Grand Rounds

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No Financial Disclosures

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Patient 1

72 year old African American male

Blur OD x 3 months

Last eye exam 10 years ago

Ocular History

Mixed Mechanism Glaucoma

S/P LPI OU

Was on Xalatan qhs OU – no longer taking

Blunt trauma OD

Medical History

HTN

Anemia

CVA x 2

Hyperlipidemia

Kidney Disease

Medications

Amlodipine

Atenolol

HCTZ

Simvastatin

ASA

Exam

BCVA OD: 20/320, OS: 20/25

+APD OD

Anterior Segment Normal

Except Mild NS OU

Exam

Gonio: Narrow with old PAS

S/P LPI OU

IOP 14/14

Posterior Segment

Optic Nerve

0.75 OD - Pallor

0.90 OS

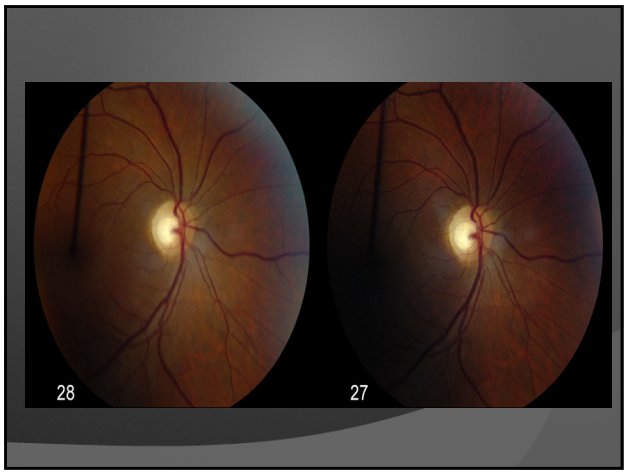
No maculopathy

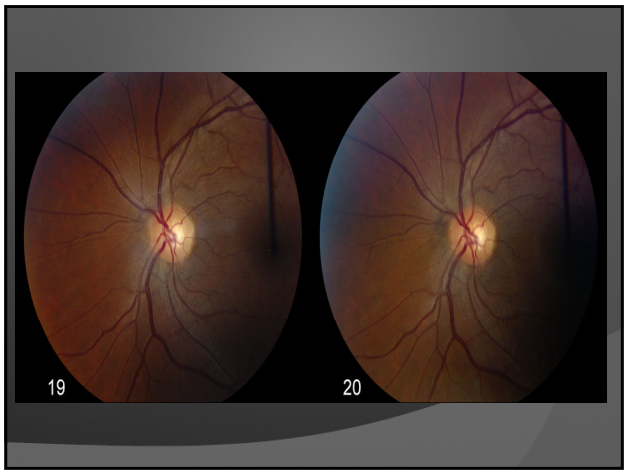
No vasculopathy

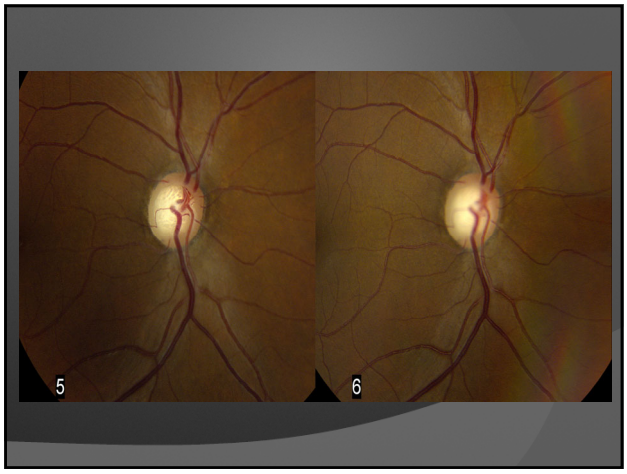
Peripheral retina normal

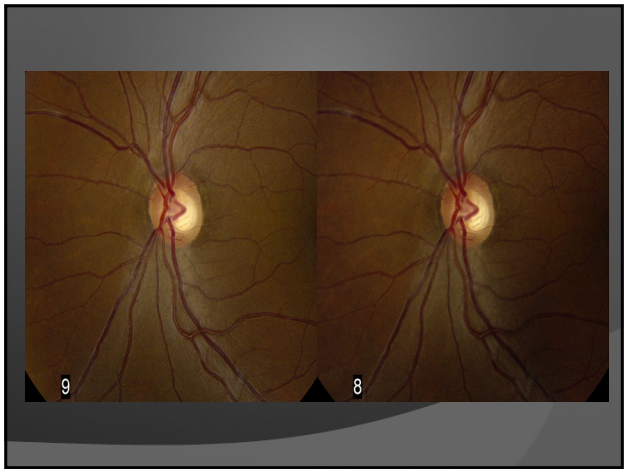
Pallor Vs. Excavation

Pallor Vs. Excavation









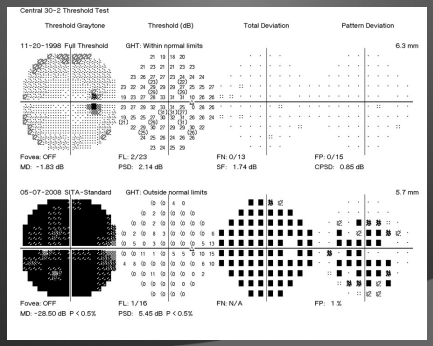
Differential

- Glaucoma
- Other Optic Atrophy
  - Traumatic
  - Compressive
  - Inflammatory

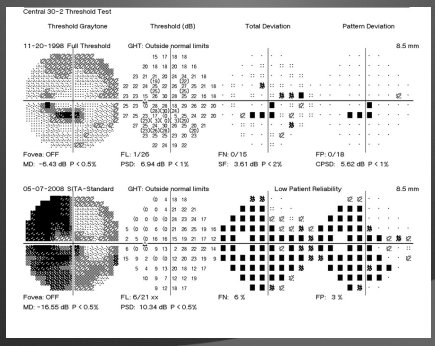
What Tests?

- VF?
- OCT?
- Imaging?

VF - OD



VF - OS



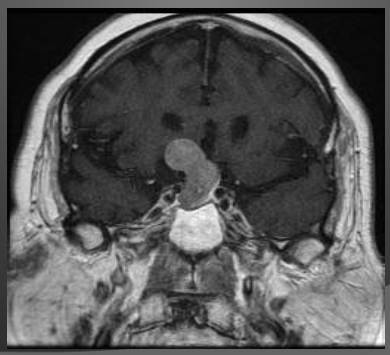
New Differential

Glaucoma

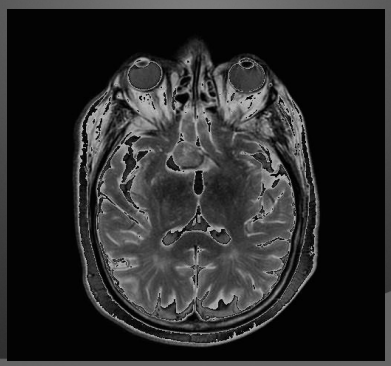
Compressive Lesion

CVA

MRI



MRI



Diagnosis

Pituitary Adenoma – 2.5 x 1.6 cm

Treatment

Monitor only

Due to other health factors

Patient reports vision is fine

Pituitary Tumors

Hormone-Producing

- Prolactinoma
- Growth Hormone Secreting
- ACTH Secreting (Cushing's)

Hormone Inactive

Size

Treatment

Goals

- Normalize hormone levels
- Pituitary gland function
- Reduce signs/symptoms of tumor

Treatment

Medication (Micro)

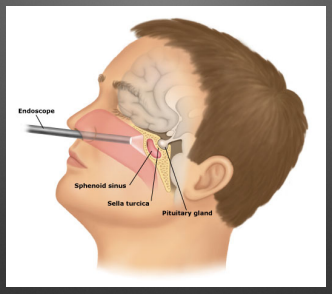
- Bromocriptine – Dopamine agonist
- Hormone stabilization

Treatment

Surgery (Macro)

- Transsphenoidal
- Transcranial

Treatment



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Take Home

Check both eyes

Pituitary vs. Glaucoma

Pallor vs. Excavation

Patient 2

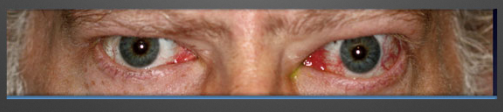
- 60 year old white male
- Worsening double vision
- Pain on eye movements

History

- Strabismus Surgery in 2010
- Hypertension

Exam Findings

- Cover Test- variable esotropia with right hyperphoria
  - Mild restriction on EOM, pain on EOMs
- Normal Acuities, no APD



Exam Findings

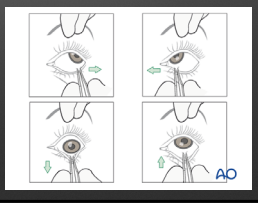
- Anterior segment
  - Injection of conjunctiva
  - Inflammation of caruncle
- Posterior segment unremarkable
  - Healthy ONH

Differential Diagnoses

- Myasthenia Gravis
- Cranial Nerve Palsy
- Optic Neuritis
- Cavernous Fistula
- Thyroid Eye Disease

In Office Testing

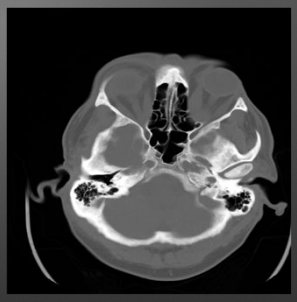
- Hertel
- Cover Test
- Forced Duction



Additional Testing

- Imaging
- Blood Work
  - (More than just TSH, T3 and T4)
    - TSI
    - TRAb
    - Anti-TPO

MRI

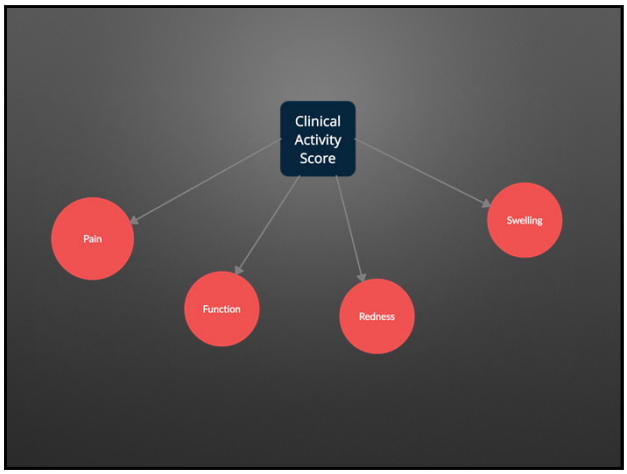


Diagnosis

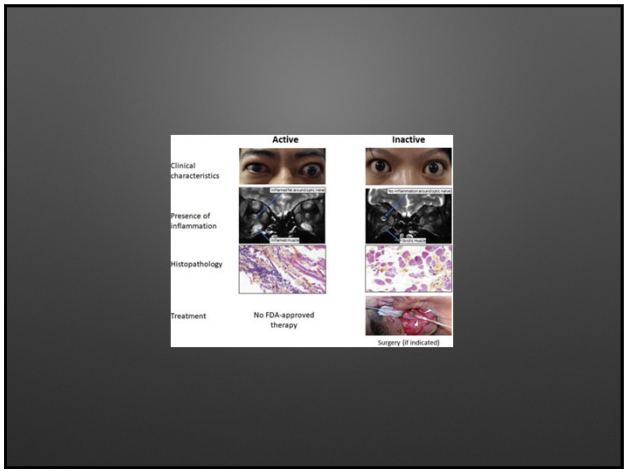
- Many Names of TED
  - Thyroid Eye Disease
  - Graves' orbitopathy
  - Graves' eye disease
  - Thyroid-associated ophthalmopathy

Diagnosis

- Active vs. Inactive TED
- Clinical Activity Score

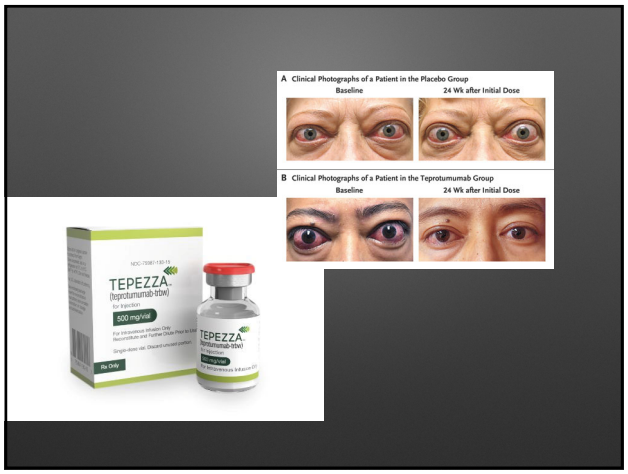

Clinical Activity Score
Pain
Function
Redness
Swelling


Clinical Activity Score
Pain
- Globe
- EOM
Function
• Decreased VA
• EOM restriction
Redness
• Eyelids
• Conj
Swelling
• Caruncle
• Chemosis
• Eyelids
• Proptosis


Active
Inactive
Clinical characteristics
Presence of inflammation
Histopathology
Treatment
No FDA-approved therapy
Surgery (if indicated)


A Thing of the Past..
Active
Inactive
Clinical characteristics
Presence of inflammation
Histopathology
Treatment
Surgery (if indicated)
TEPEZZA


TEPEZZA
(teprotumumab-trbw)
500 mg/vial
Rx Only


A Clinical Photographs of a Patient in the Placebo Group
Baseline
24 Wk after Initial Dose
B Clinical Photographs of a Patient in the Teprotumumab Group
Baseline
24 Wk after Initial Dose
TEPEZZA
(teprotumumab-trbw)
500 mg/vial
Rx Only

Treatment & Management

Active
- Tepezza
- Supportive

- Inactive
  - Supportive
  - Decompression
  - Strabismus Surgery

Our Role

- Assisting in active vs inactive phase
- Appropriate Referral

Patient 3

59 Y/O White Male

Medical HX

HTN, COPD, Arthritis, ***Kidney Failure***

Peripheral Vascular Disease, Anemia

Carotid Artery Stenosis, Hyperlipidemia

Amputee – Bilateral

Medications:

HCTZ

Norvasc

Metoprolol

Lisinopril

Simvastatin

Warfarin

Examination

Blur for 1 month

BCVA: 20/40 OD, 20/100 OS

+ APD OS

IOP 6/10

Anterior Segment:

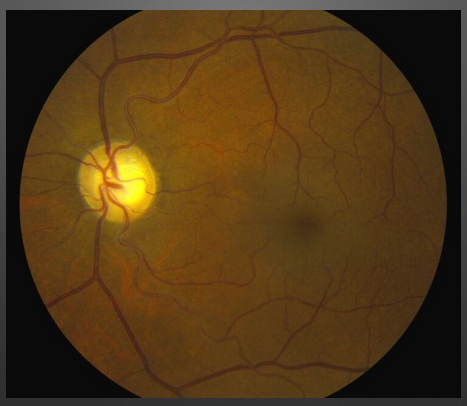
Mild Cataract OS>OD

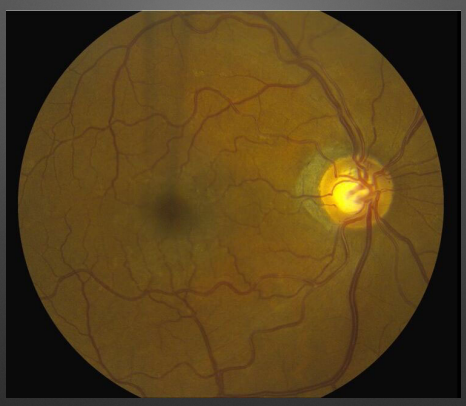
Posterior Segment

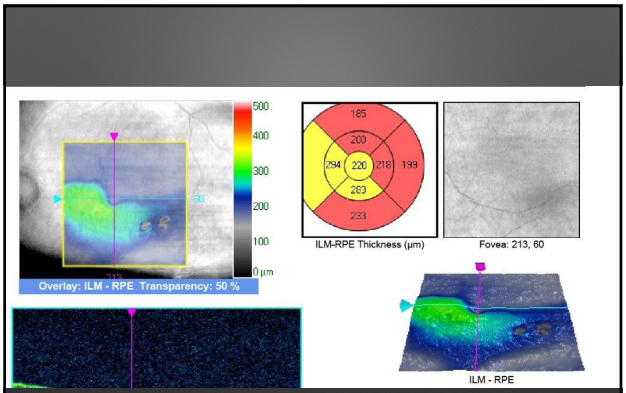
Mild artery attenuation

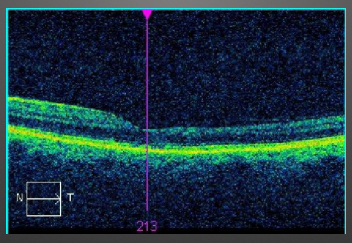
Mild ONH nerve pallor

Retina appears perfused









Lessons Learned

"Classic" Presentation of CRAO

Giant Cell Arteritis

Consider Ophthalmic Artery

Neovascularization

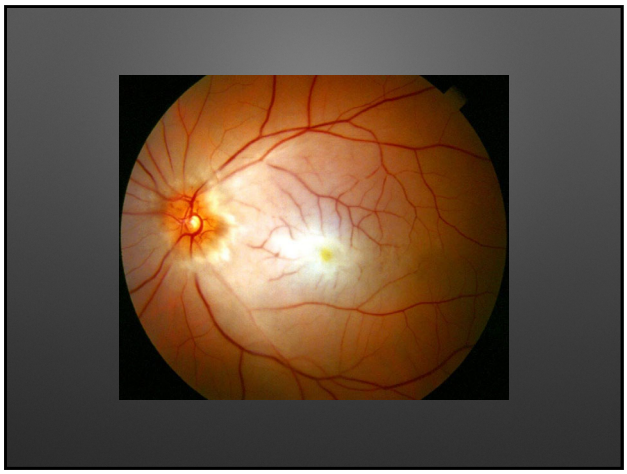
Risk to Brain and Heart

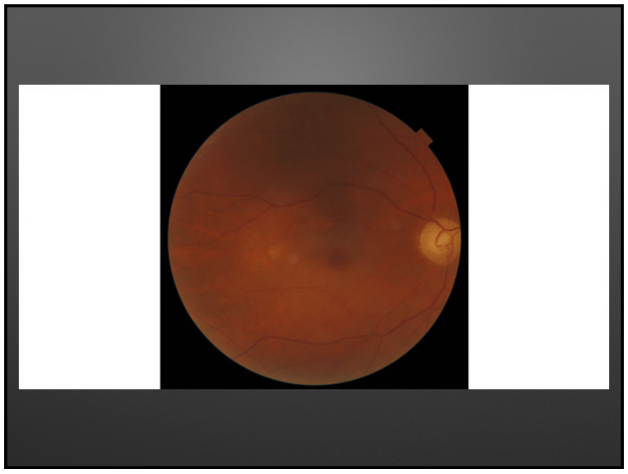
Have a Heart

Lesson #1

"Classic" Presentation of CRAO

Presentation of CRAO after reperfusion





Differential Diagnosis

Central Retinal Artery Occlusion

Ophthalmic Artery Occlusion

Ocular Ischemic Syndrome

Giant Cell Arteritis

Lesson #2

5-15% of CRAOs are from Temporal Arteritis

Additional Tests

ESR = 31 (slightly elevated)**

CRP = 0.5 (normal)

CBC = Abnormal RBC, HCT, HGB (Anemic)**

Carotid Doppler

Carotid Angiography

Carotid Doppler Results

Stent in the right distal common carotid artery

Interval occlusion of the common carotid artery

Degree of stenosis in the right internal carotid artery cannot be measured

Low flow to internal carotid

Follow – Up

1 month later (2 months after start of blur)

Very sluggish pupil and VA Hand Motion

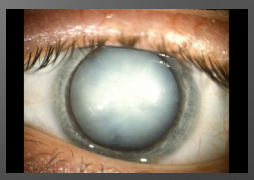
Follow – Up

5 month follow-up:

Dense, hypermature cataract

Neovascularization of the Iris

Neovascularization of the Angle 360 degrees



Lesson #3

Consider an Ophthalmic Artery Occlusion/OIS

Lesson #4

CRAO can develop anterior segment NV

Treatment

Avastin for Neovascularization

- Didn't help regress NV

Otherwise, monitor only

- Goal of this eye is no pain

Still weighing Risk/Benefit of Cataract Extraction

Lesson #5

Increased risk for CVA/MI

Risk for Heart Attack is greater

Lesson #5

AHA and ASA recommend urgent referral

CRAO/BRAO requires ER visit

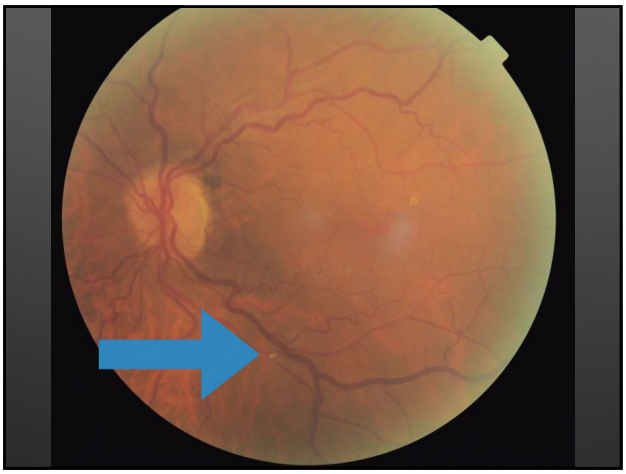
Lesson #5

79% OF CRAO HAD ACUTE SYSTEMIC CHANGE	
MEDICATION CHANGE	92%
CAROTID DISEASE	37%
CVA	37%
ECHOCARDIO	20%

Am J Ophthalmol 2018;196:96-100

Lesson #5

Amaurosis Fugax requires ER visit



Lesson #5

Asymptomatic retinal emboli??

Lesson #5

TIA used to mean timing

TIA now means location

Eye is part of the Central Nervous System

Lesson #6

Compassion

Patient 4

- 74 year old white male

Ocular History

- Superior HRVO x 2015
  - H/O Anti-VEGF and Steroid TX
- Glaucoma suspect
- Pseudophakic OD, Phakic OS

Medical History

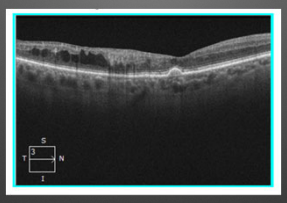
- HTN
- COPD

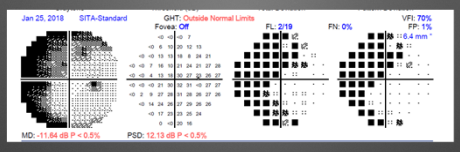
Exam

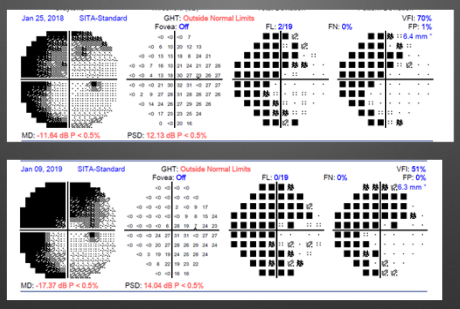
- Acuities 20/100 OD, 20/20 OS
- Mild APD OD
- IOP 20/20

Exam Findings

- ONH Suggestive of glaucoma OD>OS
  - Inferior rim was thinner and more suggestive
- OD- Persistent hemes superiorly involving macula with edema







Differentials

- Glaucoma
- Worsening HRVO?
- Other Optic Neuropathy

Treatment

Topical Ocular hypotensives

Surgical options

Take Home

- HVF loss should correlate to ONH
- Keeping track of referred patients

Patient 5

30 year old white female

CC: Headache and vision loss

H/O vision loss OD, diplopia

Improved now

Currently on

Diamox

Butalbital

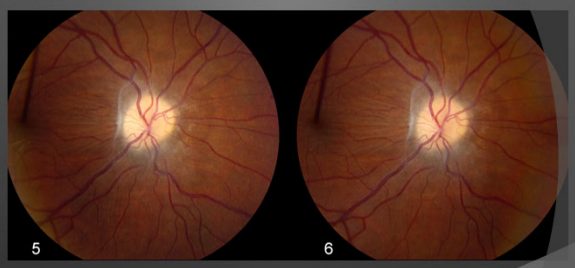
BCVA 20/40 OD, CF OS

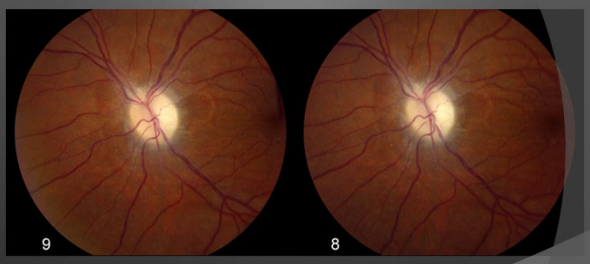
APD OS

Confrontation VF Full OD, Limited OS

Color Vision: 10/10 OD, 1/10 OS

Anterior Segment Unremarkable





Differential

Papilledema

Intracranial Hypertension

Malignant Hypertension

Space Occupying Lesion

Cerebral Venous Thrombosis

Inflammatory

Infectious vs Non-infectious

ONH Drusen

Uveitis

Optic Neuritis??

62 inches (157 cm)

462 lbs (210 kg)

BMI 85

BP: 110/80

MRI Normal

LP – 490 then 310

Normal opening pressure up to 250 mm H_2O

in obese patients

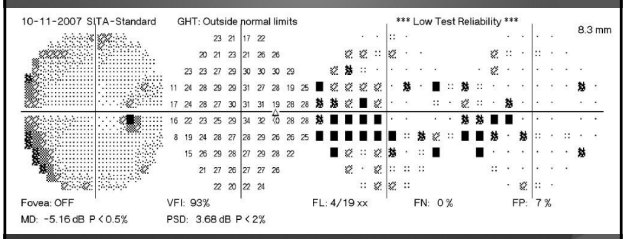
1 Month Later…

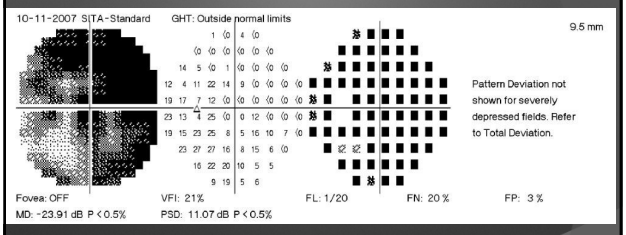
BCVA 20/20 OD, 20/200 OS

S/P VP shunt x 1 month

On Diamox still

OD swollen, OS swollen and atrophic



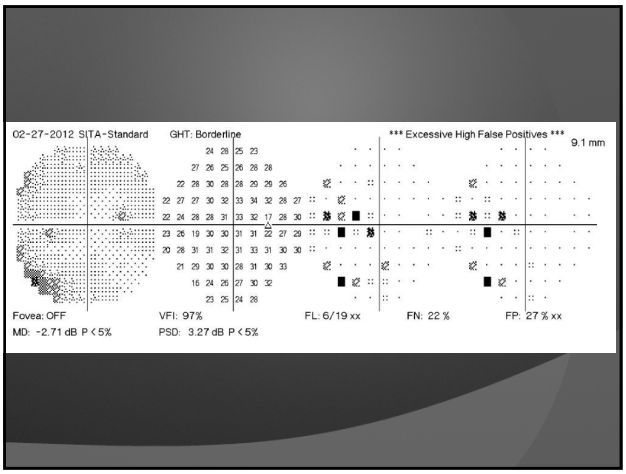


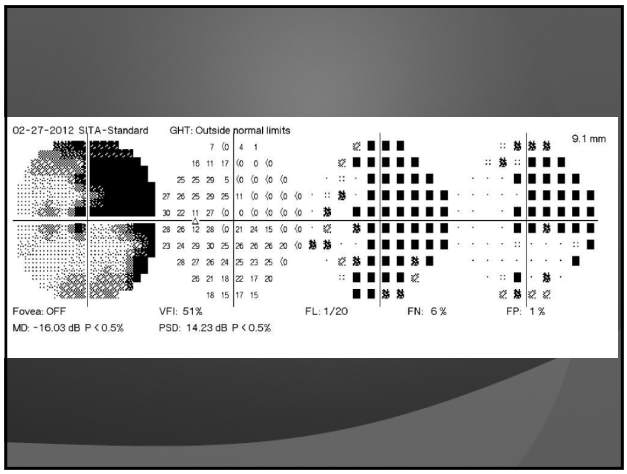
8 years later…

no Diamox

20/20 OD - minimal VF loss

20/200 OS - stable VF loss





Why is one eye 20/20 and the other 20/200?

Idiopathic Intracranial Hypertension

Old names:

'Benign' Intracranial Hypertension

Pseudotumor Cerebri

Idiopathic Intracranial Hypertension

1 in 100,000 people

Young women

10% overweight = 13x more likely

Idiopathic Intracranial Hypertension

Causes are unknown

Idiopathic Intracranial Hypertension

Symptoms are varied

Asymptomatic

Headache

Blurred vision

Diplopia

Nausea

Idiopathic Intracranial Hypertension

Diagnosis of exclusion

MRI/MRA/MRV

Lumbar Puncture

Blood Pressure

Idiopathic Intracranial Hypertension

Treatment

Weight loss

Diamox

VP shunt

Patient 6

- 52 year old hispanic man
- Reports Distorted vision OD for 3 weeks
- A superior nasal shadow OS for 3 weeks

Medical & Ocular History

- ”Autoimmune deficiency of lungs”
- Hypertension
- OD following about “concern over veins in left eye”

Medications

Alprazolam 0.25 mg

Hydroxychloroquine 200 mg bid

Oral Prednisone- 10 mg qday

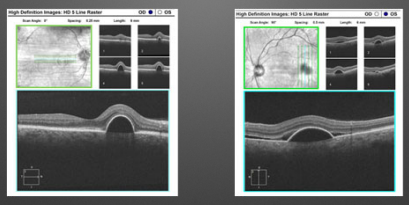
Mycophenolate Mofetil 500 mg

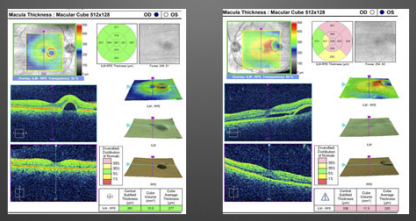
Exam Findings

- Acuities
  - OD 20/20 OS 20/20-2
- Anterior segment unremarkable
- Normal APD
- Full confrontations

Posterior Segment

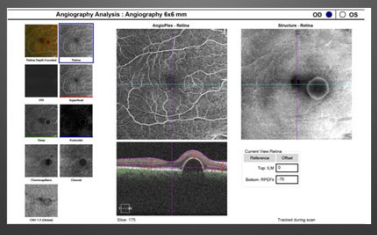
- Healthy ONH
- Normal Retinal Blood Vessels

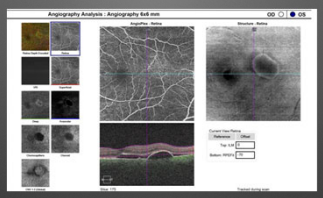




Differential Diagnosis

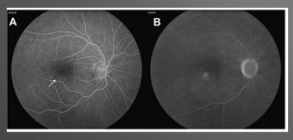
- Age Related Macular Degeneration
- Macular Dystrophy
- Central Serous Chorioretinopathy



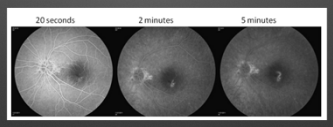


Diagnosis

- Central Serous Chorioretinopathy

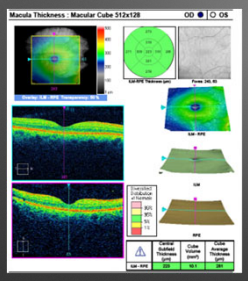


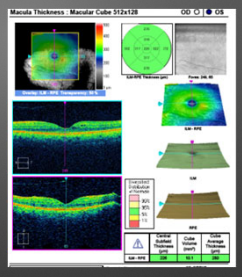
OCT
FA
FAF



Treatment Options

- Observation





Treatment & Modifying Risk Factors

- Steroid Usage
- Stress?
- Type A Personality?

Treatment Plan

- Options if no resolution
  - Laser Photocoagulation
  - Photodynamic Therapy

Our Role

- When to send for treatment, when to observe
- Risk Factors Discussion

Patient 7

58 year old Black Male

Consult for Transient Vision Loss

Pain behind eyes

Photophobia

Currently inpatient

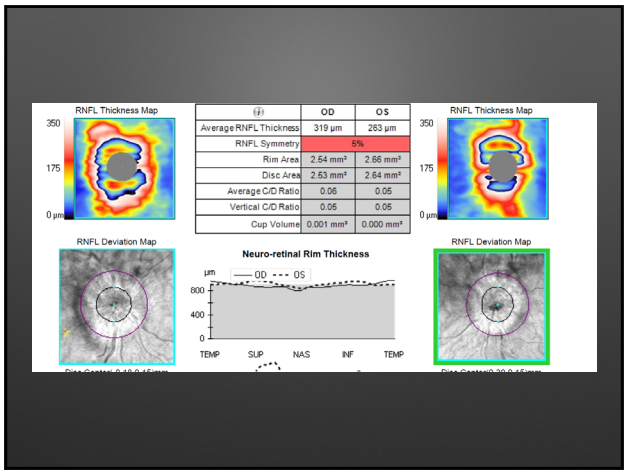
+DM

+HTN

+Kidney Disease

VAcc 20/20 OD/OS

Anterior Segment healthy



Differential

Idiopathic Intracranial Hypertension

Malignant Hypertension

Space Occupying Lesion

Blood Pressure

210/120!!

Malignant Hypertension

Malignant HTN

BP > 180/120

Kidney Disease

Adrenal Tumor

Illicit drug use (i.e. cocaine)

Collagen Vascular Disease

Malignant HTN

Headache

Blurred Vision

Shortness of Breath

Malignant HTN

This is a medical emergency

Patient 8

- 52 year old white male
- Reporting blurred Vision OD

History

- HTN
- Type 2 Diabetes
- Hyperlipidemia

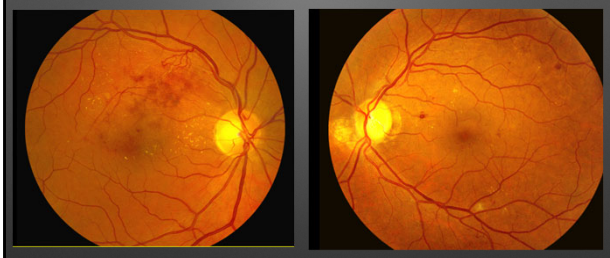
Medications

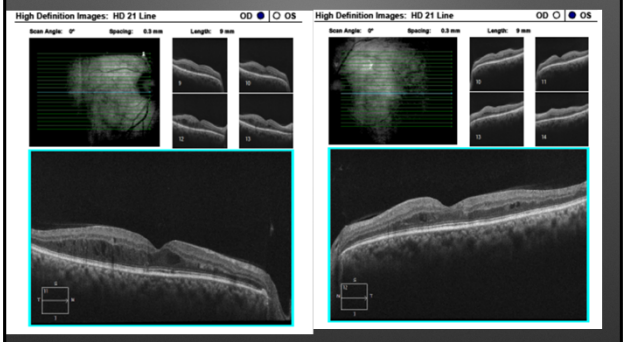
- Metformin
- Lisinopril
- Simvastatin

Exam Findings

- VA 20/40 OD, 20/25 OS
- Anterior Segment- Unremarkable
- No APD

Posterior Segment





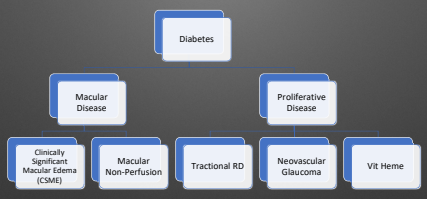
Differential Diagnoses

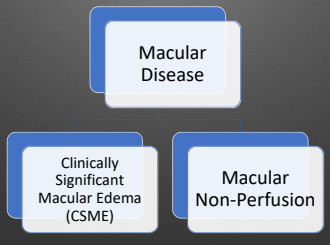
- Juxtafoveal Telangiectasia
- Retinal Vein Occlusion
- Cystoid Macular Edema
- Diabetic Macular Edema

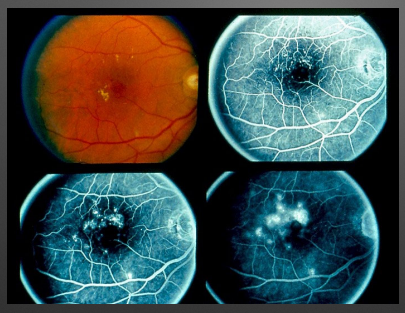
Tests to Help us So Far

- Dilated Eye Exam
- OCT

Threats To Vision







CSME

Diabetic Non-Perfusion

Treatment Options

- Anti-VEGF or Laser for CSME
- Observation for Non-perfusion
- Low Vision Referral

What happened to my patient?

- OD- CSME and Anti-VEGF Inj given
- OS- Retinal Thickening sec to Non-perfusion
  - Observation only

Does it matter?

- Differentiating CSME from Non-perfusion

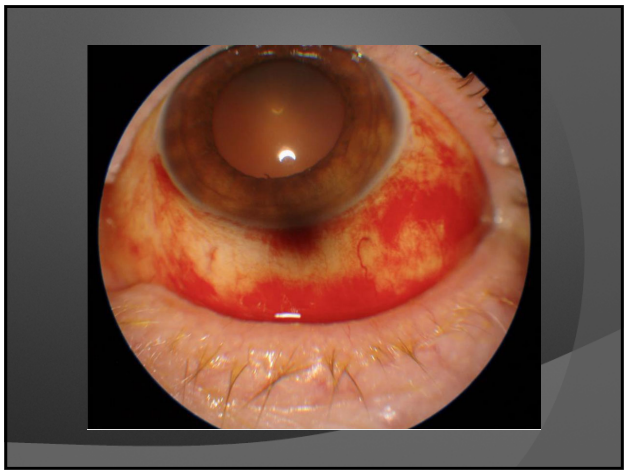
Lessons

- Not all retinal thickening needs treatment
- Low Vision Referral

Patient 9

72 year old male

C/O Red Eye x 1 day

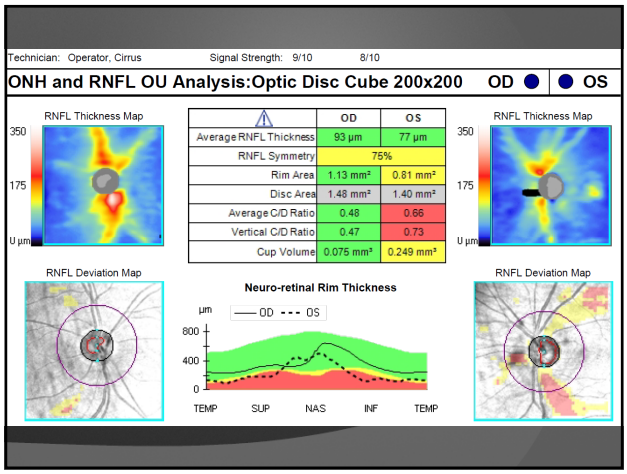


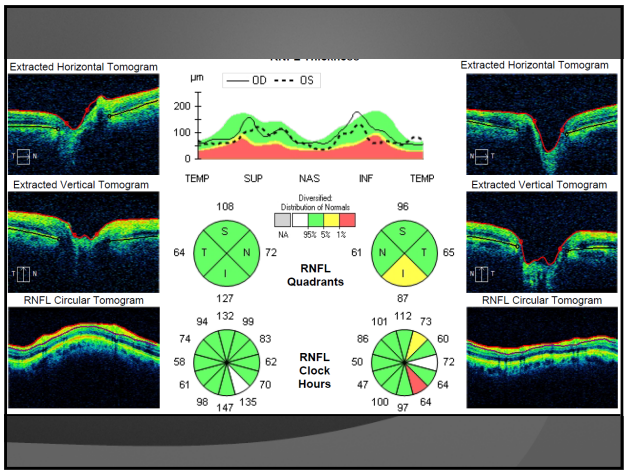
VAsc 20/20

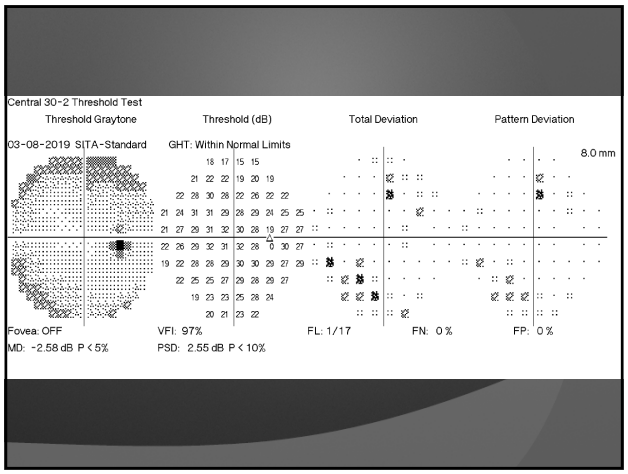
SLEX Normal - except conjunctiva OS

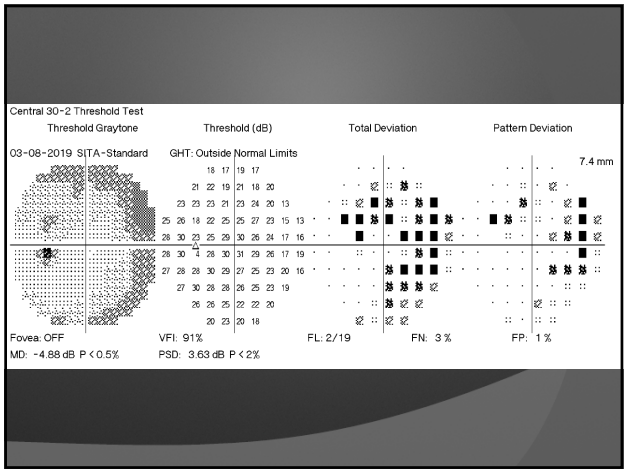
IOP 32/32

Gonio Narrow - no PAS









Glaucoma is usually ASYMPTOMATIC

Don't brush off sub-conjunctival heme

Patient 10

58 year old African American Male

C/O blur at near

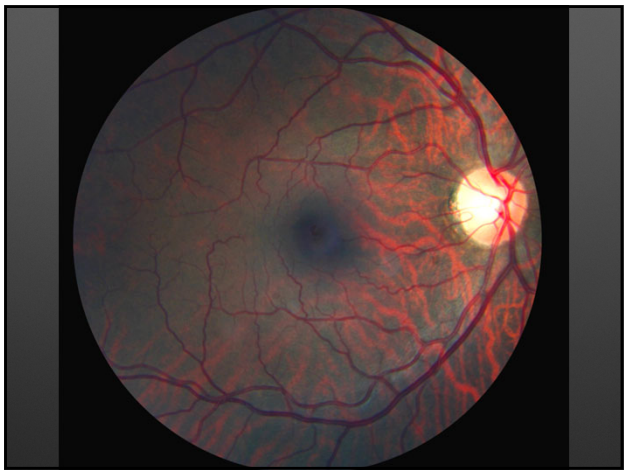
Myopic

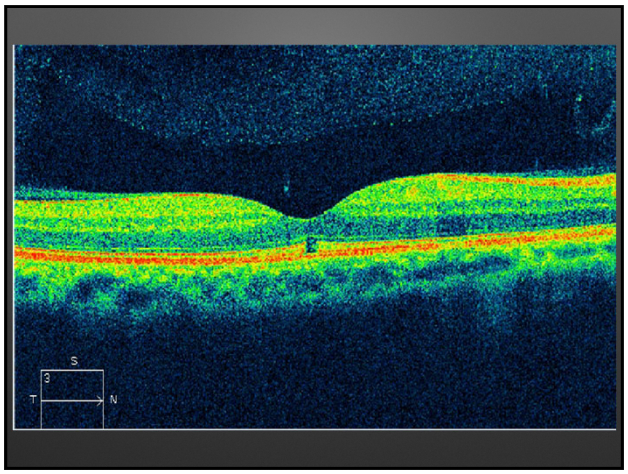
20/20 OD, 20/25 OS

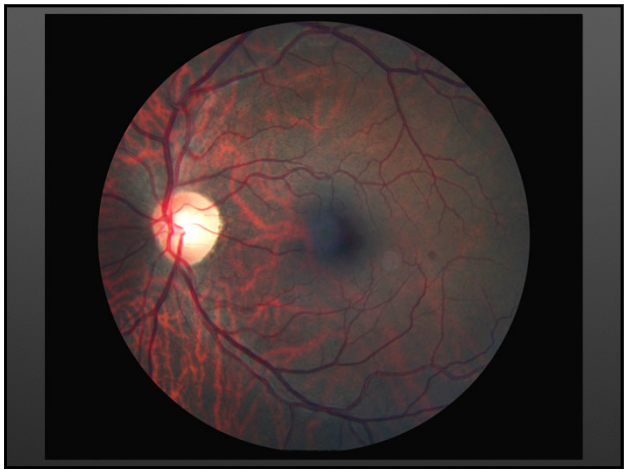
Anterior Segment Unremarkable

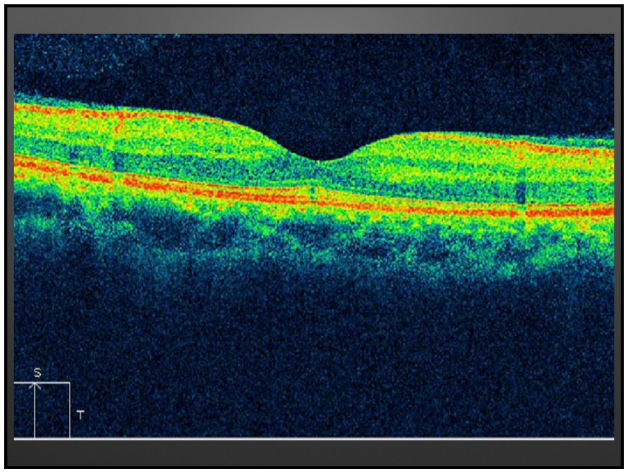
No APD

IOP 17/17









Diagnosis?

Solar Maculopathy

Solar Maculopathy

Thermal Burn

Pscyh Diagnosis

Eclipse

Drugs

Solar Maculopathy

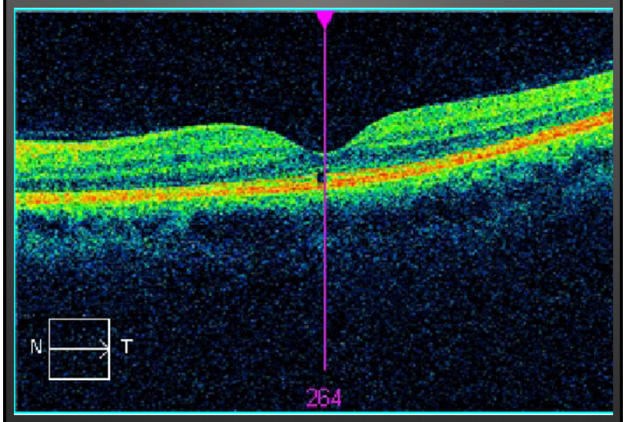
Adjustment Disorder

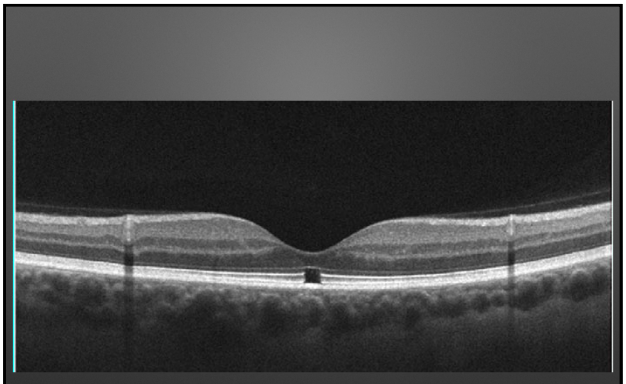
Alcohol Abuse

Inadequate Housing

Depressive Disorder

Tobacco Dependence





Solar Maculopathy

No ocular treatment - non progressive

Mental health referral?

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