US EYE
BETTER TOGETHER

NEURAL PEARLS

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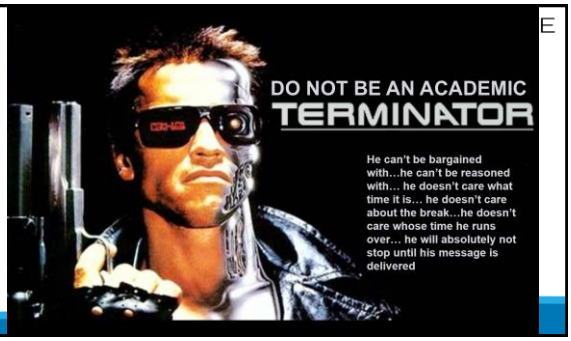
DISCLOSURE:

US EYE

Dr. Joseph Sowka is/ has been in the past 24 months a consultant or member of the advisory or speaker boards for B&L. All relevant relationships have been mitigated. Dr. Sowka has no direct financial interest in any of the diseases, products or instrumentation mentioned in this presentation.

He is a co-owner of Optometric Education Consultants. www.optometricedu.com

Optometric Education Consultants



US EYE

NEURO-OP IS A FINANCIALLY REWARDING SPECIALTY…

US EYE

NEURO-OP IS A FINANCIALLY REWARDING SPECIALTY…SAID NOBODY EVER

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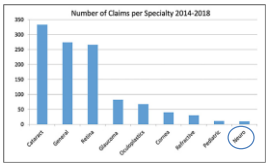

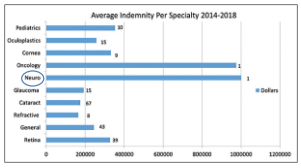

Courtesy of Ophthalmic Mutual Insurance Company

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Neuro-Op

- High risk
- Is this urgent? Can it wait?
- Complicated
- Diagnose and Adios
- Schedule-busting

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KNOW WHAT CAN KILL, MAIM, AND BLIND IMMEDIATELY.

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ONCE YOU HAVE RULED OUT BAD STUFF, YOU HAVE TIME TO FIGURE THINGS OUT.

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ACUTE PAINFUL IS A NEURO-OPHTHALMIC EMERGENCY

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ACUTE PAINFUL *ANYTHING* IS A NEURO-OPHTHALMIC EMERGENCY

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URGENCY OF EVALUATION IS DICTATED BY DURATION OF CONDITION

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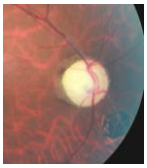
46 YOM

- Reports waking up 3 months ago not being able to see OD
- LP OD, 20/20 OS
- Disc pallor OD- no other concurrent findings
- Last medical exam unknown- no medical hx
- Resident gets nervous- sends to ER immediately
- How long do we have to get this worked up?



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ER PHYSICIAN ENCOUNTERING A PATIENT WITH AN EYE PROBLEM

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Neuro-ophthalmic Urgencies and Emergencies

- GCA
  - Any sudden vision loss in the elderly
- Pituitary apoplexy
  - Headache, field loss, diplopia
- Aneurysm
  - Pupils
- Papilledema
  - Clinical suspicion
- Carotid dissection
  - Horner syndrome

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66 YOF ESR = 96

- New onset sudden vision loss
  - VA: 20/400 (longstanding macular scar)
  - Noticed inferior vision loss x 1 day
  - Inferior arcuate scotoma
- OD disc edema- mild pallor, no hemorrhages or teliangectasia
- OS disc- small, crowded disc at risk; C/D < 0.2
- Mild headache- relieved by OTC
- Malaise and loss of appetite- lost 7 lbs over 4 weeks
- No jaw claudication or temporal head pain
- What to do?

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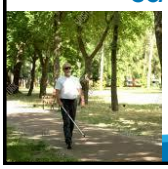
ANY ACUTE VISION LOSS IN THE ELDERLY IS GCA UNTIL PROVEN OTHERWISE



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Anterior ISCHEMIC OPTIC NEUROPATHY

- Hypoperfusion of the posterior ciliary arterial supply to the anterior optic nerve head.
- May be arteritic (AAION) or non-arteritic (NAAION)
- Mechanical factors and atherosclerotic disease play a role in the non-arteritic form while vasculitis contributes in the arteritic form.
- Unilateral presentation but high incidence of subsequent contralateral involvement
  - AAION

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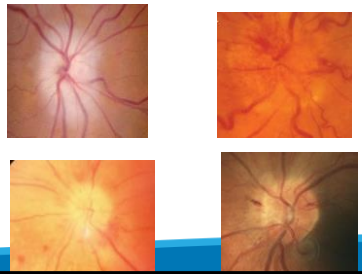
AAION VS NAAION



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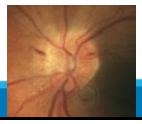
NAAION

- Risk factors:
  - Hypertension, diabetes, atherosclerotic disease, small optic nerves
- Inferior field defects
- Hyperemic swollen nerve- disc at risk
- Progressive moderate vision loss with potential recovery
- Late 30s/ early 40s and beyond
- Painless



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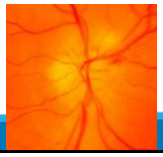
AAION

- Pallid optic nerve swelling with flame hemorrhages, arteriole attenuation and NFL infarcts
- Pain (of some sort)
- Severe optic nerve dysfunction
- Visual field defects
- Giant cell arteritis/ PMR- risk factors
- Typically 70s, uncommon under 60
  - Any patient over 50 is at risk
- High risk bilateral involvement



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Diagnosis

- Careful history: Must directly ask about nonvisual symptoms
  - Headache (present in over 90%), scalp tenderness, jaw claudication (almost diagnostic), ear pain, arthralgias, temple pain and/or tenderness, malaise, intermittent fevers
- Examination
- Laboratory studies
  - Erythrocyte sedimentation rate
    - Lowered by statins and NSAIDS
  - C-reactive protein
    - Not affected by statins and NSAIDS
  - Elevated platelet count

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Initial symptoms in GCA

- Headache
- PMR
  - Chair, hair, stair, fair
- Fever
- Visual symptoms without vision loss
  - TIA, diplopia
- Weakness, malaise, fatigue
- What do all of these things have in common?

A normal exam

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Vision Loss and Ocular Findings in GCA

- AION
- CRAO
- PION
- TIA
- Transient diplopia

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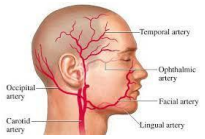
Headache and pain in GCA

- Temporal
- Occipital
- Neck
- Ear
- Jaw
- Scalp



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AAION

Diagnosis

- Prodrome, GCA symptoms
- Elevated ESR/CRP (combination of the two gives high specificity [97%])
- Elevated platelet count (acute phase reactant)
- Ophthalmoscopy
- Fluorescein angiography
- Temporal artery Biopsy
  - Negative biopsy: Read the report- "No giant cells, no active arteritis"
  - Focal interruption of the internal elastic lamina= healed arteritis
- Temporal artery ultrasound

Treatment

- Prompt steroids and hydration
- Consider IV when vision loss present
  - Very effective in prevention of second eye
  - Occasionally restores vision
  - Best done through ER
  - 250 mg solumedrol QID x 3 days followed by orals

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NAAION IS DIAGNOSED IN THE NEGATIVE. GET THE TESTS DONE PROMPTLY WITH AION

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REMEMBER THE E'S IN GCA:
ELDERLY, ESR IS ELEVATED, ONLY SEES THE BIG E ON THE EYE CHART, AND ITS AN EMERGENCY

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What to say to the ER doc

- Don't say, "*This patient has blurred vision*"

- Say, "*This elderly patient has suddenly lost vision in one eye and will go totally blind from giant cell arteritis if they aren't treated with steroids immediately!*"

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Neuro-ophthalmic Urgencies and Emergencies

- GCA
  - Any sudden vision loss in the elderly
- Pituitary apoplexy
  - Headache, field loss, diplopia
- Aneurysm
  - Pupils
- Papilledema
  - Clinical suspicion
- Carotid dissection
  - Horner syndrome

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28 YOF

- Presents with intermittent blurred vision & visual "grey-outs", intermittent horizontal diplopia, and chronic headache steadily worsening X 2 weeks
- MHx: "white coat hypertension", shoulder injury X 6 mos
- Meds: Flexeril® 10 mg BID PRN
- Height / weight: 5'3", 220 lbs.
- VA: OD 20/20, OS 20/20
- Pupils & motility: normal

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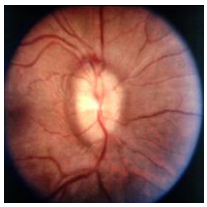
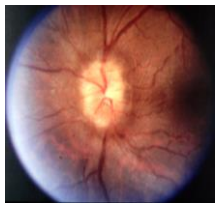

What questions do you want to ask?
What tests do you want to perform?

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28 YOF

- Additional hx: Dull "ringing" in ears
- BP: 142/100
- SLE: unremarkable
- T_A: OU 16 mm Hg
- VF: blind spot enlargement & nasal step defect OU
- Serology Normal
- Imaging: small ventricles, otherwise normal
- LP: O.P. = 510 mm H_2O; all CSF studies normal
- DX: Pseudotumor cerebri (PTC)

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PAPILLEDEMA: Signs & Symptoms

- Signs:
  - bilateral disc edema
    - superior & inferior aspects of discs affected FIRST
    - obliteration of optic cup
    - hemorrhages common
    - absence of SVP
    - Paton's folds
  - highly variable VF defects
    - enlarged blind spot (early)
    - arcuate defects and constricted (late)
  - NO RAPD typically
  - VA near normal
- Symptoms:
  - Visual:
    - transient visual obscurations
    - intermittent horizontal diplopia
  - General:
    - headache common
    - nausea & vomiting
    - dizziness
    - tinnitus

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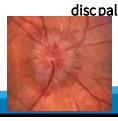
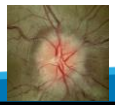
Papilledema Types:

- Acute
  - Hemorrhages, exudates, hyperemia, RNFL edema
- Chronic
  - Minimal hemorrhage/exudate. Collateral vessels may be present
- Atrophic
  - Eventually occurs If papilledema remains chronic. Optic disc pallor

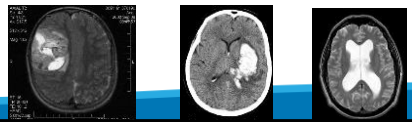




PAPILLEDEMA Pathophysiology

- Disc edema results from axoplasmic stasis
  - intracellular fluids, metabolic by-products accumulate and are regurgitated at the level of the optic nerve head
  - in papilledema, cerebral edema is effectively transmitted along the common meningeal sheaths of the brain and optic nerve producing an engorged, swollen disc.

PAPILLEDEMA Pathophysiology

- Associated with intracranial abnormalities:
  - increased brain volume (intracranial mass lesion)
  - increased intracranial blood volume
    - Intracranial hemorrhage
  - increased CSF volume
    - Hydrocephalus
    - Ventricular blockage by mass lesion



PAPILLEDEMA Management

- Rule out "swollen disc masqueraders"
  - ultrasonography can be invaluable in differentiating ONHD
  - also consider color, margins, SVP, vasculature, etc.
- Acute papilledema constitutes a medical emergency
  - Immediate neuro-imaging to rule out an intracranial mass.
  - If imaging is normal, lumbar puncture to measure CSF pressure and exclude meningitis or other disease processes is necessary.
- Atrophic papilledema with significant vision/field loss:
  - urgent measures must be undertaken to prevent blindness
- Papilledema accompanied by any neurologic abnormalities, fever or stiff neck:
  - Possible serious underlying neurologic abnormality, intracranial infection or bleed requiring immediate medical attention.

PTC vs. IIH

- Pseudotumor Cerebri (PTC)
  - Increased intracranial pressure in the absence of an intracranial mass lesion
  - Many causative agents have been identified
- Idiopathic Intracranial Hypertension (IIH)
  - Increased intracranial pressure without an identifiable cause
  - Young, obese females are at risk
- Primary PTC
  - IIH
- Poor CFS drainage

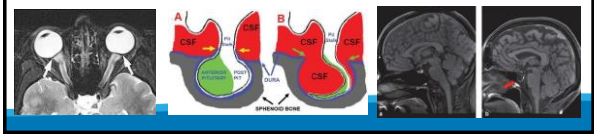
PSEUDOTUMOR CEREBRI DIAGNOSIS

- Si/SX: consistent with increased ICP
- Papilledema
- Normal neurological examination
  - except for cranial nerve 6 abnormalities
- Neuro-imaging: Normal without evidence of hydrocephalus, mass, or structural lesion, thrombosis
- Normal CSF composition

Elevated LP opening pressure
- Adults: > 250 mm CSF
- Children: > 280 mm CSF
  > 250 mm CSF if not sedated/obese

PSEUDOTUMOR CEREBRI DIAGNOSIS

- LP may be deferred if:
- MRI/MRV shows no additional abnormalities and has characteristic findings of flattened globe and empty sella.
- No evidence of fever or acute infection
- Typical profile



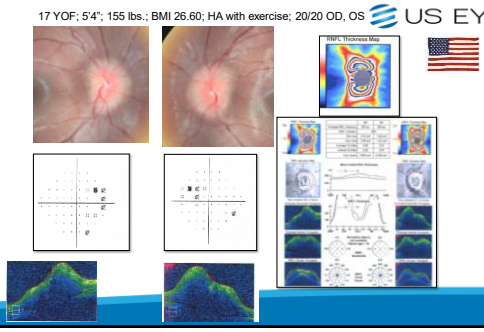
PSEUDOTUMOR CEREBRI MANAGEMENT

- No visual loss
  - Symptomatic headache therapy
  - Acetazolamide 500 mg tid
  - Weight reduction
- Mild visual loss
  - Acetazolamide 500 mg tid
    - Furosemide, Topiramate, Zonisamide
  - Weight reduction

PSEUDOTUMOR CEREBRI MANAGEMENT

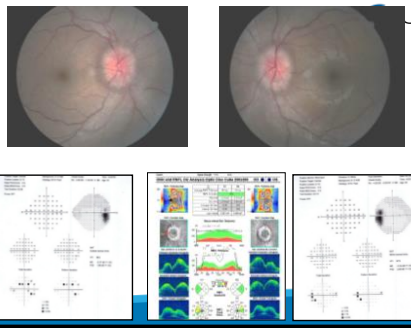
- No/ Mild visual loss
  - Prognosis
    - Excellent (all signs and symptoms, visual loss)
    - 6-9 months
  - Follow-up and visual fields
- Role of weight loss
  - Treat the primary problem
    - 10% weight loss
  - Prevent recurrence
    - Keep the weight down

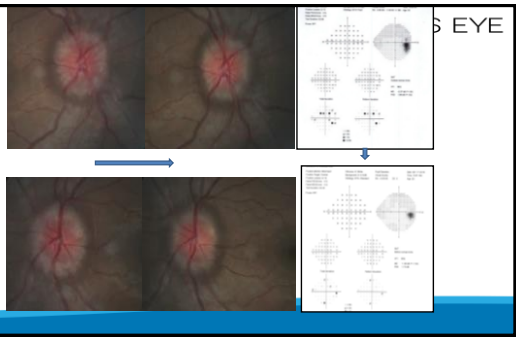
17 YOF; 5'4"; 155 lbs.; BMI 26.60; HA with exercise; 20/20 OD, OS



33 YOF

- Horizontal diplopia
- Headache
- TVOs 20/day
- Denies OCP, tetracyclines, vitamin A
- Lost 10 lbs- headaches improved
- 118/72
- 5'5"; 160lbs; BMI 26.62





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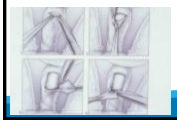
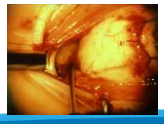
PSEUDOTUMOR CEREBRI MANAGEMENT

- Severe, or progression of visual loss
  - Optic nerve sheath decompression (ONSD)
  - High-dose IV steroids and acetazolamide
  - Lumboperitoneal shunt
    - Failed ONSD
    - Declined ONSD
    - Intractable headache





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IIH IS A SLOWLY PROGRESSIVE CONDITION…UNTIL ITS NOT

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Fulminant IIH

- Same diagnostic criteria for IIH/ PTC
- Less than 4 weeks between symptoms and loss of field/ acuity
- Vision worsening rapidly over several days
- Typically needs CSF diversion surgery and/or ONS fenestration

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Neuro-ophthalmic Urgencies and Emergencies

- GCA
  - Any sudden vision loss in the elderly
- Pituitary apoplexy
  - Headache, field loss, diplopia
- Aneurysm
  - Pupils
- Papilledema
  - Clinical suspicion
- Carotid dissection
  - Horner syndrome

US EYE

63 YOIM

- Long standing glaucoma patient
- Sudden onset of orbital pain x 3 days
- + DM; +HTN
- On coumadin
- Pacemaker
- No vision change
- Presents as walk-in emergency glaucoma eval

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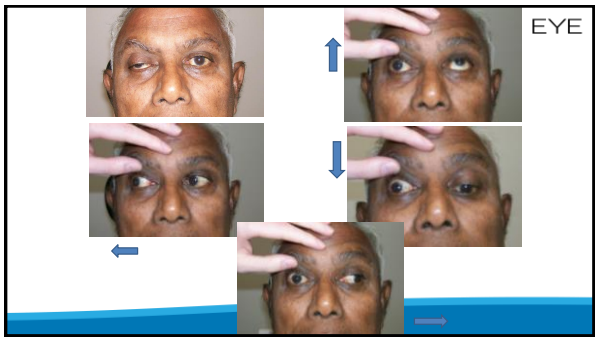
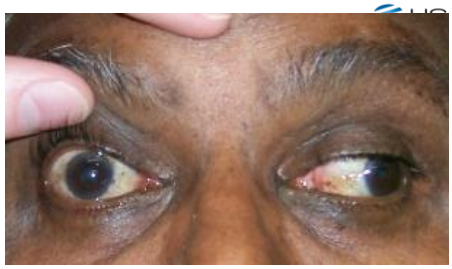
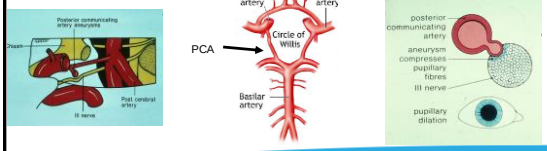


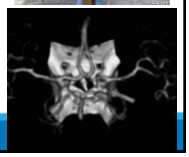


DX: Right pupil involved CN 3 palsy from aneurysm

- 50% die from aneurysm rupture w/i 29 days
- 20% die within 48 hours
  - –Needs emergency care and time counts



- Sent to ER with detailed notes, recommendations, and cell phone #. Called triage nurse in advance
  - Pupil involved right third nerve palsy
  - Most likely cause: intracranial aneurysm of posterior communicating artery
  - Needs CT/CTA/ neurosurgical consult STAT
  - Was in scanner within 45 minutes
  - Leaking but unruptured aneurysm confirmed with CTA
  - Endovascular therapy with coils successful (2 procedures)
  - Hospitalized 23 days
  - Ptosis improved, motility and pupil didn't, but he *did* live

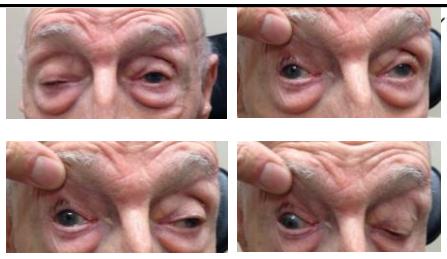


CN III Palsy Clinical Picture

- An eye that is down and out with a ptosis
- Adduction, elevation, depression deficits
- Isocoric or anisocoric

83 YOM

- Diabetic; LBS in 300s;
- A1C around 11
- Pupils normal
- MRI ordered through PCP
- Indication for Imaging: *Brain Ischemia*
- What 2 errors were made here?



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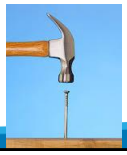
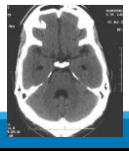
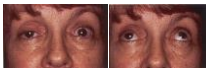
THE WORLD'S BEST NEURORADIOLOGIST CAN'T HELP YOU IF YOU DON'T ORDER THE SCAN, ORDER THE RIGHT SCAN, AND TELL THEM WHAT TO LOOK FOR.





Still More Clues



- Pupil involved CN III palsy is PCOM aneurysm until proven otherwise
- Incomplete palsy is PCOM aneurysm until proven otherwise
  - Regardless of pupil
- 30% of CN III palsy are caused by aneurysm
- Pain is pain
  - Only helpful when not present
- Vasculopathic CN III will resolve in time
- Life threatening posterior communicating aneurysm will rupture in time

US EYE

Still More Clues

- CN III palsy caused by aneurysm
  - 20% die within 48 hrs from rupture
  - 50% overall die
  - Average time from onset to rupture – 29 days
    - 80% rupture w/i 29 days
  - Many never make it to hospital
- Ruptured aneurysms
  - 5% surgical mortality
  - 60% functional impairment post-op
- Unruptured aneurysms
  - No mortality; 75% with normal outcomes; 50% with CN III recovery

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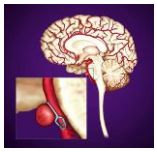
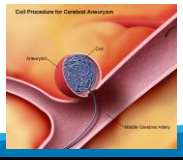
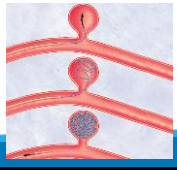
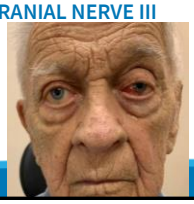


US EYE

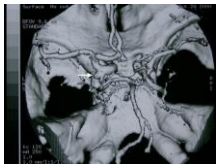
NEVER DILATE A PATIENT WITH CRANIAL NERVE III PALSY

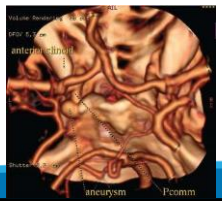


US EYE

Rules for CN III palsy imaging

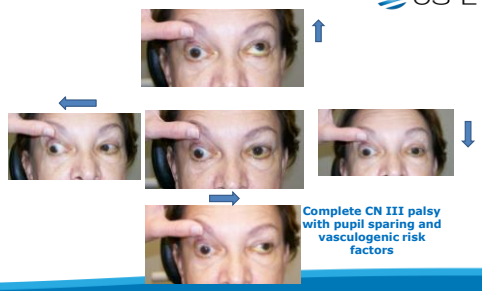
- High suspicion of aneurysm: DSA (gold standard)
- CT/CTA is preferred non-invasive imaging for CN III palsy
  - CT for SAH
- CTA requires contrast- renal impairment prefers MRI/MRA
- CTA superior to MRI when patient can't have MRI
  - Pacemaker, claustrophobia
- MRI superior for non-aneurysmal causes (tumor)
  - MRA adds very little time to scan
- Recent study shows majority of CN 3 palsy patients do not get the appropriate urgent imaging.





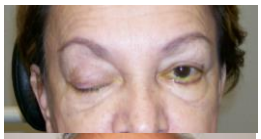
A Different patient and Prognosis

- 63 YOF
- Diabetes and HTN
- Sudden onset retro-orbital pain



Complete CN III palsy with pupil sparing and vasculogenic risk factors

WHICH IS BETTER? ONE OR TWO?



Resolves over several weeks

Hospitalized 23 days with 2 neurosurgical procedures

Suspect the worst

- Optometrist sees patient with CN III palsy
- Referred to ophthalmologist next day
- Pt dies from SAH before consult

Does presence of vasculopathic risk factors help?

- Arteriosclerotic risk factors in elderly favors microvascular etiology but does not rule out aneurysm
- HTN, DM, atherosclerosis, hyercholesterol all common and don't protect against aneurysm
- Answer: no, but makes me very nervous when NOT present

US EYE

Does acuteness of presentation help?

- Ans: Yes and No
- Aneurysm expansion usually produces acute manifestations, but chronic and evolving cases well known
- Acute is more worrisome
- Chronic and improving less worrisome but does not rule out aneurysm
- Resolved without recurrence reassuring

US EYE

Aneurysm Risk Assessment: Isolated CN 3 palsy

- Isolated dilated pupil — none
- Complete CN3-normal pupil — low
- Partial CN3 – normal pupil — high
- Pupil involved CN3 — emergency

US EYE

What to say to the ER doc

- Don't say, "*This patient has double vision*"
- Say, "*This patient has an aneurysm of the posterior communicating artery and is going to DIE if he doesn't get to neurosurgery immediately!*"

US EYE

Neuroimaging for the primary care OD

- Disclosure: I do not read MRIs (There are ODs that do- I'm not one of them)
  - What you don't know can hurt you a whole lot
  - That's the reason for residencies in radiology and subspecialties in neuroradiology
    - Thinking that I am as good is irresponsible (e.g. neuroradiologist identifying ciliary body on MRI)
- Rules for ECP: order the correct scan and read the report to ensure that the right thing was done
- If you have questions, doubts, or concerns, reach out to the radiologist
- Form a relationship with an imaging center- find out about the practice
  - Some have better results with MRA and others with CTA

US EYE

What to order, how, and why

- Disc edema/ suspect papilledema: Brain MRI with and without contrast looking for mass lesion, hydrocephalus, hemorrhage, flattened globe, empty sella; MRV looking for cerebral venous sinus thrombosis.
- Optic nerve/chiasmal disease: MRI orbits and chiasm with and without contrast with fat suppression
  - Snowball in a snowstorm
- Optic neuritis/suspect MS: MRI orbits and chiasm with and without contrast with fat suppression; MRI brain with and without contrast.
- Horner Syndrome: Brain MRI with and without contrast; CTA (or MRA) head and neck looking for cerebral artery dissection; MRI chest with lung apex and brachial plexus
  - Horner protocol or sympathetic plexus
- Suspected aneurysm (CN 3 palsy): CTA/CT and MRA/MRI with concentration to Circle of Willis
  - If high risk aneurysm-send to ER and tell them what to do.
- Don't just send to the ER without helping them. They won't get it right.

US EYE

Neuro-ophthalmic Urgencies and Emergencies

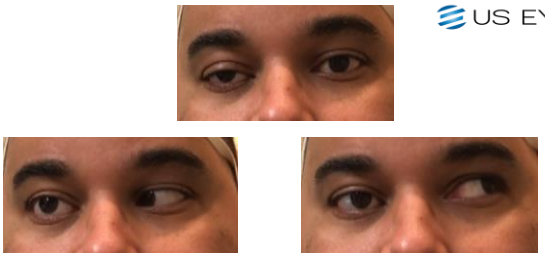
- GCA
  - Any sudden vision loss in the elderly
- Pituitary apoplexy
  - Headache, field loss, diplopia
- Aneurysm
  - Pupils
- Papilledema
  - Clinical suspicion
- Carotid dissection
  - Horner syndrome

US EYE

39 YOM

- Previous history of migraine developed a new and worsening headache.
- He presented to a hospital emergency room where he underwent a non-contrast enhanced computed tomography (CT) and magnetic resonance imaging (MRI) which were subsequently interpreted as normal.
  - His headache was attributed to migraine, and he was medicated as such and discharged.
- Three days later, he developed horizontal and vertical diplopia

US EYE



US EYE

39 YOM

- His visual acuity and visual fields were normal.
- He manifested a right pupil-sparing, external partial cranial nerve three palsy and concurrent right sixth nerve palsy. He also complained of worsening headache and lethargy.
- Where is the lesion?
- Let's contact the radiologist for a second reading…

US EYE

39 YOM

- He was immediately sent for repeat imaging to include contrast-enhanced MRI of the parasellar area and MRA to rule out intracavernous aneurysm and pituitary apoplexy.
- Imaging revealed a pituitary macroadenoma with intratumor hemorrhage consistent with pituitary apoplexy.
- Lateral spread into the right cavernous sinus and possible spread into the left cavernous sinus as well.
- No mass effect on the optic chiasm or prechiasmal intracranial portion of the optic nerve.
  - Hence normal acuity and fields
- The patient was immediately admitted for endocrinological and neurosurgical evaluation

US EYE

Pituitary apoplexy

- Pituitary apoplexy is a severe and potentially fatal medical condition complicating 2-12% of pituitary adenomas and characterized by the variable association of headache, vomiting, visual impairment, ophthalmoplegia, altered mental state and consciousness, lethargy, and panhypopituitarism.
- Hemodynamic instability may be result from adrenocorticotrophic hormone deficiency, which can be fatal.
- •Occurs due to a rapid expansion, mainly caused by hemorrhage or infarction of a preexisting (known or unknown) adenoma

US EYE

Pituitary apoplexy

- Most common presenting symptom occurring in 90 % of patients is sudden onset of severe headache
  - Commonly described as frontal or retro-orbital.
    - Pituitary apoplexy is often overlooked as a possible cause of "thunderclap headache" where diagnostic evaluations tend to direct to more common causes of this presentation including subarachnoid hemorrhage, cerebral venous sinus thrombosis, and cervical artery dissection.
- Approximately 50% have visual abnormalities
  - •Blurred vision
- Cranial nerve palsy (CN III) or palsies
  - Cranial nerve VI most common, followed by CN III
- Visual field defects
  - Bitemporal hemianopsia
- Facial weakness

Pituitary apoplexy

- Most symptomatic patients undergo CT scanning in an emergency setting due to the clinical suspicion of acute intracranial hemorrhage
- Acute hemorrhagic infarct may be seen on CT
  - Non-hemorrhagic infarcts will usually show no abnormalities without intravenous contrast
- MRI with contrast is the most effective imaging in cases of suspected pituitary apoplexy
  - MRI is superior to CT

Pituitary apoplexy

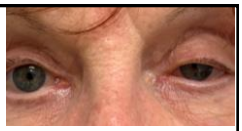
- Positive outcome in most cases
  - Conservative medical treatment
  - Stabilize and replace diminished pituitary hormones
- Surgical decompression
  - Trans-sphenoidal or subfrontal transcranial approach
  - Patients with visual impairment and neuro-ophthalmic dysfunction will be selected for surgery.
- Patient was medically stabilized, and surgery delayed due to COVID lock down
- Ultimately underwent successful surgical decompression

Neuro-ophthalmic Urgencies and Emergencies

- GCA
  - Any sudden vision loss in the elderly
- Pituitary apoplexy
  - Headache, field loss, diplopia
- Aneurysm
  - Pupils
- Papilledema
  - Clinical suspicion
- Carotid dissection
  - Horner syndrome

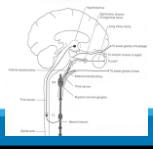
78 YOF

- Sudden onset of ptosis OS
- Immediately following parathyroid surgery
- Headache and eye pain
- Dilation lag and positive Iopidine test



WHAT IS HORNER'S SYNDROME?

A triad of clinical signs arising from disruption of sympathetic innervation to the eye and ipsilateral face that causes *miosis*, upper lid *ptosis*, mild elevation of the lower lid, and *anhydrosis* of the facial skin.

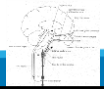


What is the most likely cause?

- Lung cancer
- Carotid dissection
- Direct surgical trauma to the nerve
- Migraine

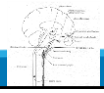
HORNER'S SYNDROME: ETIOLOGIES

- First-order neuron disorder: Stroke (e.g., vertebrobasilar artery insufficiency or infarct); tumor; multiple sclerosis (MS), and, rarely, severe osteoarthritis of the neck with bony spurs.
- Second-order neuron disorder: Tumor (e.g., lung carcinoma, metastasis, thyroid adenoma, neurofibroma). Patients with pain in the arm or scapular region should be suspected of having a Pancoast tumor. In children, consider neuroblastoma, lymphoma, or metastasis.



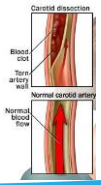
HORNER'S SYNDROME: ETIOLOGIES

- Third-order neuron disorder: Headache syndrome (e.g., cluster, migraine, Raeder paratrigeminal syndrome), internal carotid dissection, herpes zoster virus, otitis media, Tolosa–Hunt syndrome, neck trauma/tumor/inflammation, prolactinoma.
- Congenital Horner syndrome: Trauma (e.g., during delivery).
  - Heterochromia
- Other rare causes: Cervical paraganglioma, ectopic cervical thymus



Carotid Dissection

- *A 3rd-order Horner's and ipsilateral head, eye, or neck pain of acute onset should be considered diagnostic of internal carotid dissection unless proven otherwise.*



Carotid Dissection

- Carotid artery dissection presents with the sudden or gradual onset of ipsilateral neck or hemicranial pain, including eye or face pain
- Often associated with other neurologic findings including an ipsilateral Horner's syndrome, TIA, stroke, anterior ischemic optic neuropathy, subarachnoid hemorrhage, or lower cranial nerve palsies
  - 52% with ocular or hemispheric stroke with 6 days
    - 67% within first week; 89% within 2 weeks; none after 31 days
- Horner's from suspected carotid dissection should go to ER

What to say to the ER doc

- Don't say, "*This patient has a little ptosis and a little pupil.*"

- Say, "*This patient has a carotid artery dissection and will stroke out unless they get a CTA and referred to a stroke neurologist now!*"

Neuro-ophthalmic Urgencies and Emergencies

- GCA
  - Any sudden vision loss in the elderly
- Pituitary apoplexy
  - Headache, field loss, diplopia
- Aneurysm
  - Pupils
- Papilledema
  - Clinical suspicion
- Carotid dissection
  - Horner syndrome

US EYE

IF YOU LISTEN TO PATIENTS, THEY WILL TELL YOU THE DIAGNOSIS

US EYE

73 YOWF

- CC: swollen left eyelid x 3 months
- Not happy with previous doctor
  - *"They aren't listening to me"*
- Highly allergic person- had pain and ear blockage on right side of face while gardening- thinks something got into her eye
- Rx Zylet, Azasite, oral antihistamines, hot and cold compresses- no improvement
- PCP tested for GCA- negative
- Presumed allergic reaction
  - No itching, persistent and unilateral
- Hypothyroid, smoker

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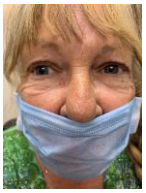
Pre-Iopidine

Post-Iopidine



US EYE

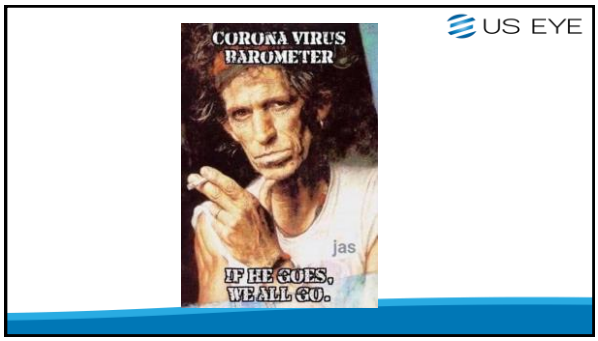
IMMEDIATELY REFERRING TO THE EMERGENCY DEPARTMENT IS ACCEPTABLE MANAGEMENT…IF YOU ARE WILLING TO HELP

US EYE

Best handled in the ED*

- Suspected GCA
- Suspected aneurysm
- Suspected papilledema
- Suspected pituitary apoplexy
- Suspected carotid dissection
- CRAO/BRAO/TIA

*As long as you are willing to help


US EYE
CORONA VIRUS
BAROMETER
jas
IF HE GOES,
WE ALL GO.