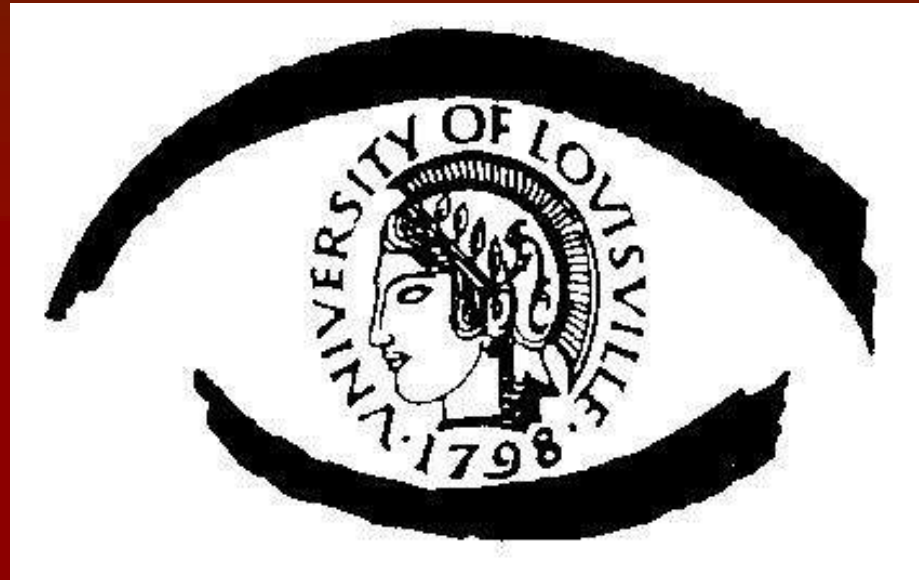


Clinical Rounds



Lana Rifkin, M.D.

University of Louisville School of Medicine

Department of Ophthalmology and Visual Sciences

Friday, November 12th, 2010

Patient Presentation

CC: “Really blurry” OD x 3 days

HPI: 60yo WM c/o decreased VA OD, “especially the bottom part.” Associated with HA. Denies pain/nausea/vomiting/jaw claudication.

POH: Mild cataracts

Ocular Meds: None

PMH: HTN, s/p pacemaker, migraines

Systemic Meds: “BP med and heart med”

ROS: (-)

Initial Exam

BCVA_{cc} $\left\{ \begin{array}{l} 20/20 \\ 20/20 \end{array} \right.$

MR_x +1.75 sph
+2.00 sph

P $\left\{ \begin{array}{l} 4 \rightarrow 2 \\ 4 \rightarrow 2 \end{array} \right.$

(-) RAPD

T_A $\left\{ \begin{array}{l} 13 \\ 19 \end{array} \right.$

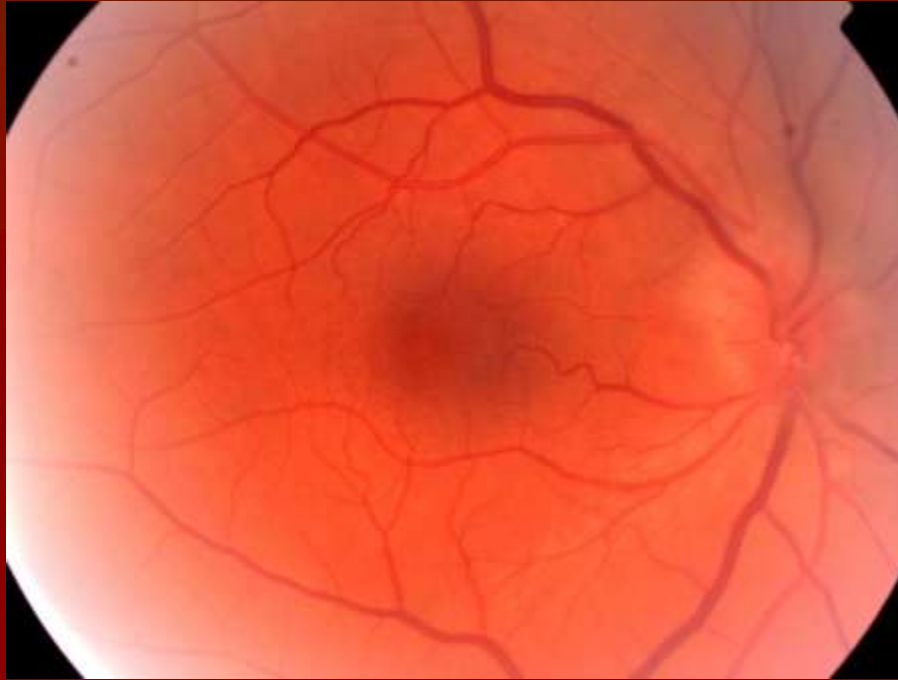
EOM $\left\{ \begin{array}{l} \text{full OU} \\ (-) \text{ pain} \end{array} \right.$

CVF $\left\{ \begin{array}{l} \text{full OU} \end{array} \right.$

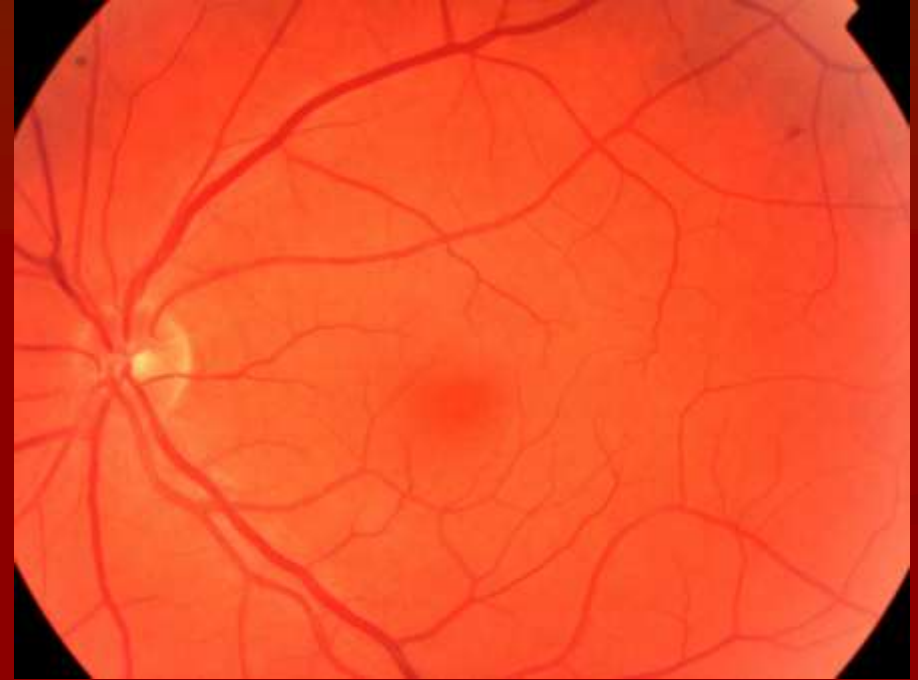
Red desaturation $\left\{ \begin{array}{l} 0\% \\ 100\% \end{array} \right.$

Anterior Segment: 1+ nuclear sclerotic/cortical cataract OU

DFE

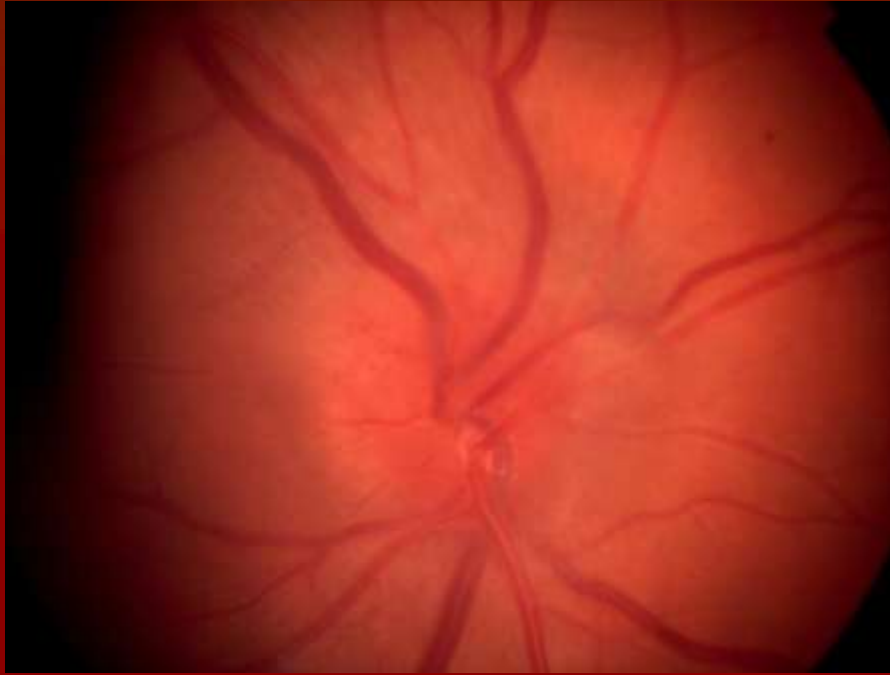


Color photo OD demonstrating hyperemic disc and blurring of the disc margins

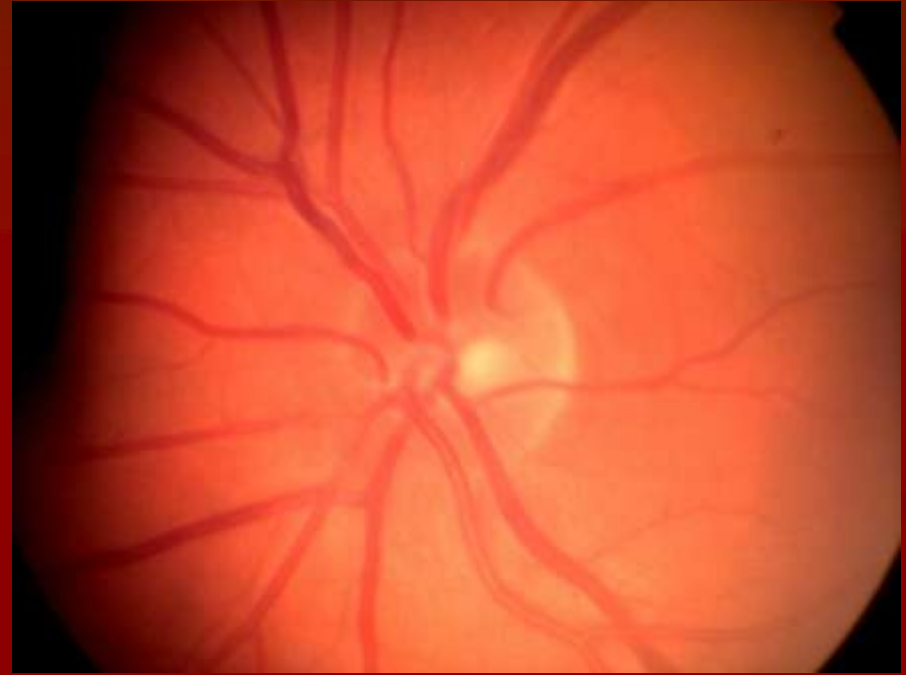


Color photo OS showing normal optic disc and fundus

DFE

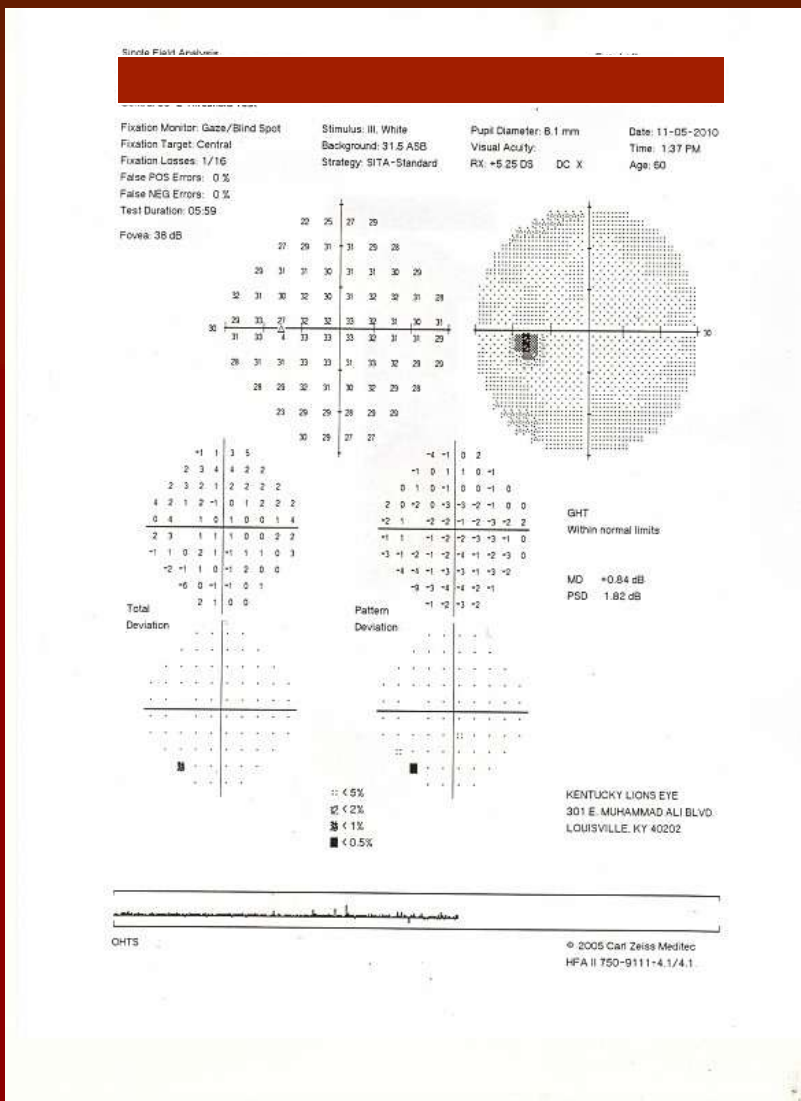


Color photo of disc OD demonstrating hyperemic disc and blurring of the disc margins, especially superiorly

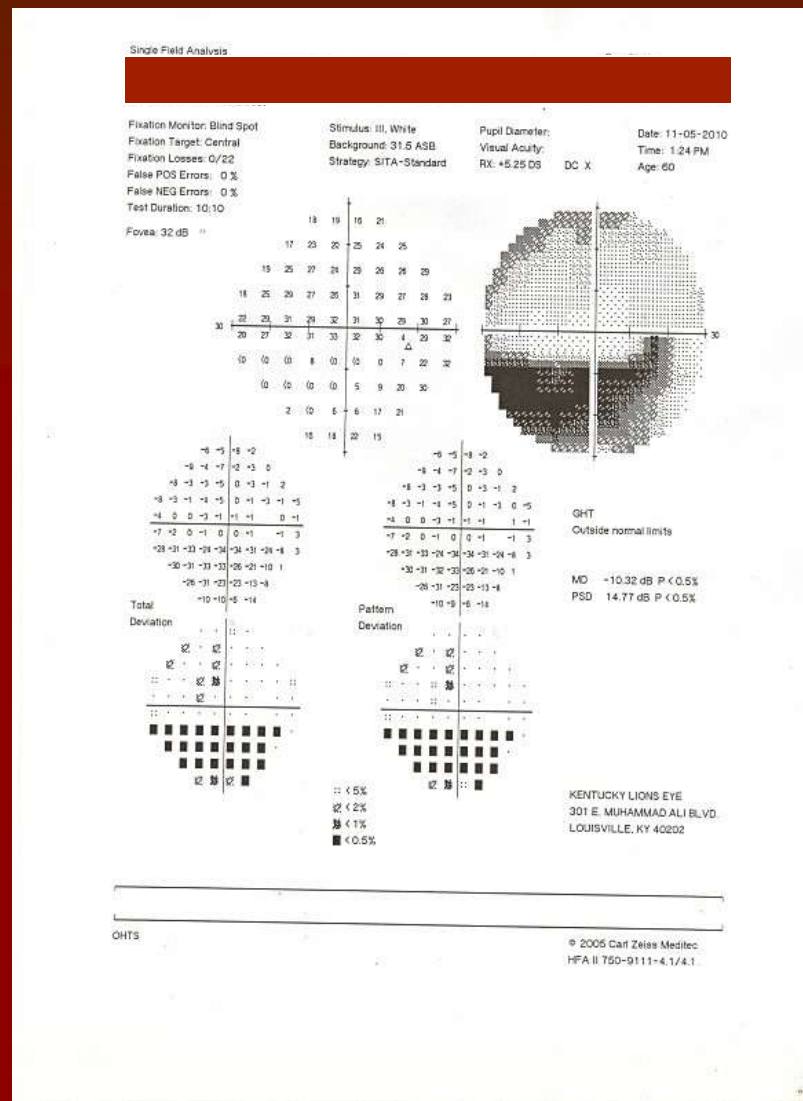


Color photo OS showing normal optic disc

Visual Fields



Central 30-2 Visual Field OS: Full



Central 30-2 Visual Field OD: Inferior Altitudinal Defect

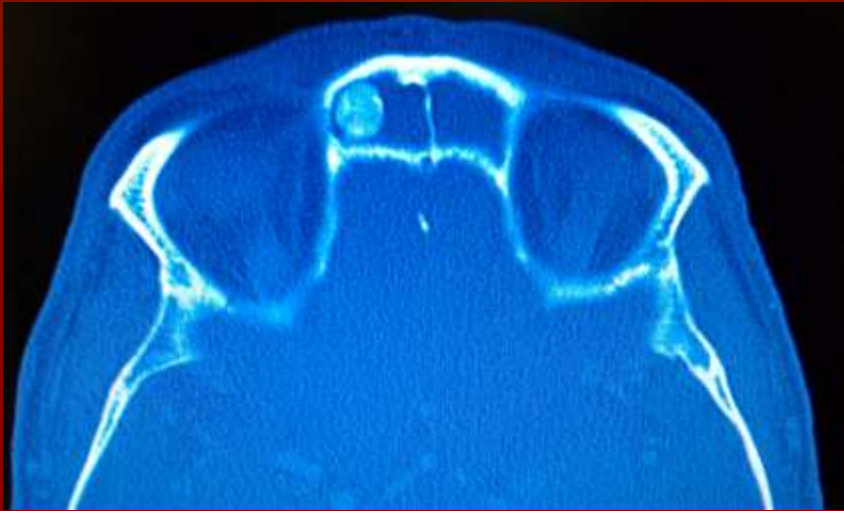
Impression/Differential Diagnosis

- 60yo hypertensive WM with decreased vision, optic nerve swelling and altitudinal defect OD
- DDX?
 - Anterior Ischemic Optic Neuropathy
 - AAION
 - NAION
 - Compressive optic neuropathy
 - Optic neuritis
 - Infectious
 - Infiltrative

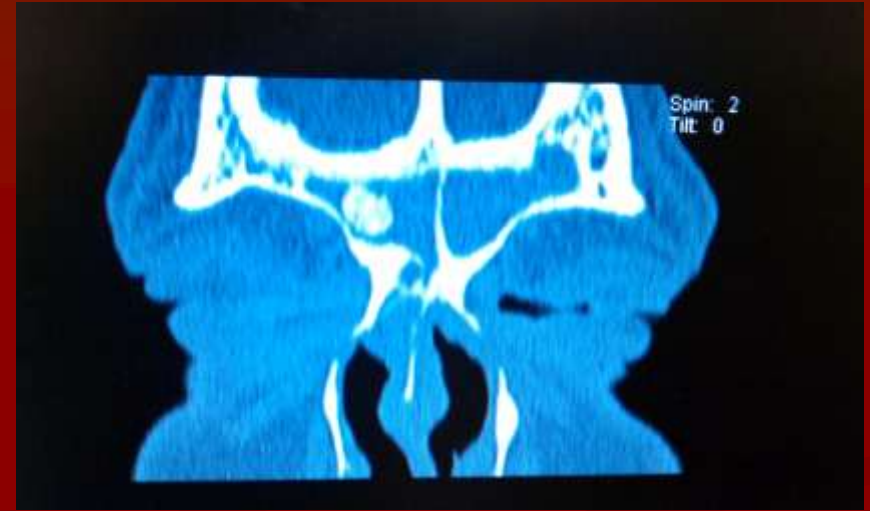
Plan

- Labs
 - ESR = 5
 - CRP = 0.69
- Pt returned for 3 day follow up, still c/o HA, which he described as constant and global, not alleviated with Tylenol.
 - BCVA 20/20 OU
 - (-) RAPD
- Plan: CT Head and Orbit

CT



TOP LEFT: Axial view of CT (bone window) showing opacified frontal sinus and well-circumscribed round opacity within sinus



TOP RIGHT: Coronal view of CT (bone window) again demonstrating opacified frontal sinus and opacity



BOTTOM LEFT: Coronal view of CT (bone window) showing hyperdense opacity in ethmoid sinus

Discussion – Anterior Ischemic Optic Neuropathy

- Most common cause of acute optic neuropathy in >50yo
- Presents with *painless, monocular* vision loss and +RAPD
- Always with VF loss
 - Altitudinal or arcuate
 - Optic disc edema at onset
- Etiology: Infarction of optic nerve head just posterior to lamina cribrosa due to inadequate perfusion by posterior ciliary arteries

	AAION	NAION (90-95%)
Age of onset	80's	60's – 70's
Gender	F > M	F = M
Associated symptoms	Jaw claudication, HA, scalp tenderness, myalgia, constitutional symptoms	<10% mild pain
VA	Worse than 20/200	Better than 20/200
Associated systemic conditions	Polymyalgia rheumatica	DM, HTN, HLD, OSA
DFE	Pallid, diffuse ON edema Retinal ischemia, CWS	Hyperemic, segmental ON edema, “disk-at-risk” fellow
Labs	ESR, CRP	No lab abnormalities
Risk of fellow eye involvement	95% (If left untreated)	15%
Treatment	Systemic corticosteroids	Observation

Ischemic Optic Neuropathy Decompression Trial

- Randomized , controlled trial at 25 clinical centers nationwide
- Purpose: Compare the safety and efficacy of optic nerve decompression plus follow up vs follow up alone for non-arteritic ION
- 244 patients
 - 119 received decompression surgery
 - 125 received careful follow up only
- Preliminary results:
 - 33% of pts s/p decompression *gained* 3 lines of vision
 - 43% of pts with careful follow up only *gained* 3 lines of vision
 - 24% of pts s/p decompression *lost* 3 or more lines of vision
 - 12% of pts with careful follow up only *lost* 3 or more lines of vision
- CONCLUSION: Optic nerve decompression is NOT appropriate treatment for NAION

Role of Intravitreal Injection for the Treatment of NAION?

■ ? Triamcinolone

- 4 pts with severe vision loss – 4mg IV Triamcinolone
 - Optic disc swelling markedly decreased 1 week post injection and disappeared by 3rd week in all eyes
 - Mean improvement in VA:
 - @1st week → 4 ETDRS lines
 - @3rd week → 5.8 ETDRS lines
 - @ final visit → 6.2 ETDRS lines
- 6 pts in control group – no treatment
 - Optic disc swelling resolved between 4th week and 3rd month
 - Mean improvement in VA:
 - @1st week → 0 ETDRS lines
 - @3rd week → 0.7 ETDRS lines
 - @ final visit → 1.3 ETDRS lines
- IV Triamcinolone relatively improved recovery of visual acuity and rapid resolution of optic disc swelling. No visual field improvement was observed.

■ ? Lucentis

- 3 pts with NAION of 1-2 days onset
- No functional improvement was observed with IV Ranibizumab

References

1. Pece A, Querques G, Quinto A, Isola V. **Intravitreal ranibizumab injection for nonarteritic ischemic optic neuropathy.** J Ocul Pharmacol Ther. 2010 Oct;26(5):523-7.
2. Kaderli B, Avci R, Yucel A, Guler K, Geliskan O. **Intravitreal triamcinolone improves recovery of visual acuity in nonarteritic anterior ischemic optic neuropathy.** J Neuroophthalmol. 2007 Sep;27(3):164-8.
3. Kupfer C, Kelman S, Dickersin, K. Clinical alert to ophthalmologists and neurologists. Jan 1995. National Eye Institute. On-line. <http://www.nei.nih.gov/news/clinicalalerts/alert-iondt.asp> Last accessed November 11, 2010.
4. Atkins EJ, Bruce BB, Newman NJ, Biousse V. **Treatment of nonarteritic anterior ischemic optic neuropathy.** Surv Ophthalmol. 2010 Jan-Feb;55(1):47-63.

Thank You!