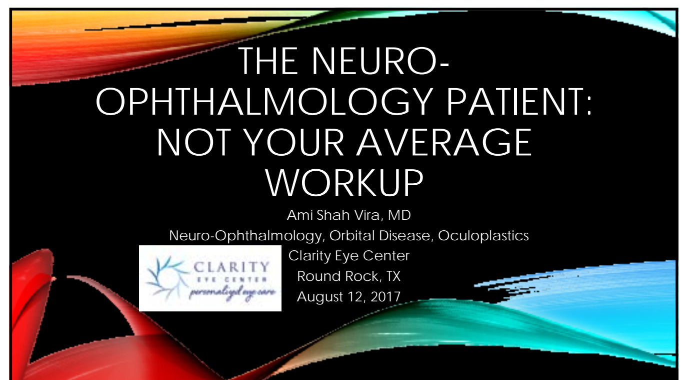
THE NEURO-OPHTHALMOLOGY PATIENT: NOT YOUR AVERAGE WORKUP
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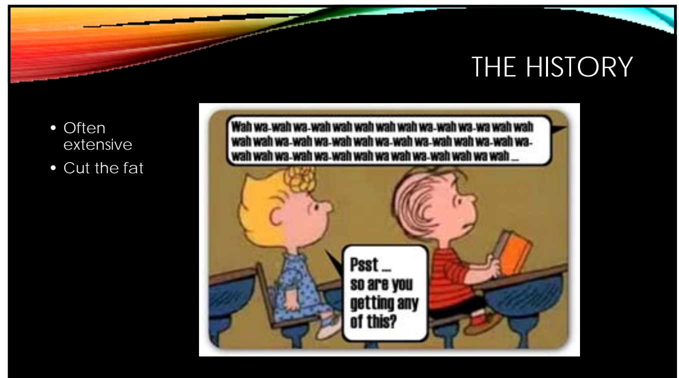
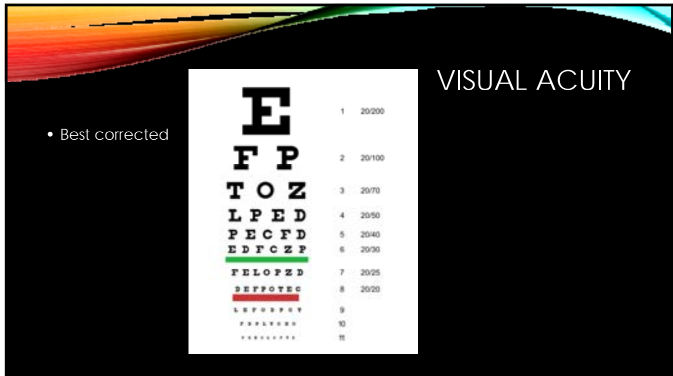
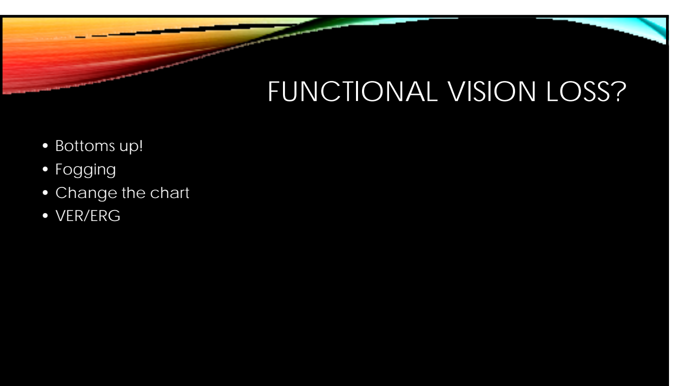
Clarity Eye Center
Round Rock, TX
August 12, 2017
CLARITY
EYE CENTER
personalized eye care

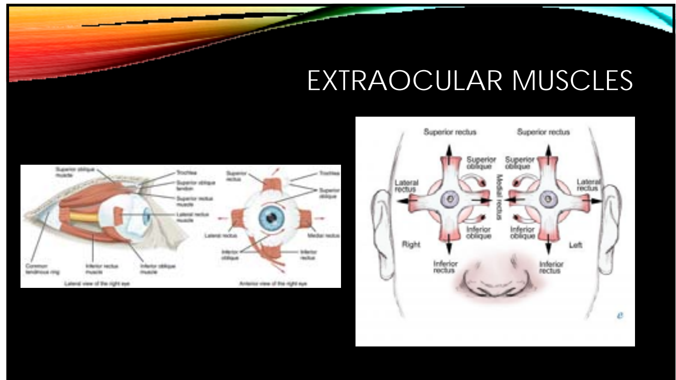
FINANCIAL DISCLOSURE
• I have no financial disclosures.

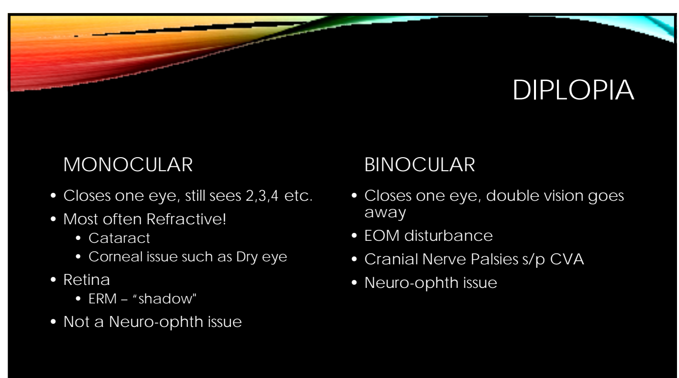
THE FIRST IMPRESSION
• Just like dating
• Further workup vs. Not
• Fixable vs. Not
You never get a second chance to make a first impression.


THE HISTORY
• Often extensive
• Cut the fat
Wah wa-wah wa-wah wah wah wah wah wa-wah wa-wa wah wah wah wah wa-wah wa-wah wah wa-wah wa-wah wah wa-wah wa-wah wah wa-wah wa-wah wah wa wah wa-wah wah wa wah ...
Psst ... so are you getting any of this?

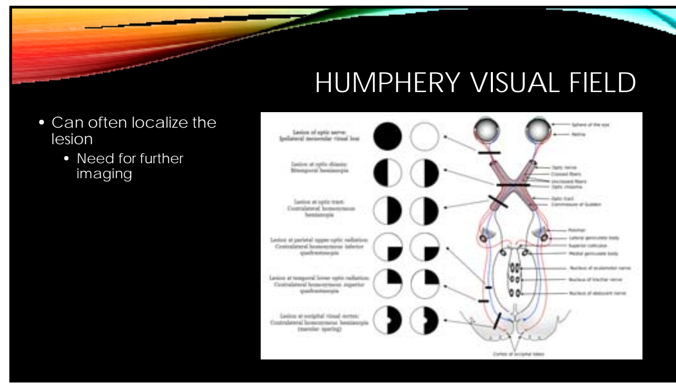

VISUAL ACUITY
• Best corrected
E
F P
T O Z
L P E D
P E C F D
E D F C Z P
F E L O P Z D
D E F P O T E C
1 20/200
2 20/100
3 20/70
4 20/50
5 20/40
6 20/30
7 20/25
8 20/20
9
10
11


FUNCTIONAL VISION LOSS?
• Bottoms up!
• Fogging
• Change the chart
• VER/ERG


EXTRAOCULAR MUSCLES
Superior rectus
Superior rectus
Superior oblique
Superior oblique
Lateral rectus
Medial rectus
Lateral rectus
Inferior oblique
Inferior oblique
Right
Left
Inferior rectus
Inferior rectus


DIPLOPIA
MONOCULAR
• Closes one eye, still sees 2,3,4 etc.
• Most often Refractive!
• Cataract
• Corneal issue such as Dry eye
• Retina
• ERM – "shadow"
• Not a Neuro-ophth issue
BINOCULAR
• Closes one eye, double vision goes away
• EOM disturbance
• Cranial Nerve Palsies s/p CVA
• Neuro-ophth issue

CONFRONTATIONAL FIELDS
• Good for bedside, patients unable to complete HVF, and general screening
• Formal HVFs far superior

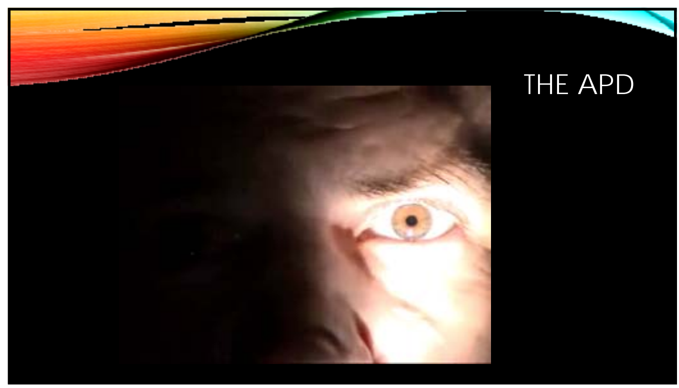


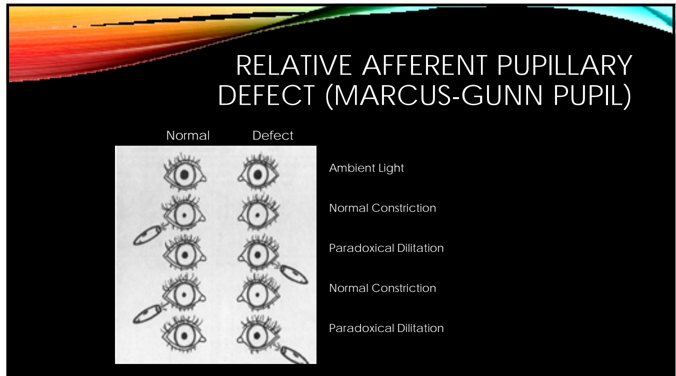
THE PUPIL

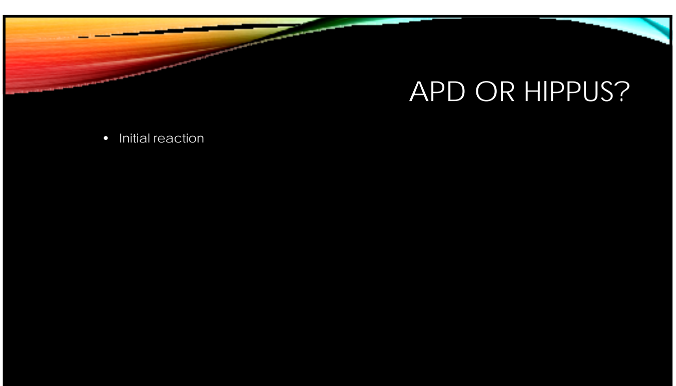
- One of the most important parts of the workup
- Real pathology vs. Functional Vision Loss
- Focus on a point in the distance
- Size in light and dark, shape, reactivity

RAPD: COMMON CAUSES

- Ischemic optic neuropathy (GCA, microvascular, idiopathic)
- Asymmetric glaucoma
- Trauma
- Compressive
- Infiltrative
- Inflammatory (optic neuritis)
- Retinal disease (macular degeneration, macular scar, diabetic retinopathy)
  - Generally rather minimal RAPD
  - Generally very noticeable macular, retinal pathology


THE APD


RELATIVE AFFERENT PUPILLARY DEFECT (MARCUS-GUNN PUPIL)
Normal
Defect
Ambient Light
Normal Constriction
Paradoxical Dilitation
Normal Constriction
Paradoxical Dilitation


APD OR HIPPUS?
• Initial reaction

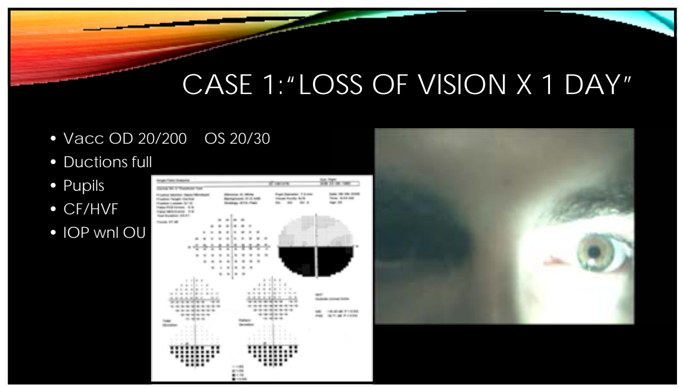
INTRAOCULAR PRESSURE

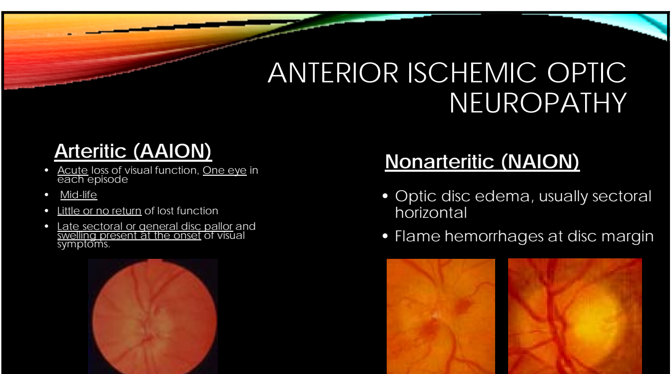
- OK to check!

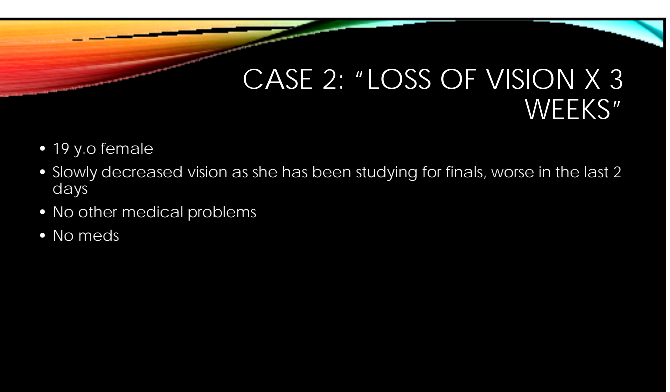
GUESS THE DIAGNOSIS FROM THE WORKUP

CASE 1:"LOSS OF VISION X 1 DAY"

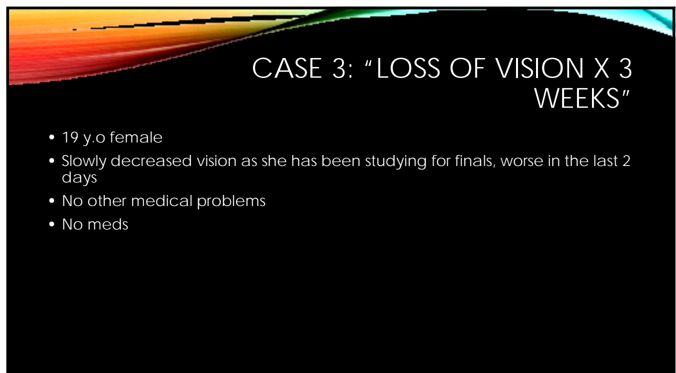
- 78 y.o. male
- Woke up with decreased vision in his right eye
- History of HTN, DM2, Heart disease (stents), wears a CPAP
- Long list of meds for all of the above issues

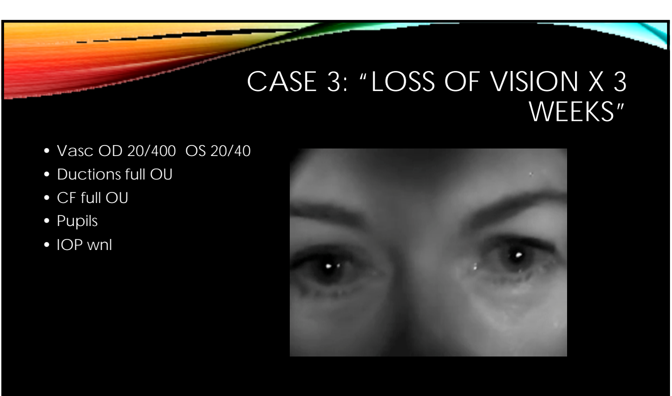

CASE 1:"LOSS OF VISION X 1 DAY"
Vacc OD 20/200 OS 20/30
Ductions full
Pupils
CF/HVF
IOP wnl OU


ANTERIOR ISCHEMIC OPTIC NEUROPATHY
Arteritic (AAION)
Acute loss of visual function, One eye in each episode
Mid-life
Little or no return of lost function
Late sectoral or general disc pallor and swelling present at the onset of visual symptoms.
Nonarteritic (NAION)
Optic disc edema, usually sectoral horizontal
Flame hemorrhages at disc margin


CASE 2: "LOSS OF VISION X 3 WEEKS"
19 y.o female
Slowly decreased vision as she has been studying for finals, worse in the last 2 days
No other medical problems
No meds

CASE 2: "LOSS OF VISION X 3 WEEKS"
• Vasc OD 20/400 OS 20/40
• Ductions full OU
• CF full OU
• Pupils
• IOP wnl
• PH OD 20/30 OS 20/20
Refract!


CASE 3: "LOSS OF VISION X 3 WEEKS"
• 19 y.o female
• Slowly decreased vision as she has been studying for finals, worse in the last 2 days
• No other medical problems
• No meds


CASE 3: "LOSS OF VISION X 3 WEEKS"
• Vasc OD 20/400 OS 20/40
• Ductions full OU
• CF full OU
• Pupils
• IOP wnl

OPTIC NEURITIS

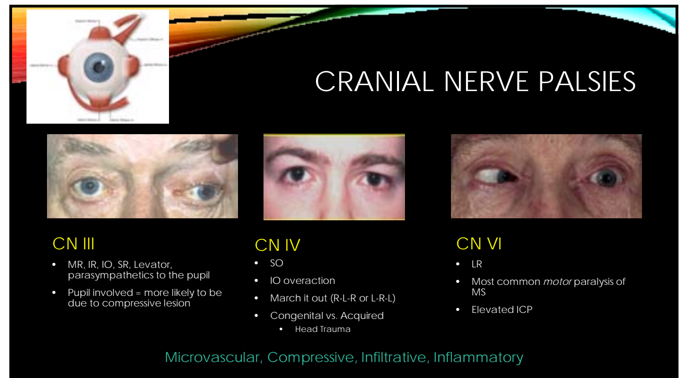
- Clinical diagnosis that is made when a patient presents with
  - unilateral decreased visual acuity
  - pain with eye movement and/or periorbital discomfort
  - RAPD
  - visual field defect
  - optic nerve swelling (35% anterior disc edema, 65% retrobulbar)
- Inflammation along the optic nerve
- Commonly associated with Multiple Sclerosis but, does not have to be
  - Most common CN involved
- Inflammatory, Infectious, Infiltrative
- MRI brain/orbits

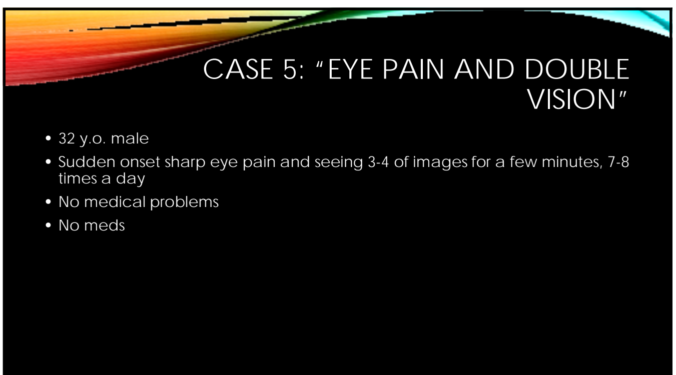
CASE 4: "SUDDEN ONSET DOUBLE VISION"

- 69 y.o. female
- First noticed double vision when she was driving yesterday
- History of DM2 on insulin

CASE 4: "SUDDEN ONSET DOUBLE VISION"

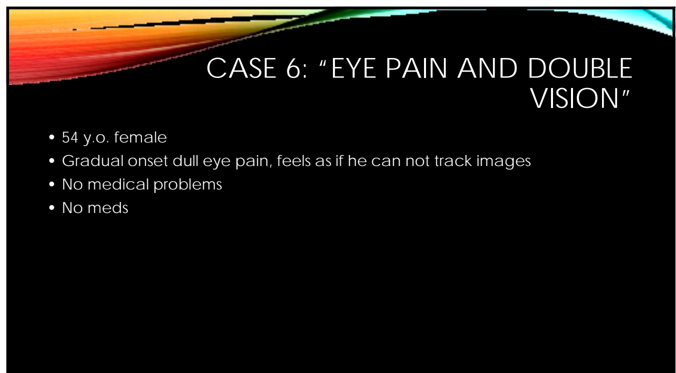
- Vacc OD 20/30 OS 20/25
- Ductions
- Pupils PERRL, no APD OU
- CF full OU


CRANIAL NERVE PALSIES
CN III
MR, IR, IO, SR, Levator, parasympathetics to the pupil
Pupil involved = more likely to be due to compressive lesion
CN IV
SO
IO overaction
March it out (R-L-R or L-R-L)
Congenital vs. Acquired
Head Trauma
CN VI
LR
Most common motor paralysis of MS
Elevated ICP
Microvascular, Compressive, Infiltrative, Inflammatory

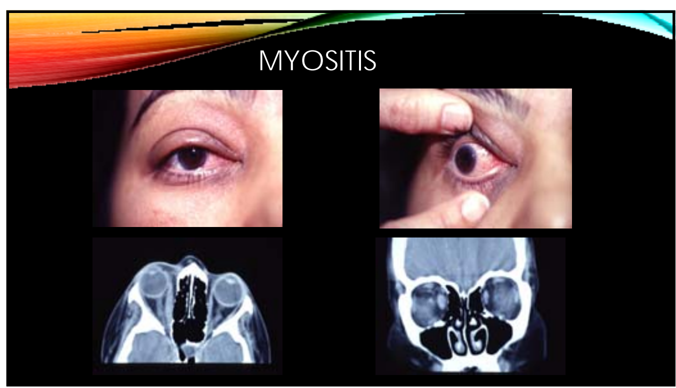

CASE 5: "EYE PAIN AND DOUBLE VISION"
32 y.o. male
Sudden onset sharp eye pain and seeing 3-4 of images for a few minutes, 7-8 times a day
No medical problems
No meds

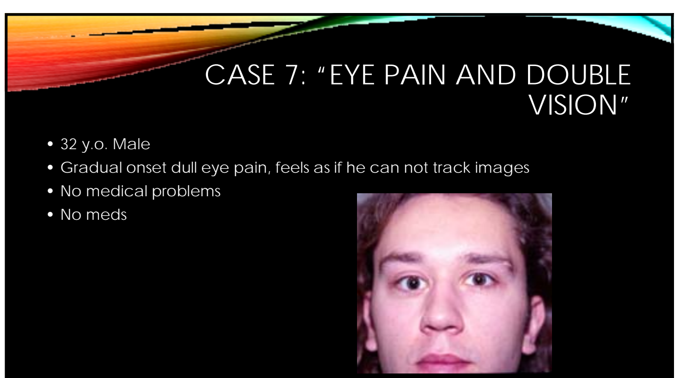
CASE 5: "EYE PAIN AND DOUBLE VISION"
Vasc OD 20/50 OS 20/50
Ductions
Pupils PERRL, no APD OU
CF full OU
IOP wnl OU

DRY EYE
• Intermittent diplopia
• Monocular
Sight Gags by Scott Lee, O.D.
"Stop wasting it!
I don't care if your eyes are dry!"

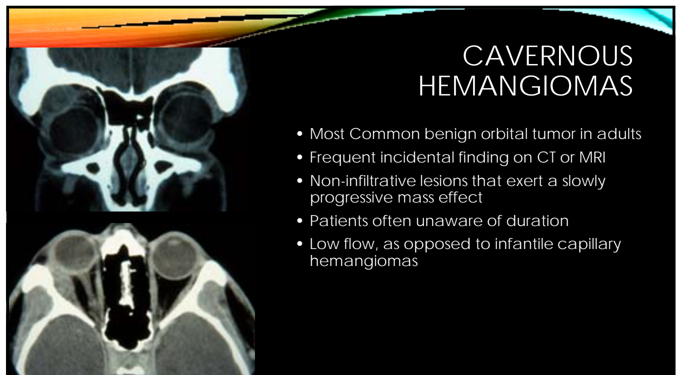

CASE 6: "EYE PAIN AND DOUBLE VISION"
• 54 y.o. female
• Gradual onset dull eye pain, feels as if he can not track images
• No medical problems
• No meds

CASE 6: "EYE PAIN AND DOUBLE VISION"
• Vasc OD 20/40 OS 20/50
• Ductions
• Pupils PERRL, no APD OU
• CF full OU
• IOP wnl OU


MYOSITIS


CASE 7: "EYE PAIN AND DOUBLE VISION"
• 32 y.o. Male
• Gradual onset dull eye pain, feels as if he can not track images
• No medical problems
• No meds

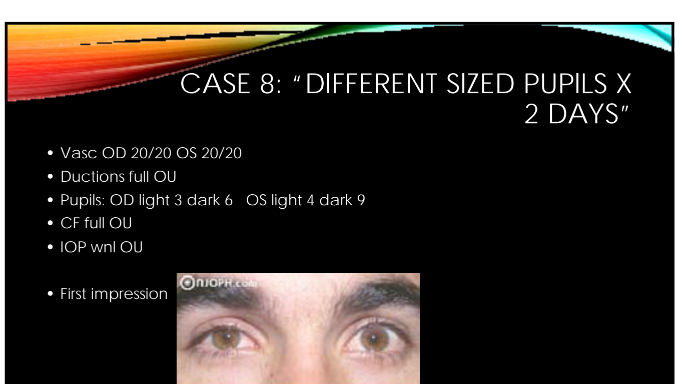
CASE 7: "EYE PAIN AND DOUBLE VISION"
• Vasc OD 20/30 OS 20/40
• Ductions
• Pupils PERRL, no APD OU
• CF full OU
• IOP wnl OU



CASE 8: "DIFFERENT SIZED PUPILS X 2 DAYS"

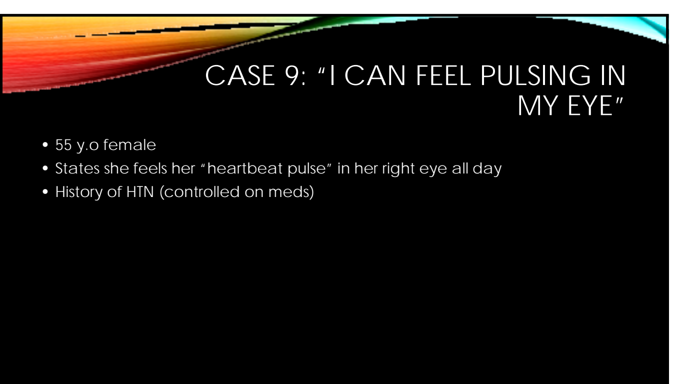
- 29 y.o. male
- His wife noticed his pupils looked different
- No medical problems
- No meds

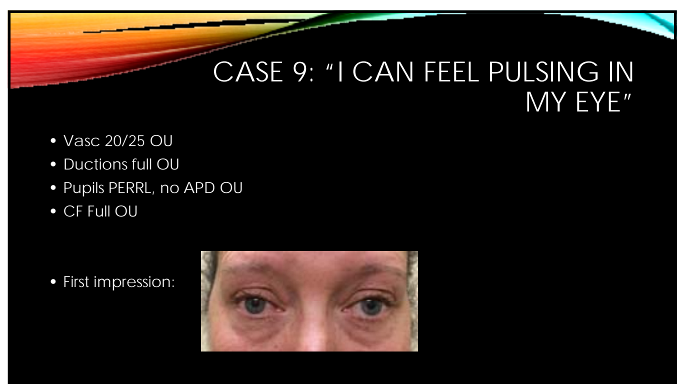
- First impression: Smells like a crate of cigarettes



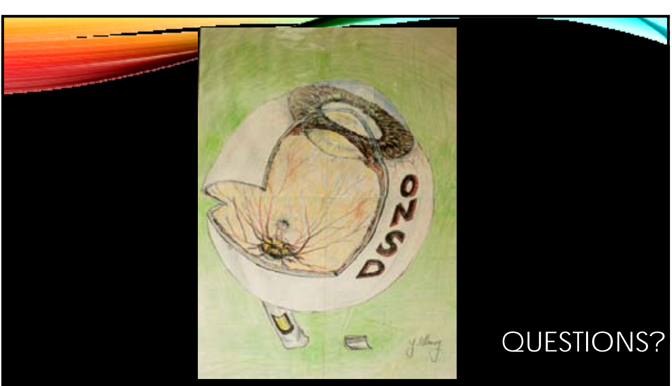
Flowchart explaining the approach to a patient with anisocoria

ANISOCORIA
Horner's Syndrome
Pupillodilator dysfunction
Damage to the sympathetic pathway
Common cause: lung cancer
Signs: ptosis (droopy eyelid), miosis, facial anhydrosis (sweat gland denervation), iris heterochromia (congenital Horner's)
Pupil reacts normally to light and near
Adie's Tonic Pupil
Damage to ciliary ganglion or postganglionic fibers of the short ciliary nerve (parasympathetic pathway problem)
Usually unilateral, common in females
The affected eye is dilated and reacts poorly to light (poor direct and consensual response)
Near reaction is strong, slow, and tonic
When the patient refixates at distance, the pupil redilates very slowly
Vermiform movements
Physiologic
Equal difference in light and dark
Usually <1mm


CASE 9: "I CAN FEEL PULSING IN MY EYE"
55 y.o female
States she feels her "heartbeat pulse" in her right eye all day
History of HTN (controlled on meds)


CASE 9: "I CAN FEEL PULSING IN MY EYE"
• Vasc 20/25 OU
• Ductions full OU
• Pupils PERRL, no APD OU
• CF Full OU
• First impression:

ORBITAL ROOF DYSGENESIS


ONSD
QUESTIONS?

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