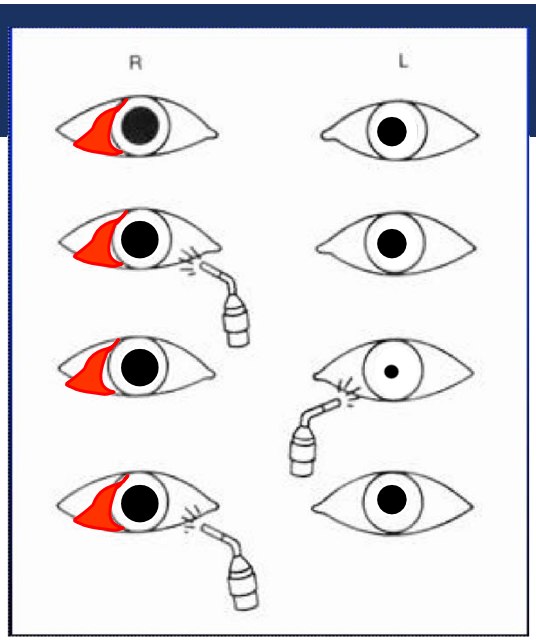
- Acid and base exposure can cause anything from mild irritation to complete vision loss. Basic solutions (oven cleaner, bleach) are MORE toxic to the eye than acidic solutions
- The most important intervention is immediate flushing of the eye with water/saline, to be continued until the pH of the eye returns to normal. In the ER we will place a Morgan lens and hook it up to an IV pole – will sometimes run 5-6 liters of saline before the eye is sufficiently irrigated



BIG BLEEDER BRAND

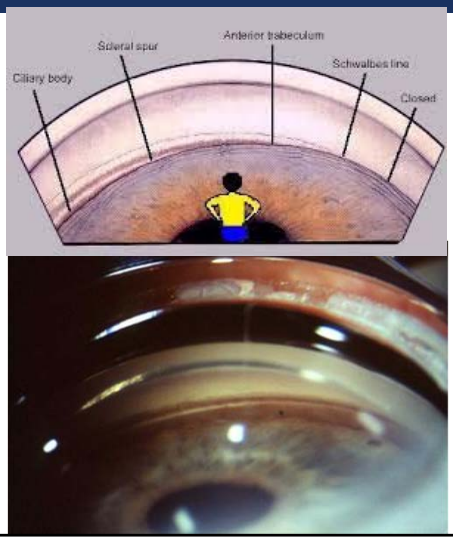
- Blunt trauma can often cause a hyphema (a blood vessel in the iris ruptures and fills anterior chamber). The two primary issues in a hyphema is pressure elevation and corneal blood staining.
- These will typically resolve on their own and the IOP can be managed medically. Occasionally the blood has to be washed out in the OR

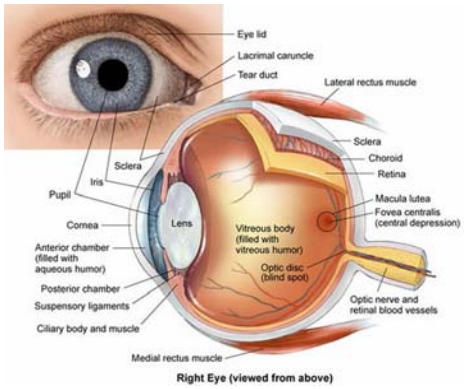


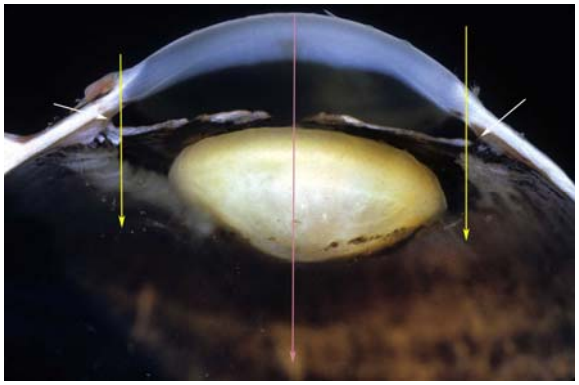


IS IT TRAUMAUTIC GLAUCOMA OR IS GLAUCOMA TRAUMATIC?

- Blunt force trauma may also tear muscles in the ciliary body leading to "angle recession"
- In angle recession, much more of the ciliary body is visible on gonioscopy. The real issue is damage to the trabecular meshwork. The risk of glaucoma in these patients is around 10%

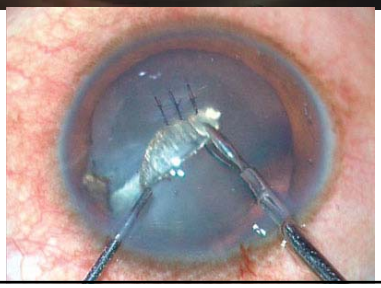


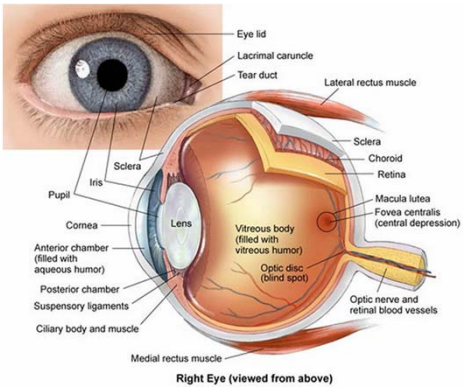




CADILLACS

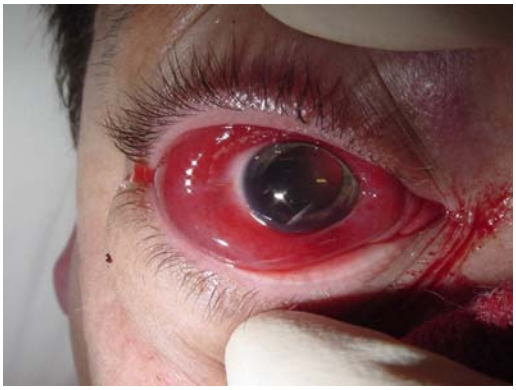
- Blunt force trauma can in rare cases cause a cataract, typically in a posterior stellate (star-shaped) appearance
- Anything which penetrates the lens capsule will cause a cataract to form within days and often will require surgery (complex!) in the near future

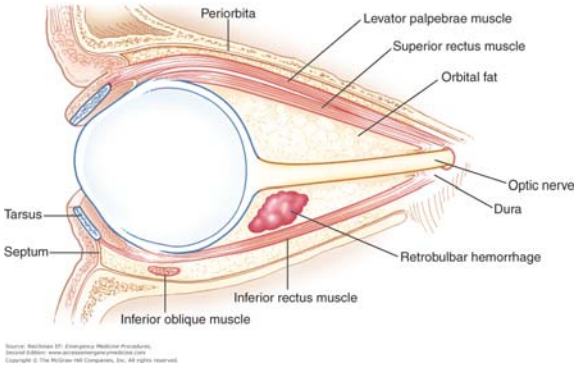


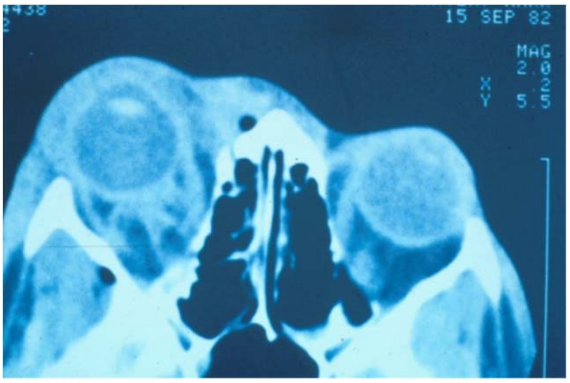


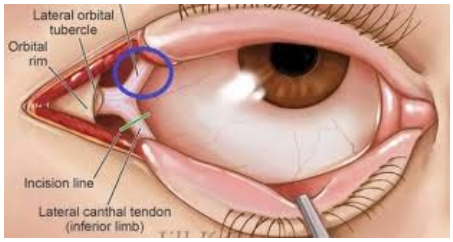
BAD AS IT LOOKS

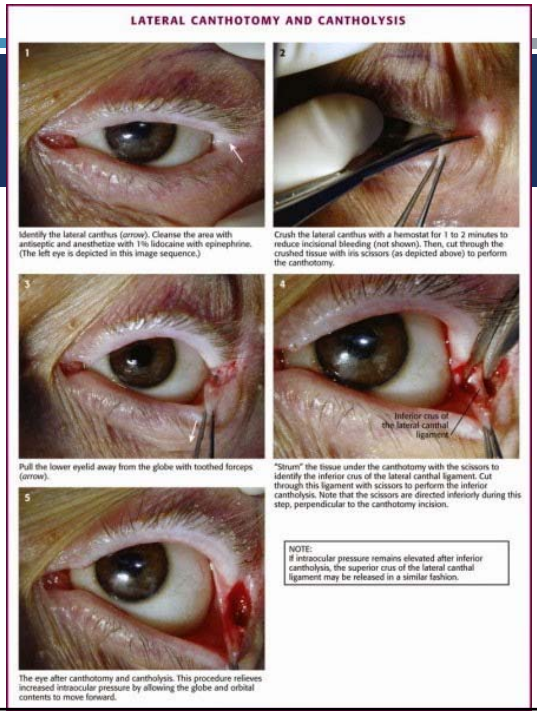
- Friday night and Techy McDrunkardson shows up looking like this – highly concerning for retrobulbar hemorrhage. This requires urgent intervention if the pupil is behaving abnormally or if the IOP has really spiked.
- A CT scan may show a retrobulbar bleed (we get consulted for these a lot) without it causing the real vision threatening issue, which is an orbital compartment syndrome





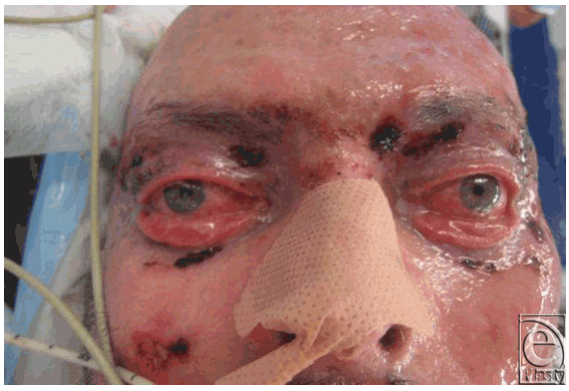


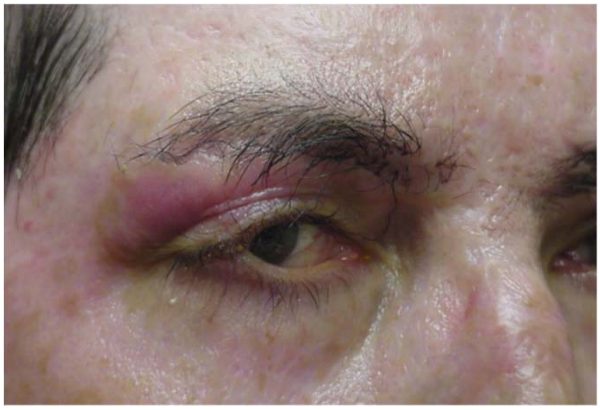




EYELID BURNS

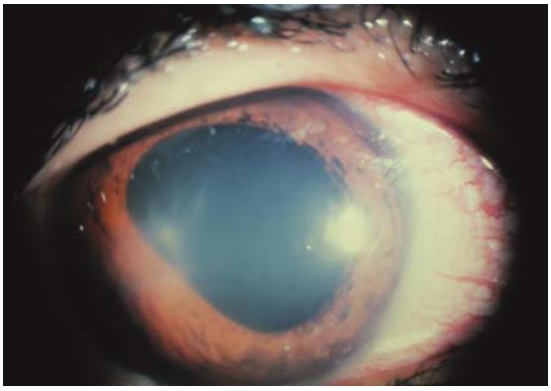
- Severe eyelid burns frequently lead to corneal exposure during the scarring process
- If mild-moderate, aggressive lubrication with ointments, preservative free tears, and moisture goggles can keep the corneas healthy while we wait for the scarring to be completed (and then do surgery if significant exposure)
- In severe cases, a tarsorrhphy may have to be done earlier to minimize exposure (will still need other lid surgeries in future)

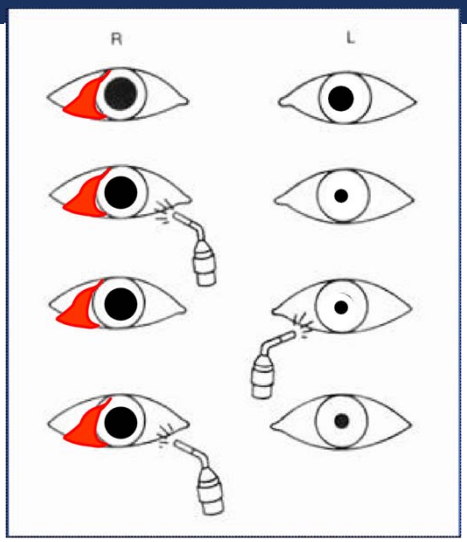




AA! ANEURYSM!

- A common consult we see with trauma is for a "blown" pupil that isn't reacting to light. There's often lots of hand wringing about if this could be an aneurysm
- By far the most common cause is traumatic mydriasis, which is just from tears in the iris muscle which allows it to constrict (again, checking APD by reverse is helpful!)
- The more worrisome cause would be a traumatic optic neuropathy

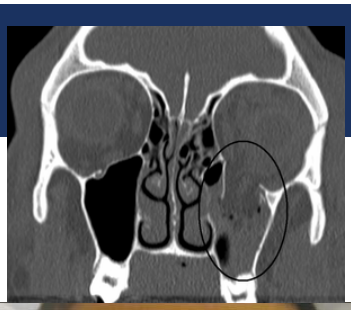




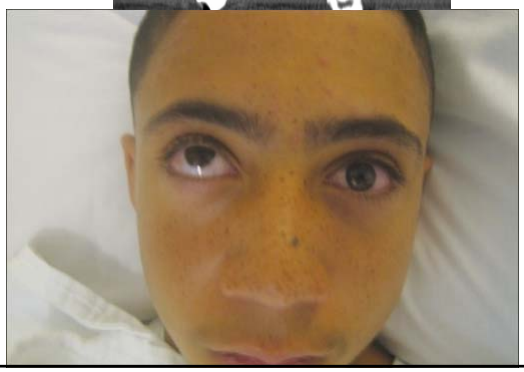
HAPPY TRIVIA

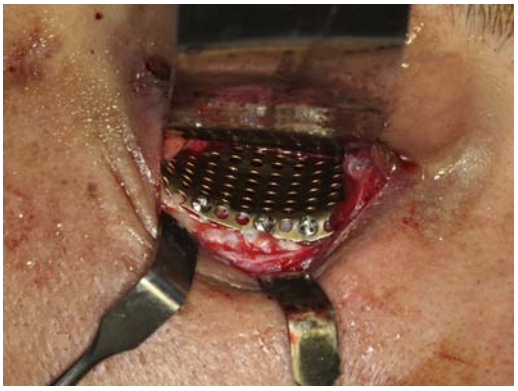
- The same guy who sang "You're a Mean One, Mr. Grinch" was also the voice of Tony the Tiger
- As part of David Hasselhoff's divorce settlement, he kept possession of the nickname "Hoff" and the catchphrase "Don't Hassle the Hoff."

BLOWOUT SALE



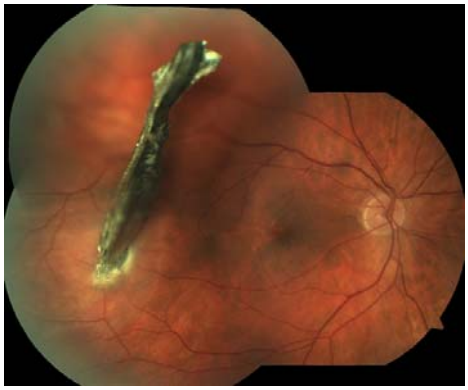
- One of the most common trauma consults is for orbital fractures. In the vast majority (95%) no intervention is required, they tend to heal without trouble
- However some patients, especially kids, are more prone to getting the muscle (most often inferior rectus) stuck in the fracture site. This will cause diplopia and in some causes vomiting and bradycardia, requiring more urgent intervention to release the muscle and place a plate to make a new floor.





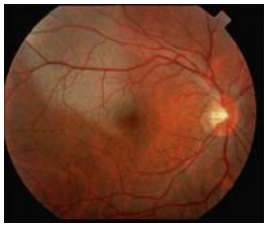
WELL HOW DID THAT GET THERE

- Intra-ocular foreign bodies are a rare problem with unique issues. Most often the person on call for trauma is not a retina specialist, so foreign bodies like this would be left in the eye. The person on call would simply close the open globe (the entry wound) and then send the patient to retina for extraction



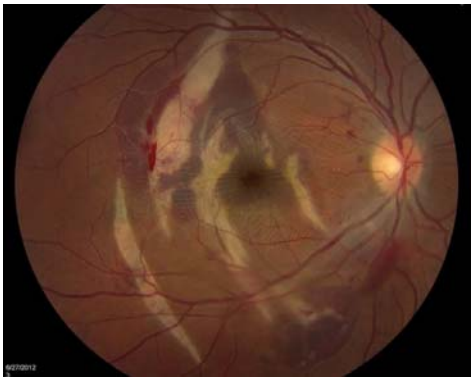
YET ANOTHER DOWNHILL TURN

- Techy McDrunkardson was "just trying to stop a fight" when he took a shot to the eye. His IOP is 40 with tight lids that are difficult to open, and I'm having trouble pushing the globe back. He reads 20/30 and pupils are normal. What do I do?
  - Hang out with Techy and give him every drop you've got to lower IOP
- Techy says you're starting to look funny and now he has a 1+ rAPD. Now what do I do?
  - Emergent canthotomy/cantholysis.
- We saved the eye. Hooray. We finally get to the dilated exam and see? What do I do?
  - Commotio retinae. Nothing, it gets better on its own (usually)
- What makes it look that way?
  - Intracellular RPE edema



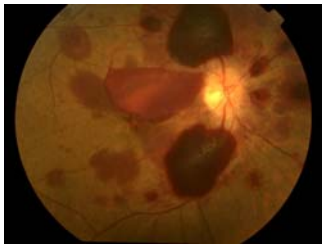
YOU SHOULD SEE THE OTHER GUY

- The next contestant steps up and the dilated exam looks like this, which is a choroidal rupture. Outcomes vary widely based on the location of the rupture. No intervention is required initially (sometimes need avastin later for secondary CNVM)



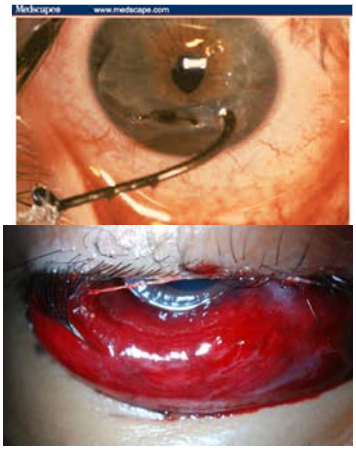
WOW, THIS GOT OUT OF HAND

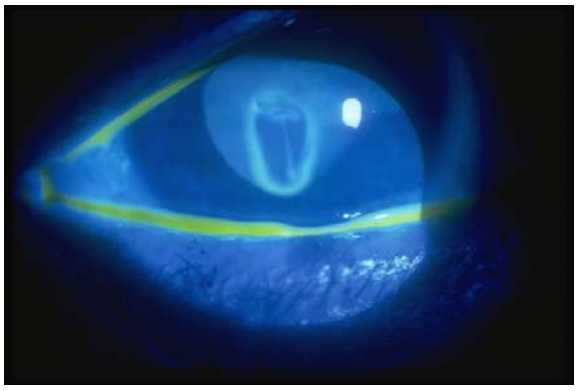
- The next guy got run over by a car and has tire marks across his chest. This is Purtscher's retinopathy from crush injury.
- The last person staggers in and is diagnosed with subdural hemorrhage. This is Terson's syndrome, which occurs due to vascular pressure change in the setting of a subdural hemorrhage.

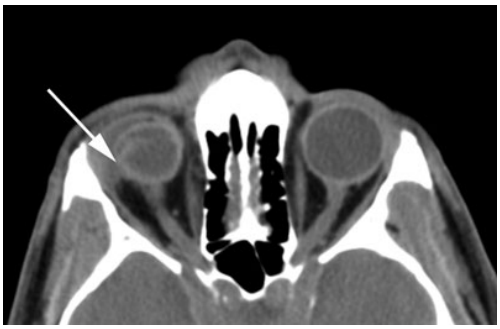


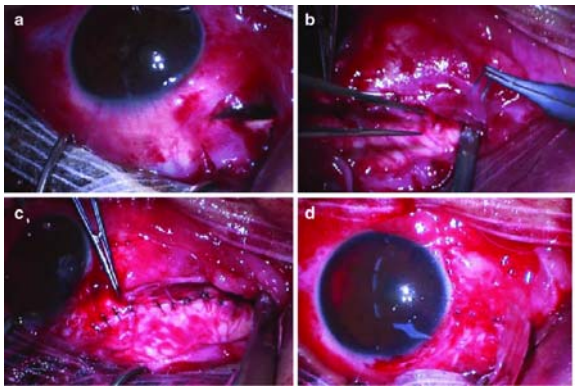
I THINK I CAUGHT ONE DAD!!

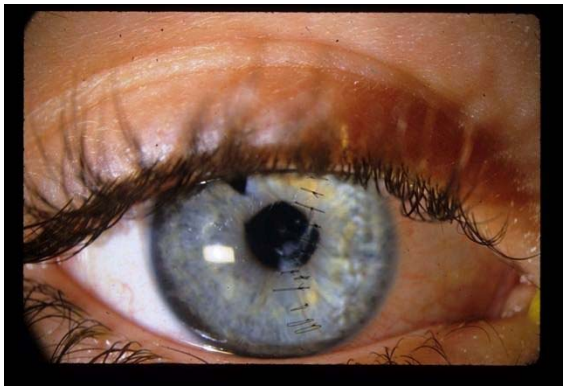
- Some open globes are obvious, but a surprising number are not. In cases that are obvious, we stop our exam immediately, shield the eye, and schedule surgery.
- In cases that are not obvious, Seidel testing, gentle IOP check, CT scan may all be helpful. If it is still unclear, the patient should be taken to OR to look more thoroughly under anesthesia







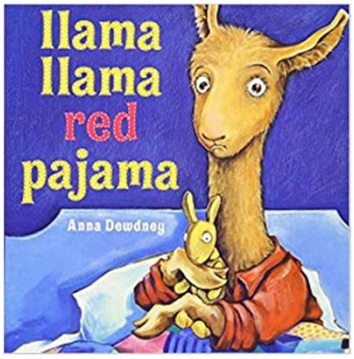




THIS IS WHAT WE CALL A "LOST CAUSE"

- No seriously.

TIME TO BRING IT BACK AROUND. WHAT WOULD I DO IF CONTINUALLY FORCED TO READ THIS STORY?



A YOUNG, HIP PARENT WOULD HAVE LUDACRIS READ HIS KID THE BEDTIME STORY

- Hint: read the book on your own first, to really get the genius of Luda
- Then enjoy as your daughter learns how to ask for the Ludacris version