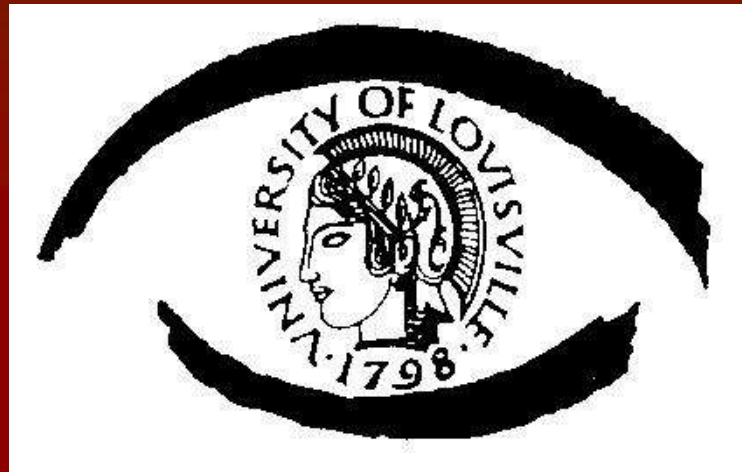


Clinical Rounds



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Subjective

CC: “I can’t see out of my left eye”

HPI: 30 year old male presents with gradual decreased vision in his left eye over past 2 years.

POH: None

PMH: No medical conditions

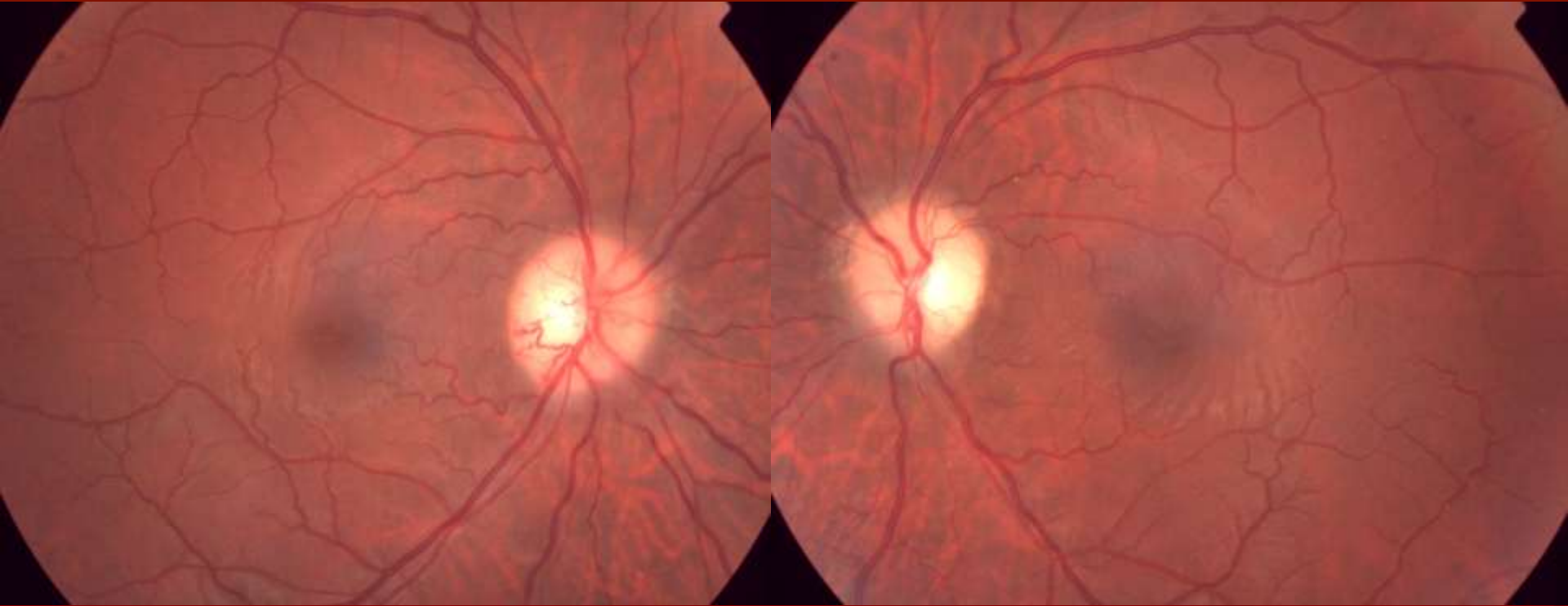
ROS: No other complaints

FH: Vague history of visual impairment in patient’s mother and sister

Exam

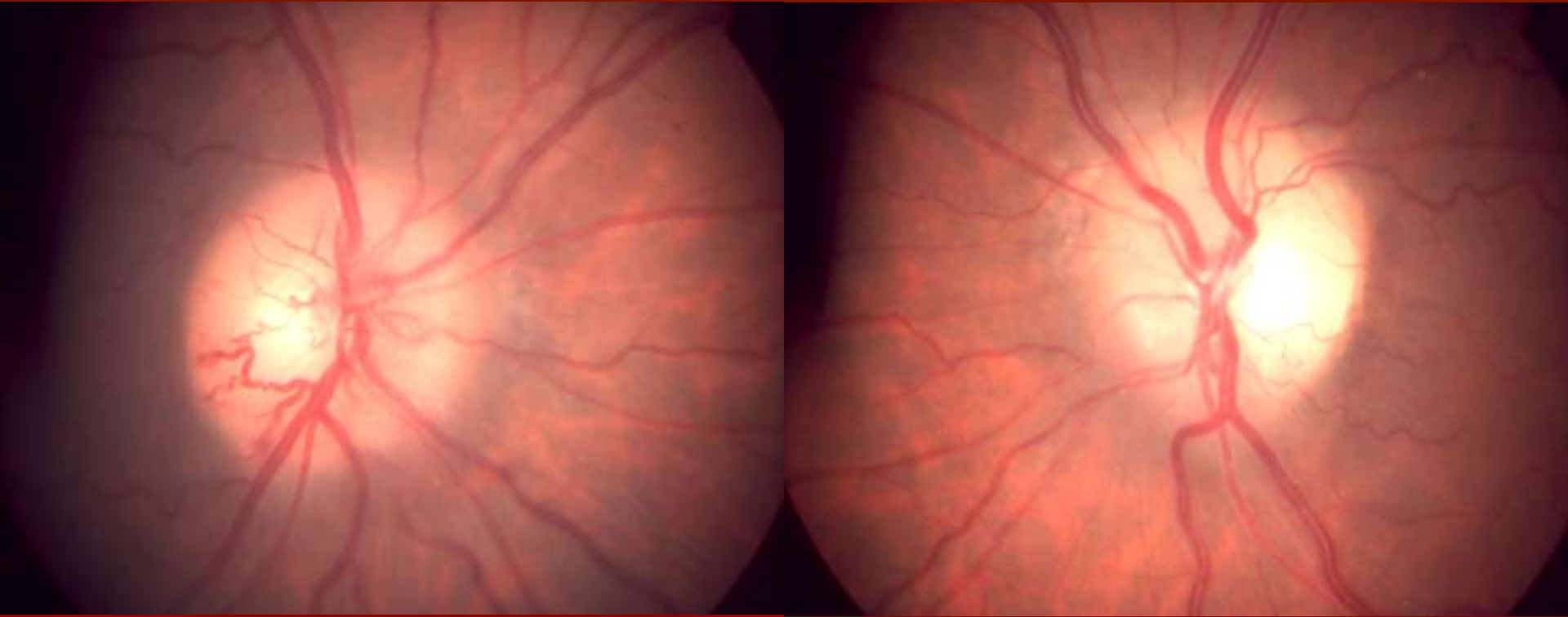
	OD	OS
<u>BCVA:</u>	20/20	CF @ 2''
<u>Pupils:</u>	4 mm	4 mm +APD OS
<u>IOP:</u>	18	17
<u>EOM:</u>	Full	Full (no pain)
<u>Anterior Segment:</u>	WNL	WNL

Fundus Photo



Fundus photographs showing bilateral optic nerve swelling. The margins of the nerves are blurred. There is pallor of the optic disc OS.

Optic Nerves



Magnified photographs of the optic nerves showing bilateral optic nerve swelling. The margins of the nerves are blurred. There is pallor of the optic disc OS.

Impression

- 30 year old African American male with bilateral optic nerve edema and decreased vision OS.

Differential Diagnosis

- Pseudotumor Cerebri
- Optic Neuritis
- Brain tumor
- Leber's Hereditary Optic Neuropathy

Work Up

- CT brain: WNL
- Lumbar Puncture: WNL
- RPR: Negative
- Lyme Titer: Negative
- Bartonella: Negative
- ACE: WNL
- Chest Xray: WNL
- MRI Brain: Optic nerves bilateral thickened;
consistent with optic neuritis

- Patient was seen by Neuro-ophthalmology and diagnosed with Idiopathic Atypical Optic Neuritis
- Treated with course of oral prednisone
- BCVA OS improved from CF to 20/400
- BCVA OD stable at 20/20; possible improvement of visual field

Optic Neuritis

- Primary inflammation of the optic nerve typically from demyelination
- Clinical Presentation: Typical Optic Neuritis
 - Retrobulbar optic neuritis (no disc swelling) – 2/3rd of patients
 - Mild disc edema – 1/3rd of patients
 - Loss of central vision
 - Pain in and around affected eye

Clinical Features of Atypical Optic Neuritis

- More than mild disc edema
 - Optic disc hemorrhage
- Bilateral simultaneous or rapidly sequential optic neuritis
- Severe vision loss – No Light Perception
- Severe pain
- Lack of visual recovery within 5 weeks or continued deterioration
 - Shams PN, Plant GT. Optic neuritis: a review. Int MS J. 2009 Sep;16(3):82-9.

Comparison of Typical vs Atypical Optic Neuritis

	Typical	Atypical
Onset	Acute to Subacute – few days to 2 weeks	Bilateral simultaneous or rapidly sequential
Vision	Reduced contrast and color vision out of proportion to visual acuity	Severe visual loss
Pain	Pain with eye movements	Severe pain that restricts eye movements or wakes patient from sleep
Ocular Findings	Uhthoff's phenomenon Normal or mild optic nerve edema	Marked optic nerve edema Marked optic disc hemorrhage Macular Star
Disease Course	Spontaneous visual improvement in >90% of patients	Lack of visual recovery within 5 weeks or continued deterioration
Response to Treatment	No deterioration in vision when steroids withdrawn	Corticosteroid dependent optic neuropathy – deterioration in vision when steroids withdrawn

Causes

- Primary Demyelinating Process – cause of typical optic neuritis
- Infectious
- Inflammatory

- Miller NR, Newman NJ et al. Walsh and Hoyt's Clinical Neuro-Ophthalmology: The Essentials. 2nd Ed. 2008. Lippincott Williams & Wilkins.

Infectious Optic Neuritis

- Typically follows onset of viral, or less often bacterial, infection by 1-3 weeks
- More common in children than adults
- Immunologic process producing demyelination of the optic nerve

- Viral: adenovirus, coxsackievirus, cytomegalovirus, hepatitis A, HHV4, HIV, measles, mumps, rubeola, rubella, VZV
- Bacterial: syphilis, Lyme, bartonella, antrax, brucellosis, TB, typhoid

Inflammatory Optic Neuritis

- Sarcoidosis
 - Clinical findings may be indistinguishable from typical optic neuritis
 - Optic disc edema
 - Retrobulbar
 - Characteristic appearance of optic disc is lumpy and white
 - Extremely sensitive to steroids; must use slow taper

■ Systemic Lupus Erythematosus

- Similar clinically to typical acute optic neuritis
- Rare; Occurs in 1% of patients with SLE
 - Dr. Golnik states he has seen 1 in 20 years of practice!
- Optic neuritis may be presenting sign of disease
- Pathogenesis is related to ischemia

Idiopathic Atypical Optic Neuritis

- Diagnosis given when all work up is negative
- Can be treated with corticosteroids and tapered per patient's response

References

Shams PN, Plant GT. Optic neuritis: a review. *Int MS J.* 2009 Sep;16(3):82-9.

Miller NR, Newman NJ et al. *Walsh and Hoyt's Clinical Neuro-Ophthalmology: The Essentials.* 2nd Ed. 2008. Lippincott Williams & Wilkins.

Vaphiades M, Golnik KC. Optic neuropathy from bacteria. *Int Ophthalmol Clin.* 2007 Fall;47(4):25-36, xi.