Clinical Presentations to Never Miss

Ron Melton, OD, FAAO
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Compassion in Patient Health Care

- "Compassion in society has substantially decreased over recent decades."
- "The recent increase in documentation requirements and widespread adoption of electronic medical records further impairs the ability of physicians to connect with patients and may perceive a lack of caring and emotional connection."
- "Numerous surveys have confirmed that choosing physicians, patients value compassion, kindness, connection and caring over considerations such as education, experience, wait time and cost."

Am J Ophthalmol. March 2024

Why Eye Patients Should Avoid EDs

- It was a gentleman who was hammering tile, had an injury to the eye, went to the emergency room with complaints of blurry vision and eye pain, was sent home with a treatment for corneal abrasion and returned the next day with raging endophthalmitis. It was a pierce open globe trauma that was missed on first diagnosis and went to loss of vision.

Q. So you believe you gave an opinion in that case, that an emergency physician deviated from the accepted standards of emergency medicine practice?

A. Yes

The Need for Optometric Consultations in EDs

- It is estimated that there are about 2 million ED visits for ophthalmic conditions per year.
- "Most EDs do not have easy access to ophthalmologists in the US. Almost 60% of rural hospitals report the absence of ophthalmology services."
- "Examination of the ocular fundus with ophthalmoscopy is rarely performed by ED providers, leading to diagnostic errors, delayed care and inappropriate investigations."
- M+T: Many of us should consider making ourselves available at both hospitals and urgent care centers. Enhanced patient care, and practice building!

Am J Ophthalmol, January 2026

The General Ocular Health Evaluation

- History - History- History!
- **Visual Acuity**
- **Pupillary Function**
- **Ocular alignment and EOM function**
- **Visual Field assessment**
- **Slit lamp evaluation**
- **IOP measurement**
- **Ophthalmoscopy**

Additional Testing Options

- Radiologic imaging
- Systemic blood pressure
- Electrophysiology
- Fluorescein angiogram
- Color vision assessment
- Amsler grid testing
- Carotid auscultation
- Optical coherence tomography
- Nerve fiber layer analysis

TVL in 61 WM

- "Vision went black in my right eye this morning for 4-5 minutes. It had a little white area in the center of my vision and then gradually came back. I had a HA when I awoke this morning and still across my forehead. I had a tingling in my head after vision came back for a little while."
- VA 20/30 20/25, CVF full, no APD
- Ta 12 OU 3:15 pm, oph. WNL-OU
- Sedrate (that day) 12mm/hr
- Carotid ultrasound: near total occlusion of R-ICA
- Carotid endarterectomy done in two days.

66 YOM with Hx of TLV

- "Noticed occasional fluttering in corner of left eye like a ceiling fan; only lasts a few seconds. Has happened 3 or 4 times over past several months."
- 3+ bruit on left side; good pulse sounds on right side
- VA is 20/20 20/20
- A: Probable carotid atheromatous disease
- P: Urgent carotid ultrasound ordered

66 YOM with Hx of TLV

Urgent Carotid Ultrasound:

Comments: **There is extensive plaque within the distal common and proximal internal carotid arteries. Significantly elevated peak systolic velocities within the right proximal and left proximal ICA with significantly elevated ICA/CCA ratios bilaterally as above. Findings are concerning for carotid stenosis between 75 to 99%.**

Very irregular right ICA plaque noted on the grayscale and color Doppler images. Severe narrowing also present on grayscale and color Doppler images of the left ICA.

Impression: **FINDINGS CONSISTENT WITH SEVERE BILATERAL STENOSIS POTENTIALLY 95% OR GREATER. FOLLOWUP CTA RECOMMENDED.**

RADIOLOGICAL SERVICES

Patient Name: L J **MRN: 000C** Accession #:
Patient Location: ERUS, CMC NORTHEAST ULTRASC Patient Type:OP Visit #:
Exam: 7206, US CAROTID EVAL DOPPLER → Completed: 5/8/14 4:12 pm
Clinical Information: -RAD 435.9 PVL
DOB: [redacted] Sex: M
Age: 78 Y Phone: (704)

Requesting Provider: THOMAS, RANDALL

CONCORD, NC 28025

FINAL REPORT

DATE OF SERVICE:
5/8/2014 4:12 PM

EXAM:
CAROTID ULTRASOUND

Date Seen 5-8-14 2:20pm
cc: "About two hours ago while working at computer, vision in my right eye went completely black." It came back in about 30 seconds. VA 20/20 20/20
o: No carotid sounds BP 170/80

Comments: Significant atherosclerotic plaquing is seen bilaterally most pronounced on the right. Flow velocities are elevated bilaterally and the ICA/ CCA ratio is also elevated.

IMPRESSION:
Extensive plaquing bilaterally with sonographic findings suggesting stenosis greater than 70% within both internal carotid arteries. The findings on the right are concerning for a higher grade stenosis based upon the color flow images. Further evaluation with CT angiography is recommended.

Exam: 7206, US CAROTID EVAL DOPPLER

Completed: 2/10/11 3:40 pm

Clinical Information: -RAD VISION LOSS 368.1

DOB: 8/2/57 Sex: M

Age: 53 Y

Requesting Provider: THOMAS, RANDALL
201 LEPHILLIP COURT,
OCNCORD, NC 28025

CAROTID ULTRASOUND:

Indication:
368.1. Vision loss.

RISK FACTORS:
Smoking history, hyperlipidemia, CAD.

CC: "complained of episode where the vision almost disappears, more on the right side, lasting 10-15 seconds. One half of the vision returns from the bottom up."

Smokes one pack a day for 30 years VA: 20/20 and 20/20

IOP 28 - 26 CCT 560 OU C/D .6 OD and .4 OS Last eye exam 6 years ago

Findings:
Atherosclerotic changes producing significant stenosis in both ICAs.

Comments:
Atherosclerotic changes produced severe stenosis in the proximal right ICA in the 76 to 99% diameter narrowing range.
Atherosclerotic changes produced moderate stenosis in the 50 to 75% diameter narrowing range in the left ICA.

Impression:
Atherosclerotic changes are present producing significant, flow-limiting stenosis in both ICAs, worse on the right than on the left.

3-16-16

Dr. Thomas,

March 17, marks seven years of being a nonsmoker for me and I ALWAYS credit you for helping me. You gave me a "pep" talk on quitting in late 2007 or early 2008. When I lit up after that, you'd come to mind. Anyway, I wanted you to know you have my appreciation. As an added benefit, my quitting encouraged my step-son and daughter-in-law to also quit.

May Life treat you with kindness.

Sincere thanks from me.

Tom Wakeman

Name [blank] Age 75 ♀ Date 3-10-16

Allergies NKDA PCP Kerri Ann Thompson

CC: Film over Va Referred by ——

HPI: Pt c/o intermittent film over Va OD x a few mos - c/o an especially bad episode 2 days ago "I couldn't see anything" - lasted ≈ 1 min - could not blink clear. ⊕ floaters OD - intermittent x a few mos ⊖ flashes

Accompanied by ——

Last Visit 4-7-15

History (POH, PMH) See MHS

Ocular Meds: Walmart-brand "get the red out" OU prn

ROS and family history reviewed ✓ Orientation A+Ox3pl.

VAccOD	PH OD	VAscOD 20/50+2	VAcclOD	OD
OS	OS	OS 20/20-2	OS	OS

AR OD -150 +125 x081 AK OD 4400/4625 @090

OS -075 +050 x037 OS 4500/4625 @071

W OD OTC Readers MR OD -075 +075 x080 20/25 ↓ DE BAT OD <400

OS MR OS -025 sph 20/20 Infor OS 70

M	H

Performed by: [signature] Scribed by: Dilated: (Y)/N Time 10:10

ABNORMAL/OTHER See P ou

TA OD 14 OS 14 10:10 c pulse

	WNL OD	WNL OS
CVF	✓	✓
Cover testing	✓	✓
EOM/Primary gaze	✓	✓
Pupils & Iris-shape	R	R
Direct & Consensual	✓	✓
Size ⊖APD	3	3

3+ bruits O.U.

	OD	OS
Lids	✓	✓
Adnexa	✓	✓
Conjunctiva	✓	✓
Tear Film	✓	✓
Cornea	✓	✓
A/C	D+Q	Q
Lens	—	—
Optic disc	✓	✓
C/D ratio	.1	.1
Macula	✓	✓
Vessels	✓	✓
Periphery	✓	✓

Optic disc / C/D ratio: G/OD

Lens: PC IOL ou c 1+ PCO ou

Impression/Diagnoses: ① TVL OD

② PC IOL c PCO ou

Plan/treatment: ① Get carotid U/S today STAT

Carolinas HealthCare System RADIOLOGICAL SERVICES

Patient Name:
Patient Location: Patient Type: OP - Outpatient
Requesting Provider: THOMAS ,RANDALL K OD

Reason For Exam
++ Transient visual loss, right eye

Report
DATE OF SERVICE:
* 3/10/2016 3:13 pm

EXAM:
CAROTID ULTRASOUND

CLINICAL HISTORY:
Vision changes Amaurosis

Report
LEFT VERTEBRAL ARTERY retrograde

Comments: Extensive atherosclerotic calcification present both carotid arteries, external and internal carotid arteries

IMPRESSION:
1. Retrograde flow left vertebral artery. This suggests possible flow-limiting stenosis at the origin of the left subclavian artery. Are there symptoms for subclavian steal?
2. 50-69% right ICA stenosis
3. 50-69% left ICA stenosis

Stroke Risk After Amaurosis Fugax

- Ocular TIA's and cerebral TIA's both increase the risk of stroke.
- "A study of 20 ophthalmologists showed that only 30% knew that carotid endarterectomy (ECA) was recommended within 14 days of amaurosis fugax."
- There is about a 10% risk of stroke following an episode of monocular transient vision loss (TIA)
- Prompt referral to an ED for a "stroke work-up" is now standard of care.

JAMA Ophthalmol, May 2025

Transient Monocular Vision Loss in Young Patients

- TMVL occurs as a result of retinal ischemia
- Most of these are considered “retinal migraines”
- No cause found in 80% of patients
- CTA of head and neck, MRI and MRA of brain and orbits, along with Holter monitor for 2 weeks and echocardiography is comprehensive work-up
- Significant findings found in 15-20% of patients

Am J Ophthalmol. January 2024

Mystery Eye Ailment

- Over 2 year period patient saw 12 eye doctors about redness and burning to right eye
- Dx dry eye, blepharitis, corneal dystrophy, conjunctivitis, etc….
- Patient hx of father losing sight at 30 and blind until died at 86
- Therapeutic trials: antibiotics, punctal plugs (X3), DCR with tube
- Last OD used a cotton-tipped swab lubricated with an antibiotic ointment and swept high under her upper eyelid- out popped a folded contact lens (last wore contacts 2.5 years ago!)
- Patient wanted other people to be aware of what could happen and to be wary of doctors who treat patients like hypochondriacs

Rinsada Fornix Irrigator

- A new device to retract and lavage the superior cul-de-sac
- This saline wash may be tried in cases of suspected retained cul-de-sac foreign material
- Could be helpful in treating giant fornix syndrome
- Could be an alternate approach to physically sweeping the cul-de-sac with a moistened cotton swab.

Dural Arteriovenous Malformations of the Cavernous Sinus

- **Us. women ages 50 or older; often with HTN**
- **Classic syndrome:**
  - mild to moderate proptosis
  - dilation of conjunctival vessels
  - mild to moderate conj. chemosis
  - abducens nerve paresis
  - venous stasis retinopathy
- **DDx: Conjunctivitis, dysthyroid orbitopathy, orbital pseudotumor, true orbital mass**

Dural AVM of the Cavernous Sinus

- **Almost always spontaneous (not trauma assoc.)**
- **Work-up: comprehensive eye exam, MRI, TSH**
- **Natural history**
  - rarely affect mortality rates
  - rarely bleed
  - rarely have extraocular signs and symptoms
  - often close spontaneously

Regarding Pupillary Abnormalities

- If there is: - No ptosis
  - No EOM dysfunction

  Then it's nothing "bad" and a scan is not indicated

  Consider: Adies, pharmacologic causation, or "discovered" physiologic anisocoria as probabilities

The Importance of History!

- Teenage female presented with anisocoria greater in bright light and had neuroimaging, which was negative.

Ophthalmology, Oct, 2020

Qbrexza: The Importance of History!

- The mydriasis was “eventually” attributed to Qbrexza! (Think! Take a good Hx!)
- “Inadvertent contact with the ocular structures can cause mydriasis and blurred vision. A thorough history asking specifically about cloth wipes such as Qbrexza for patients presenting with unilateral mydriasis in the absence of extraocular motor deficits may prevent unnecessary medical costs, neuroimaging, and risk, as well as avoid considerable fear and anxiety for our patients.”

Qbrexza™ (glycopyrronium tosylate)

- In a class of anticholinergics – therefore can affect accomodation
- Indication: Primary Axillary Hyperhidrosis (excessive underarm sweating)
- Approved in 2018 as a medicated towelette applied directly to skin
- Prescription drug approved down to age 9.
- Potential ocular side-effects:
  - Dilated pupils
  - Dry eyes
  - Blurred vision
  - Angle closure (in anatomically narrow angles)
- Manufacturer: Demira, Inc. Menlo Park, CA

Management of 3rd Nerve Palsy

- Pain vs no pain, pupil involvement, or not
  - Does not matter!
- All patients need emergent CTA or MRA
- Send straight to ED; not to an ophthalmologist
- However, about 95% of 3rd N. palsies are simply "microvascular," and not aneurysmal in nature

JAMA Ophthalmol 2017;135(3):203-4.

Calculating Hydroxychloroquine Dosage

- About half of patients are overdosed
- "DoseChecker" App is the most exacting way to calculate proper dosing
- Put in the patient's weight, and the proper weekly dose appears
- Proper dosing is the critical step in minimizing risk of Plaquenil maculopathy

JAMA Ophthalmology, February, 2018

Rheumatologic Dosing of HCQ

- "Slightly more than ½ of all patients currently on treatment continue to receive excess doses."
- Toxicity can be up to 20% in patients taking HCQ after 20 years.
- "Our findings are particularly concerning given that choosing a proper starting dose is the single safest, simplest, and most cost-effective measure available."
- M+T: this is why it is vitally important for optometric physicians to know the science, then gently and authoritatively communicate with rheumatologists.
- "The calculation of a safe dose should be based on lean body mass, best estimated by the lesser of actual or ideal body weight." *Braslow RA, et al. Ophthalmology 2017;124(5): 604-8.*

British Perspective on Plaquenil

- "New data using modern retinal imaging techniques identify the prevalence of hydroxychloroquine retinopathy at around 7.5% in patients taking the drug for more than 5 years, increasing to 20-50% after 20 years."
- "HCQ is a drug increasingly used in the treatment of systemic lupus erythematosus, rheumatoid arthritis, and other autoimmune disorders."
- The new recommended dosage is 5mg/Kg/day

Least Safe Weight	
(400 mg at 6.5 mg/kg =	135 pounds)
(300 mg at 5.0 mg/kg =	100 pounds)

Eye, 2018

Hydroxychloroquine (Plaquenil) Evaluation

Patient Name _____ D.O.B. _____

Referring Physician _____

Consultant Optometrist _____

Date _____/_____/_____ Number of years taking HCQ _____

Plaquenil dose _____ mg _____ Patient's Weight _____ lbs.

Acuity Right 20/_____ Left 20/_____

Fundus exam Normal _____ Other _____

_____

Macular Visual Field Testing (10-2) ☐ Normal Other _____

_____

SD-OCT ☐ Normal _____ Other _____

_____

Recheck: Annually _____ Other _____

Comments:

DoseChecker

ChatGPT

OpenEvidence

Expert Ophthalmologist Answer in Deposition

- The other one that I can recall involved a patient that presented to an ophthalmologist with an arterial occlusion and malaise and headache, and there was a missed diagnosis for _____.

Expert Ophthalmologist Answer in Deposition

- The other one that I can recall involved a patient that presented to an ophthalmologist with an arterial occlusion and malaise and headache, and there was a missed diagnosis for giant cell arteritis, which led to vision loss and ultimately his death.

Verbatim Transcript of GCA Case (2024) –Deposing a Rheumatologist

Q: “Doctor, how many times in your (40 year) career have you worked up a patient that you suspected temporal arteritis or included temporal arteritis in your differential diagnosis?”

A: “Several hundred times”

Q: “And how many times was that diagnosis actually made after you suspected?”

A: “Perhaps five to ten times.” Of which “none of them became blind.”

Anterior Ischemic Optic Neuropathy (AION)

- Sudden painless visual loss; fellow eye involved 40% of cases
- Age range: 50-70
- APD and decreased color vision
- Altitudinal VF defect (inferior loss most common)
- Swollen disc - diffuse or sectorial
- Flame hemorrhages at disc margin
- Check blood pressure
- Medical Consultation with STAT ESR, CRP, CBC

Erythrocyte Sedimentation Rate

- A non-specific measure of systemic inflammation
- Readily available, inexpensive test
- Requires venipuncture dependent blood specimen
- A foundational data piece in the work-up for giant cell arteritis
- Clinical thresholds relative to GCA

  Men: Age ÷ 2

  Women: Age +10 ÷ 2
- When Hx is compatible with GCA, do not hesitate to obtain a “Sed Rate”

C - Reactive Protein

- More sensitive indicator for Giant Cell Arteritis than ESR
- Produced by liver in response to inflammation
- This protein can be accurately quantified
- It increases rapidly during disease states
- It decreases rapidly with effective therapy
- Uses serum rather than whole blood
- Lab test is quickly performed – inexpensive
- In GCA, standard CRP is usually above 2.45

GCA: Role of ESR and CRP

- **ESR clinical thresholds relative to GCA**
  - Men: Age ÷ 2 ; Women: Age + 10 ÷ 2
- **ESR sensitivity (76-86%); CRP (97%); both (99%)**
- **When CRP is normal, but ESR is elevated, consider other disorders beyond GCA** *(Ophthalmology, October 2006)*
- **Best predictive lab studies: ESR, CRP, thrombocytosis**
  - ESR: Greater than 50-100 mm/hr (1.5 times)
  - CRP: Greater than 2.45 mg/dl (5.3 times)
  - Thrombocytosis: Greater than 400,000/uL (4.2 times)
- **With all 3 tests positive: 8 times odds of (+) TAB**

(Ophthalmology, June 2011)

OpenEvidence

What is a normal thrombocyte count?

Finished thinking

A normal platelet count is **150,000 to 400,000 (or 450,000) platelets per microliter** (150-400 or 150-450 × 10^9/L). [1] [2] [3] This range is widely used in clinical practice, though some variation exists based on the laboratory and population studied.

Temporal (Giant Cell or Cranial) Arteritis

- Epidemiology: Generally patients over age 60; fellow eye involved 75% within 2 weeks without treatment
- Hx: HA, scalp tenderness, jaw claudication, malaise
- Ocular expressions: AION, CRAO/BRAO, EOM muscle palsies resulting in diplopia
- Laboratory blood studies with STAT ESR, CRP, CBC
- If GCA is suspected (based on Hx, clinical findings, and lab studies) initiate oral prednisone (60-80 mg) until ultrasound or TAB confirmation
- Consult rheumatology for on-going medical management of GCA

2026 Update on GCA

- Peak incidence 75-79, women more afflicted
- Body Symptoms: Fever, night sweats, weight loss, HA, scalp tenderness, jaw/tongue claudication.
- “The cornerstone of GCA management is the immediate initiation of glucocorticoids.”
- Generally speaking, the initial dose is 60 mg of oral prednisone daily while concurrently ordering standard blood studies.
- Temporal artery ultrasound is quickly replacing TAB
- Roughly half of GCA patients have aortic involvement
- Tocilizumab (ACTEMRA®) along with decreasing dosage of prednisone has been increasingly helpful.
- Our Job: Make the Dx, initiate PO prednisone, and get patient to rheumatology

Survey Ophthalmol. March/April 2026

Epidemiological Perspective on GCA

- An idiopathic vasculitis of medium to large sized vessels of the head.
- Vision compromise occurs mostly from inflammatory posterior ciliary artery occlusion. CRAO is an uncommon expression.
- Average ESR was 70-80 mm/hr
- GCA results in permanent vision loss in about 10% of cases
- GCA predominately affects individuals of northern European descent.
- 20% of patients have no premonitory symptoms
- High dose steroids do little to regain lost vision, and are aimed mainly at preventing vision loss in the fellow eye

Turbert D. Ophthalmology , September, 2016

Race and Giant Cell Arteritis

- Prior studies have found GCA to be pretty much a disease of Caucasians
- A newer study has shown that patients of African descent are roughly at EQUAL risk of developing GCA!
- Therefore, “race” should no longer be a risk factor when evaluating patients with suspected GCA.
- Women are still at higher risk
- Almost all patients are aged 50 or older.

JAMA Ophthalmol, October, 2019

Finer Points Regarding GCA

- Positive TAB remains “gold standard”
- A 1cm section of the STA is ample
- TAB results still valid at 2 weeks post steroid treatment
- Both ESR and CRP are helpful in predicting a positive TAB
- Statins and NSAIDs cause ESR to be about 25% lower but CRP is unaffected by these drugs
- Significant anemia can cause a falsely high ESR

Reference: Survey of Oph. Vol 61. July-Aug 2016

Giant Cell (Temporal) Arteritis: An Overview

- "Headache of new-onset, characteristically temporal and lancinating in quality is attributed to the stimulation of sensory fibers within inflamed extracranial arteries. It is the most common symptom occurring in up to 90% of patients and tends to be located over the temporal or occipital areas."
- Melton-Thomas Commentary: Any older person complaining of transient unilateral visual loss merits three diagnostic tests: Carotid ultrasound to r/o carotid atheromatous disease, and an ESR, CRP, and CBC. These should be accomplished within hours.

(Survey of Ophthalmology, Sept-Oct 2005)

R/O Giant Cell Arteritis

- 78 yobf referred by ENT colleagues for "possible bad infection to OD after TA biopsy 1 week ago; hx of HA and right eye pain and photophobia for last month; PCP referred to ENT for TA biopsy 1 month ago even though ESR was negative
- Meds: see chart. Allergies: Ibuprofen
- Med Hx: Diabetes since 2007, TIA 2000, hypertension, anxiety, acid reflux, cataract surgery 2013
- BVA: 20/25 OU
- Pupils: normal, neg for APD
- IOP: 9, 9 ICARE 3:10 pm
- A/S Exam:
  Conj: 3+ subconj heme OD, 1+ subconj heme OS
  Cornea: Clear OD; Clear OS
  A/C: 3+ -4 C/F; mild fibrin OD, clear OS
  Lens: PC IOL OU clear
  DFE: .3 OU, normal
- P:

What is Polymyalgia Rheumatica?

- Muscle pain and stiffness of the neck, shoulders and pelvic girdles in people over age 50
- Usually occurs in the morning and lasts 30-60 minutes
- GCA & PMR: commonly occur together and may represent a spectrum of the same pathophysiology
- Both can be accompanied by fever, malaise, arthralgias, myalgias, weight loss and anemia
- Both conditions remain idiopathic

Reference: Survey of Oph. Vol 61. July-Aug 2016

Ocular Surface Squamous Neoplasia (OSSN)

- Standard work-up: External photographs and anterior segment OCT through the lesion
- Current treatment: Topical 5-FU, one drop QID for one week, then off for 3 weeks, and repeat until there is resolution of the lesion.
- Follow-up every 2 months until complete resolution

Ocular Surface Squamous Neoplasia (OSSN)

- Highest incidence: older, white, males
- Commonly seen intrapalpebral bulbar paralimbal conjunctiva
- Predisposing factors: UV-B exposure, light skin and iris color
- Interferon most commonly used – either primarily, or adjunctively with excision,

  Also used: $_{5}$-FU and MMC
- 80% success rate as primary therapy, with only a 3% recurrence rate by 5 years

Ophthalmology, September 2025

Missed Glaucoma

- 63 yowf with floaters OD that started this am; sees a big "smoke ring" moving in front of vision; no flashes; LEE 6 months ago with new glasses; takes Patanol for itchy eyes
- Mother sees glaucoma specialist for advanced glaucoma
- Med: Fosamax, Patanol
- BVA: OD 20/30, OS 20/30
- IOP: 18, 17 @ 10:00
- Vitreous: PVD OD, negative for Shaffer's sign
- C/D ratio: OD .75 cupped infer, flame heme superior; OS .7 notched infer
- DFE: peripheral retina no tears; cobblestone deg nasally OU
- Plan: S/S of retinal abnormalities f/u immediately; RTC 1 month for f/u of PVD OD and glaucoma work-up to include VF, NFL, gonioscopy, CCT, and IOP

Missed Glaucoma

- F/U 1 month to check PVD OD and glaucoma work-up
- IOP: 16, 17 @ 935 an
- CCT: OD 588; OS 582
- Gonioscopy: OU Gr 3 angle with ciliary body visible, 1-2+ pigment, neg NVI, neg PAS
- SLE: lens 2 NS, neg PXE OU
- C/D ratio: OD .75 cupped infer, flame heme superior has resolved; OS .6 notched infer
- NFL: Thinning infer OD>OS
- VF: OD extensive sup defect; OS mild sup defect
- Plan: prostaglandin OD and IOP recheck 3 wks

Missed Glaucoma

- F/U 3 wks compliant with prostaglandin OD
- IOP: 11, 18 @ 935 am
- Plan: Continue with prostaglandin OU and careful f/u with monitoring of IOP's, ONH's, VF's, and NFL

Glaucoma and Medical Malpractice

- "Overall the rate of plaintiff verdicts was similar in glaucoma and in ophthalmology as a whole; However, the magnitude of plaintiff awards was higher in glaucoma than in ophthalmology overall." "Common scenarios leading to litigation included failure to diagnose or mismanagement of glaucomatous disease, as well as adverse drug effects, and surgical complications. Many cases could have been avoided with careful examinations, through documentation in the patients' chart, and detailed conversations with patients."

Ophthalmology Glaucoma, October 2020

Perspective on Posterior Vitreous Detachment

- Occurs mostly between ages 50 and 70 (peak incidence 62)
- No association with refractive error, except patients with -3.00D or more go to P.V.D. 5-10 years earlier
- 80-90% of breaks associated with P.V.D. are in the superior quadrants

Ophthalmology, January 2018

Acute PVD and Retinal Tears

- **The rate of an acute retinal tear associated with an acute symptomatic PVD is about 8% at the initial visit, and 1.5% of eyes without a tear on the initial visit are found to have a tear on follow-up examination.**

Ophthalmology, January 2018

AAO-PPP on PVD Patient Care

"Patients presenting with an acute PVD and no retinal breaks have a small chance (~2%) of developing retinal breaks in the weeks that follow. Selected patients, particularly those with any degree of vitreous pigment, vitreous or retinal hemorrhage, or visible vitreoretinal traction, should be asked to return for a second examination promptly if they have new symptoms or within 6 weeks following the onset of PVD symptoms."

Preferred Practice Guidelines, AAO, Oct, 2019

What About Scleral Depression

- "An examination using a 28 diopter lens with scleral depression did not provide any additional benefit to an examination without depression during indirect ophthalmoscopy."
- "In many areas around the world ophthalmologists have progressively shifted from indirect ophthalmoscopy with 28 diopter-type lenses to new fundus lenses at the slit lamp to improve the comfort of the patient without scleral depression."

Am J Ophthalmol. November 2018

PVD -Glaucoma Suspect

- 40 yowf with hx of 2 wks ago seeing floaters OD; checked by her optician at mall and given glasses Rx; still seeing floaters OD and wanted second opinion; no flashes; -7.00 D myope OU; family hx mother glaucoma
- VA: OD 20/30, OS 20/30
- Pupils: normal OU; CVF: full OU
- IOP 19, 19 @ 7:24 am; CCT: 504, 508
- SLE: normal, no Shafer's sign OD
- DFE: -OD .7H x .75V no notching, no hem; OS .7H x .75V, tilted disc;

  -Partial PVD without signs of tear or RD; macula normal; periphery normal OU;
- Plan: -Patient education of PVD; if experiences curtain over vision, flashes, or significant increase in floaters call immediately;

  -OCT RNFL and macula today; F/U 1 month for DFE OD with IOP, VF 24-2 SF, gonio, CCT, and DFE of OD for f/u of PVD OD;

PVD -RD 1 week later

- CC: 2 days ago started seeing film in bottom of vision OD; no flashes of light with floaters less than before
- VA: OD 20/30, OS 20/30
- Pupils: normal; CVF: OD infer ?
- IOP: 21, 20 @ 2:40pm
- SLE: Positive Shafer's Sign OD
- DFE: Superior Retinal Detachment with large horseshoe tear
- Plan: Consult with retinal specialist for surgical intervention; f/u after released for further investigation as glaucoma suspect;

Follow-up After Initial PVD Event

- About 2% of patients with normal findings will develop a subsequent retinal tear.
- In this study, 45% of these retinal breaks "were found more than 6 weeks after presentation."
- At the Wills Eye Hospital Retina Service; "60% of patients in our study had at least a 4-6 week follow-up. Most physicians in our practice do not routinely follow up patients beyond this timeframe."
- Only about half of these subsequent events were symptomatic, therefore there may be a need to re-evaluate acute PVD patients more frequently than is currently common practice.

Ophthalmology, April 2020

Vitreolysis for Symptomatic Floaters

- Two options: YAG laser or vitrectomy
- Newer "Reflex Technology" enhances YAG success
- Floater material is both fractionated and vaporized
- Multiple sessions may be required
- Weiss ring easier to treat than amorphous clouds
- About half of patients obtain symptomatic relief
- Complications are few, but can be serious

Survey Ophthalmol, March 2020

Timing and RD Repair: Is there a hurry?

- Preoperative VA is the strongest predictor of postoperative VA
- When central vision is affected, about 30% of patients ultimately achieve 20/40 or better
- "There is no difference in VA outcomes among patients who underwent repair within the first week of onset."
- VA can improve for months to years after surgical repair
- There was no association between duration of macular detachment and postoperative VA
- "Clinical evidence suggests that the duration of macular detachment has a minor, if any, effect on visual outcome when repair is performed within about one week. Similarly, many fovea-sparing RD's can likely be deferred for a short period without affecting visual outcomes."

JAMA Oph. November 2013

Visual Recovery After Retinal Detachment with Macula-Off

- After 10 days, no rush for up to 30 days
- Enhanced result if surgery is done witin the first 3 days

BJO, 2016; 100 (11)

Risk of Progression in Macula-On Retinal Detachment

- A “bullous configuration” of a macula-on rhegmatogenous RD portends a higher risk of macular detachment. This study suggests “prompt surgery in patients diagnosed with bullous macula-on rhegmatogenous RD.”

Clinical and Experimental Ophthalmology, August, 2017

Limitations of Ultra-Widefield Fundus Photography

- These devices can capture more than 80% and up to 200^{o} of the retinal surface area.
- However, “visualization of the inferior and superior sectors is often limited.”
- In fact: Nearly half of horseshoe tears were missed by UWF imaging; the majority in the superior quadrant.
- “UWF imaging should not be relied upon as a substitute for funduscopic examination in the evaluation of PVD or symptoms indicative of a retinal tear. This cautionary note is essential, as a negative UWF image can provide false reassurance, potentially leading to delayed diagnosis and management of a critical retinal condition.

Am J Ophthalmol. Nov, 2023

Malpractice Risks Regarding Retinal Detachments

- **Uptick in legal claims for diagnostic errors**
  - Especially retinal detachments
- **"And by far the most frequently missed diagnosis in our entire study was RD– nothing else came close."**
- **85% or these missed RD's presented with risk factors specific to RD**
- **"The primary pathogenic mechanism– and the biggest risk factor– for RD is PVD."**
- **Comprehensive ophthalmologists (and optometrists) should have a low threshold for referral to a retinal subspecialist."**

Reference: EyeNet, April, 2018

The “Good” of Ultra-Wide Field Photography

- “Severity of DR is most rigorously defined using retinal photography.”
- Initial Early Treatment Diabetic Retinopathy Study (ETDRS) only captured 7 field images of the central 30 degrees.
- Several studies show “equivalent or more” data with ultra-wide photography
- UWF imaging covers much more retinal tissues and “allows for the identification of additional pathology and a more robust ability to predict retinopathy progression.”

JAMA Ophthalmol. September 2024

Horner's Syndrome

- 37 WF HA-like-sinus infection for 2 weeks
- 1 week ago left eye started to swell and hurt
- Temple area numbness for a week, also pain in left eye and jaw
- Noticed pupil smaller on left side
- HA episodes awake her from sleep over past 2 weeks
- Treated with bacitracin, amoxicillin, Clarinex-D, and propoxyphene-acetaminophen
- Patient asked PCP to refer her for 2nd opinion
- VA 20/20 20/20, 5mm pupil O.D., 3mm pupil O.S.
  - With 2-3mm ptosis O.S.
- A: Painful Horner's Syndrome
- P: Stat MRI/MRA to R/O internal carotid artery dissection

Preretinal Membrane Formations

- **Disruption in ILM**
- **Etiology:**
  - Idiopathic
  - post-traumatic
  - post-vascular occlusion
  - post-inflammatory
- **Most unilateral; predominately over age 50**
- **May create metamorphopsia and decreased VA (20/25 to 20/50)**
- **Early - glinting light reflex; later - folds, traction lines**
- **Tx: Usually none; vitrectomy at 20/70-20/80**