Dr. Devon Kennedy, O.D.
Dougherty Laser Vision

Dr. Kennedy is the newest internal optometrist to the DLV family. She graduated from Southern California College of Optometry with honors and clinical recognition in ocular disease and contact lens.

Her previous experience includes extensive retinal disease and glaucoma co-management in addition to post-operative care. She is currently serving on the Los Angeles County Optometric Society Board and is a contributing writer to CovalentCareers.

Please feel free to reach out with any pre/post-op questions or if you need anything at all!

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The Most Interesting Case of My Career: Neuroretinitis

Dr. Sidra Qadri OD
Director Of Optometric Services
Dougherty Laser Vision
@doctorsidraqadri

History

22 yo white female

- Chief complaint
  - Blurry vision at distance at all times.
  - Reports black spot in vision. Occasionally looks like a “grid” in the right eye

  - (-) Photopsia, (-)Floaters, (-)Photophobia
- POHx
  - As a child patient reports having chronic conjunctivitis
- PMHx

– Sharp pain in chest in 2017, recurrent kidney infections 2016/2017

- FMHx/FOHx

- Unremarkable

- ROS

-Endocrine: Previous recurrent kidney infections 2016/2017

-Constitutional: Weakness, weight loss onset 2 yrs prior

-Musculoskeletal: Joint weakness

-Respiratory: Vague rib cage pain, difficulty breathing

Entrance Tests

- VAs (sc)
  - Distance
    - *OD: 20/250 PH: 20/60*
    - *OS: 20/200 PH: 20/60*
  - Near
    - *OD: 20/25*
    - *OS: 20/25*
- Cover Test (sc)
  - Distance: ortho
  - Near: ortho
- Blood pressure

  -94/60 mmhg

- EOMs
  -Unrestrictive OD/OS
- Confrontation Fields
  - FTFC, OD/OS
- Pupils
  - **PERRLA (-) APD OD,OS**

Refraction

- Auto refraction:
  - OD: -2.00 -0.25 x073
  - OS: -1.75 -0.50 x 095
- Manifest:
  - OD: -2.00 -0.50 x080 DVA: 20/25 NVA: 20/25
  - OS: -1.75 -0.50 x095 DVA: 20/20 NVA: 20/20
- Final
  - OD: -2.00 -0.50 x080
  - OS: -1.75 -0.50 x095

Slit Lamp Exam

OD

- Lids and lashes
  - unremarkable
- Tear film
  - Decrease tear film
- Conjunctiva
  - unremarkable
- Cornea
  - **Trace SPK inferior**
- Open angles: Grade IV
- IOP: 15MMHG

OS

- Lids and lashes
  - unremarkable
- Tear film
  - Decrease tear film
- Cornea
  - **Trace SPK inferior**
- Open angles: Grade IV
- **IOP: 15mmHg**

Fundus

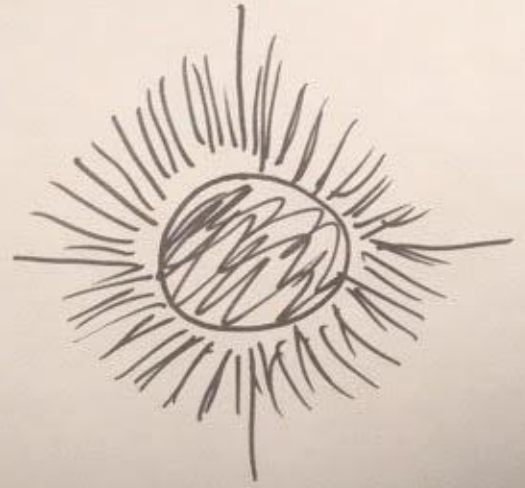
OD

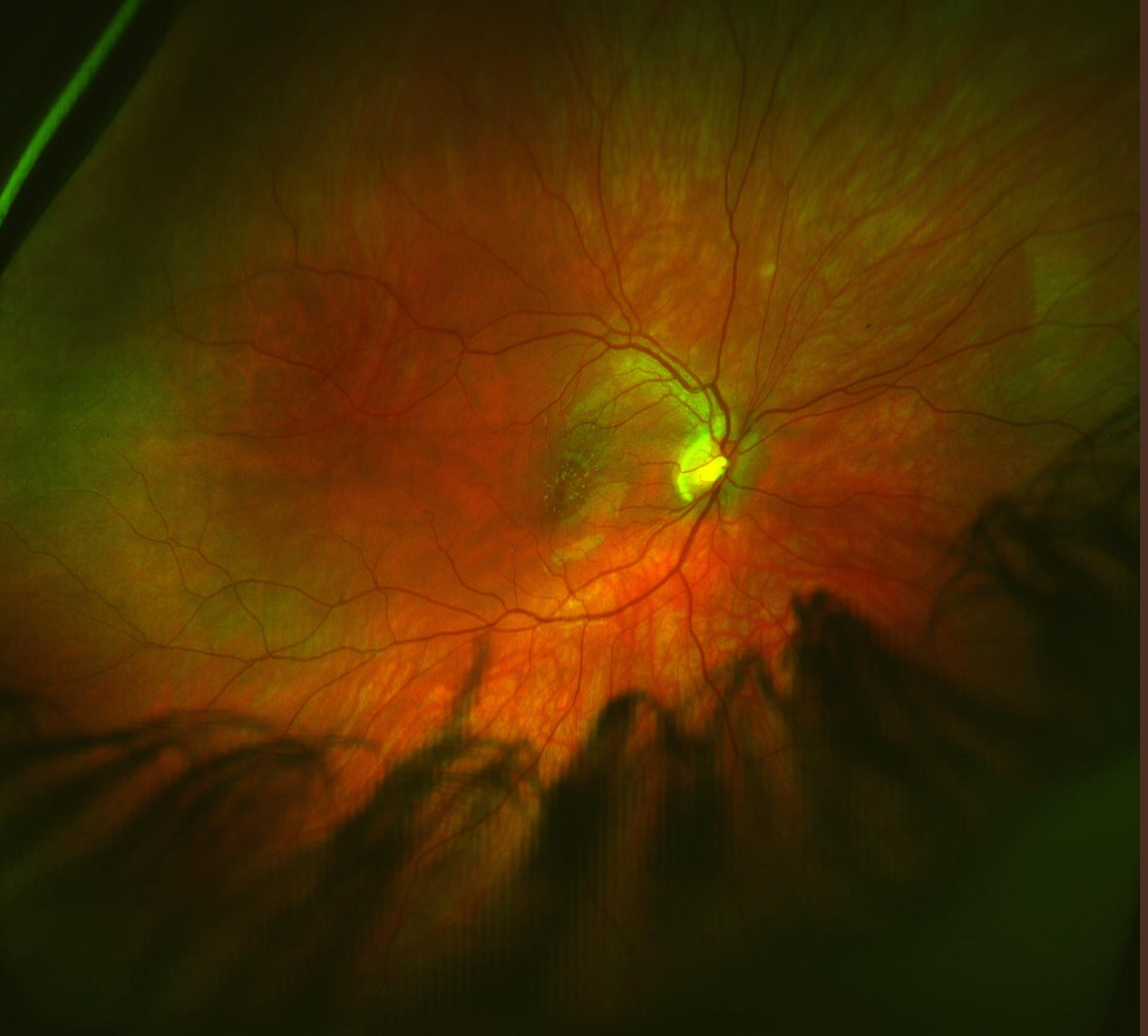
- C/D
  - V: 0.40 H: 0.40
  - Follows ISNT rule, rim tissue normal and symmetrical
- Optic discs
  - unremarkable
- Macular
  - **Exudative macular star.**
- Periphery
  - **Vitritis in inferior temporal**

OS

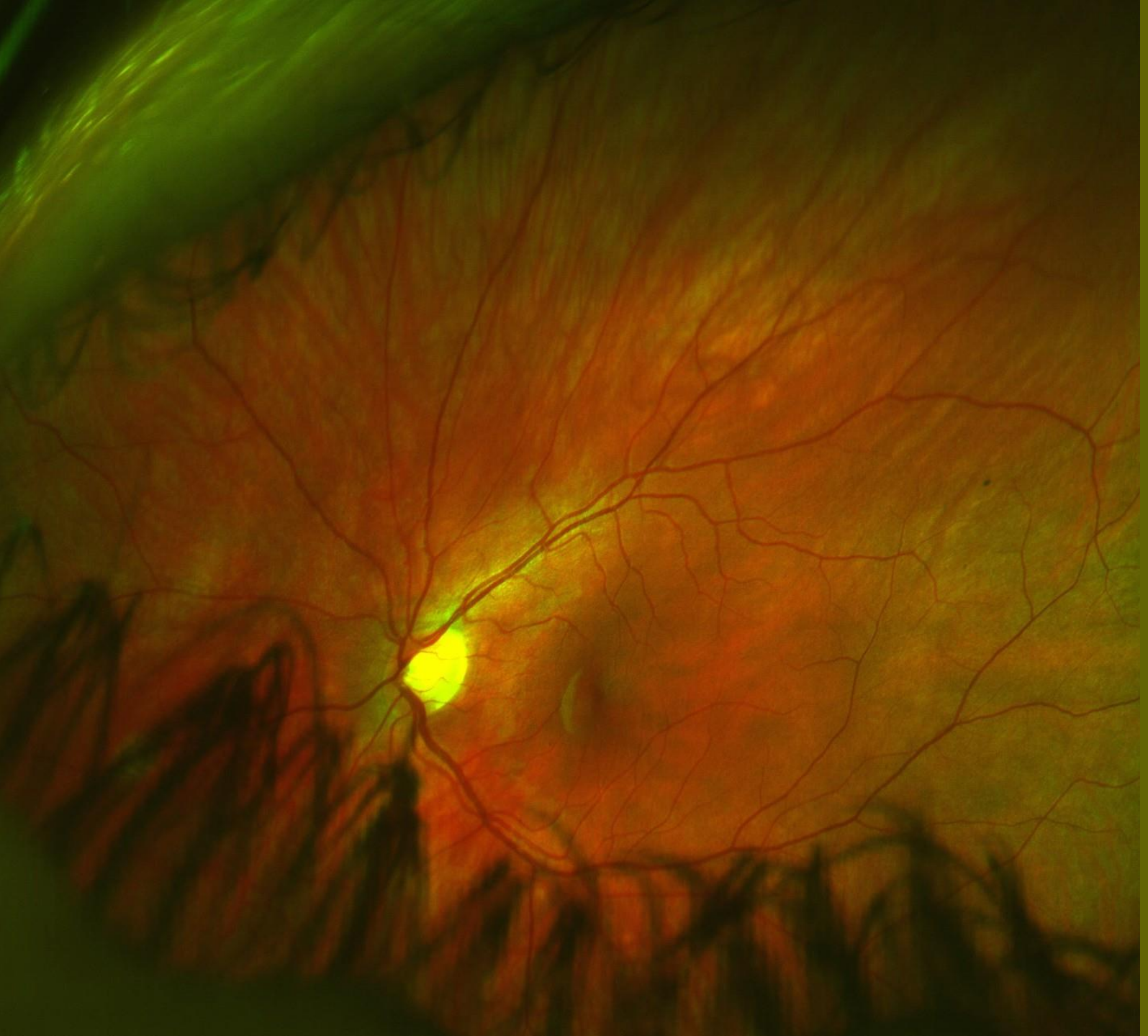
- C/D
  - V: 0.35 H: 0.35
  - Follow ISNT rule, rim tissue normal and symmetrical
- Optic discs
  - unremarkable
- Macular
  - unremarkable
- Periphery
  - unremarkable
- Vitreous
  - unremarkable

Right
eye only

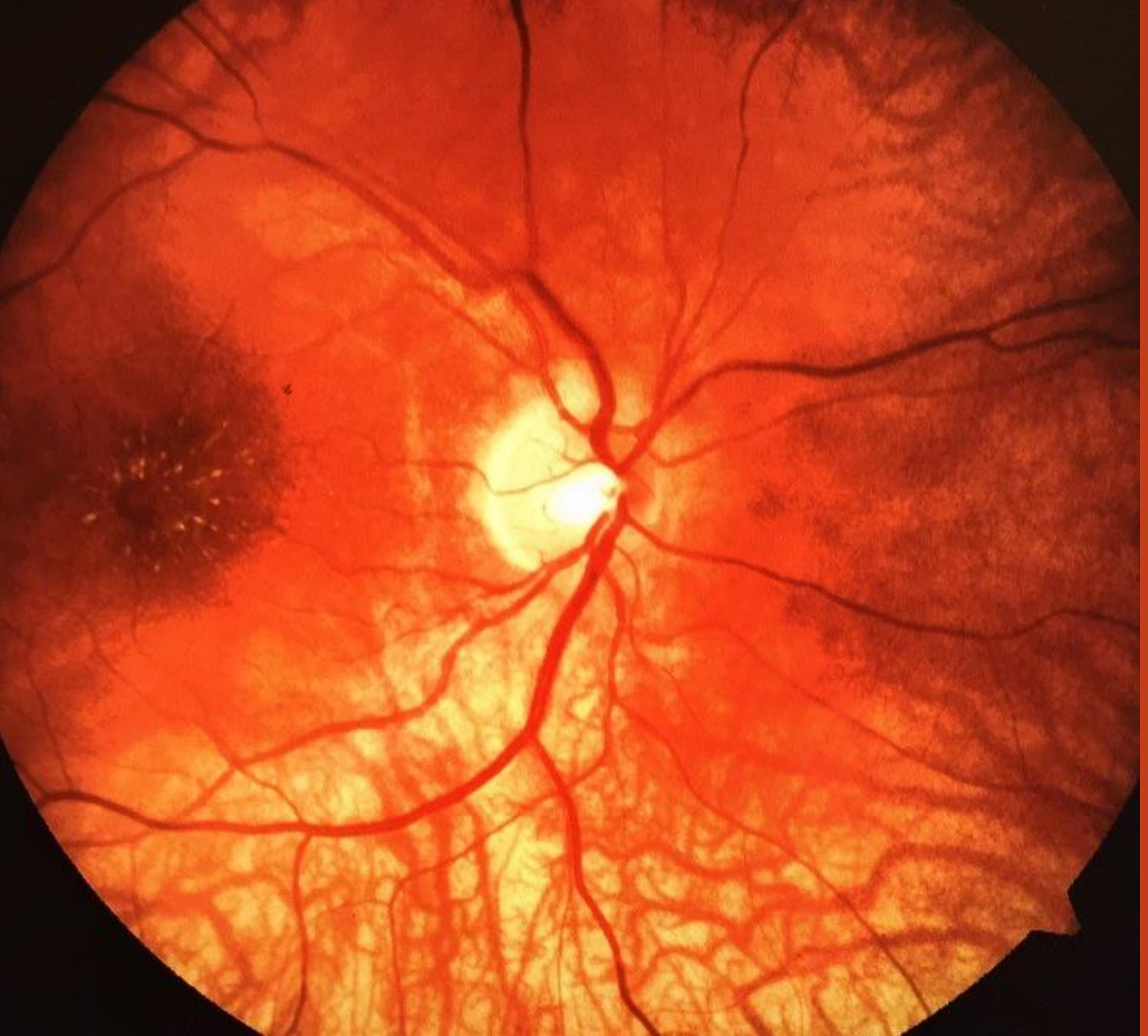




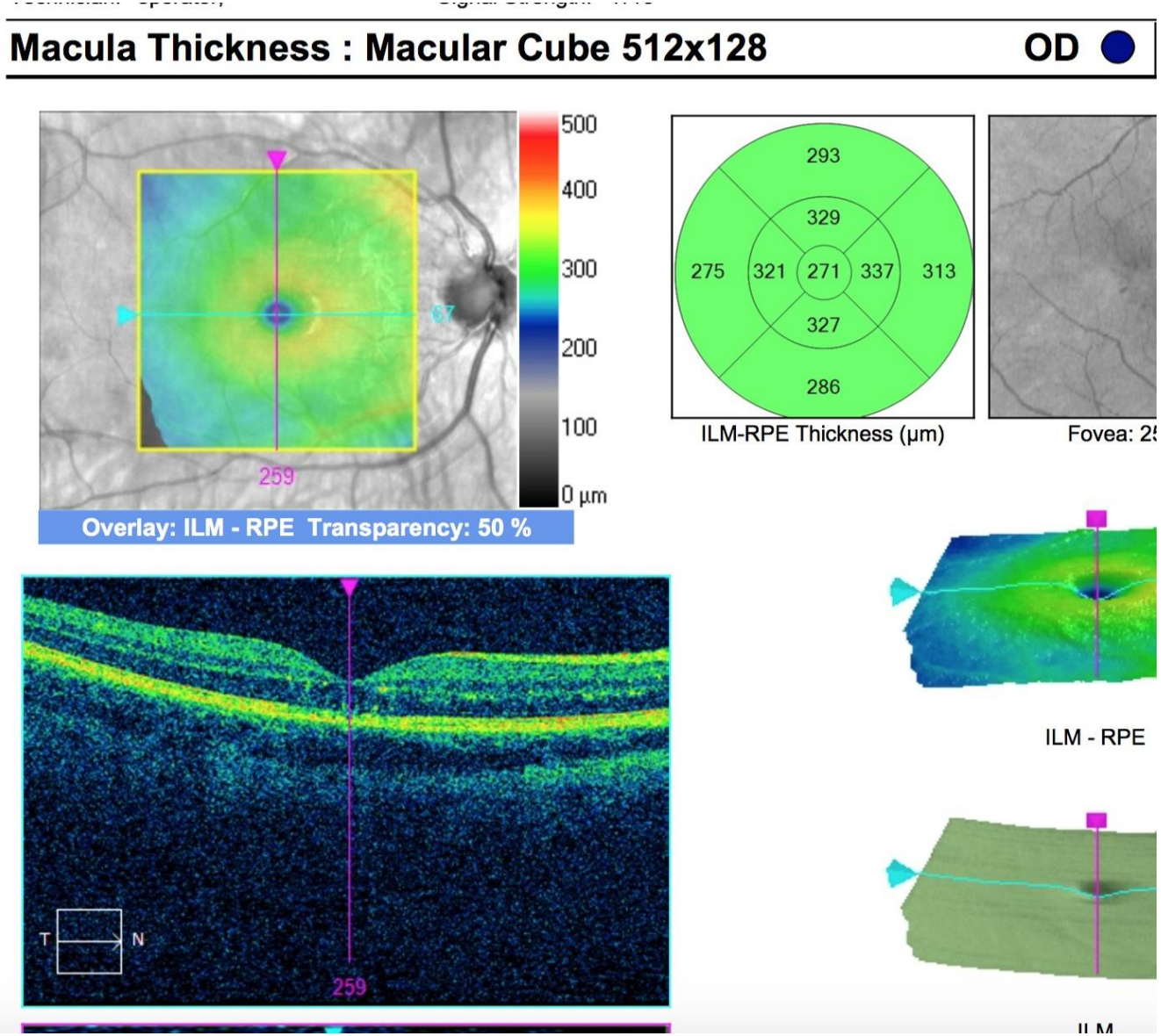
OPTOS: OD



OPTOS: OS



Fundus photo: OD



Macular OCT: OD

A/P

Assessment(s):

- 1. Right eye: Exudative Macular star secondary to Neuroretinitis

- 2. Myopia OU and Astigmatism OU

Plan:

- 1. Patient was referred out to Baylor for blood work. Patient education. Rx'd Doxy 100 mg 1 capsule BID x 3 weeks. ER for any signs/symptoms outside of normal. RTC 3 weeks for DFE f/u, optic nerve OCT, and HVF 24-2.

- 2. RX specs FTW. SV distance.

Blood work

1.Syphillis: RPR, VDRL, FTA-ABS

2.Cat scratch disease: IFA, IgM/IgG

3. Lyme Disease: IgM-AB

4.Inflammation: CBC,ESR

5. Autoimmune diseases: Rheumatoid factor, ANA, LFT(liver fxn test)

6. TB: QFT

2nd follow up:

- VAs (sc)
  - Distance
    - *OD: 20/200 PH: 20/30--*
    - *OS: 20/150 PH: 20/30*
  - Near
    - *OD: 20/25*
    - *OS: 20/25*
- Cover Test (sc)
  - Distance: ortho
  - Near: ortho
- Blood pressure

  -94/60 mmhg, -fever, -palpation of lymph nodes

- EOMs
  -Unrestrictive OD/OS
- Confrontation Fields
  - FTFC, OD/OS
- Pupils
  - PERRLA (-) APD OU

Fundus

OD

- C/D
  - V: 0.40 H: 0.40
  - Follows ISNT rule, rim tissue normal and symmetrical
- Optic discs
  - unremarkable
- Macular
  - Resolving Exudative macular star.
- Vitreous
  - Vitritis in inferior temporal near ora serrata

OS

- C/D
  - V: 0.35 H: 0.35
  - Follow ISNT rule, rim tissue normal and symmetrical
- Optic discs
  - unremarkable
- Macular
  - unremarkable
- Periphery
  - unremarkable
- Vitreous
  - unremarkable

3rd follow up:

- VAs (sc)
  - Distance
    - *OD: 20/80 PH: 20/25-*
    - *OS: 20/100 PH: 20/25*
  - Near
    - *OD: 20/25*
    - *OS: 20/25*
- Cover Test (sc)
  - Distance: ortho
  - Near: ortho
- Blood pressure

-97/65 mmhg, -fever, -palpation of lymph nodes. Patient reports headache (Classic migraine with aura)

- EOMs
  -Unrestrictive OD/OS
- Confrontation Fields
  - FTFC, OD/OS
- Pupils
  - PERRLA (-) APD OU

Fundus

OD

- C/D
  - V: 0.40 H: 0.40
  - Follows ISNT rule, rim tissue normal and symmetrical
- Optic discs
  - unremarkable
- Macular
  - Resolving Exudative macular star.
- Periphery
  - Unremarkable
- Vitreous
  - unremarkable

OS

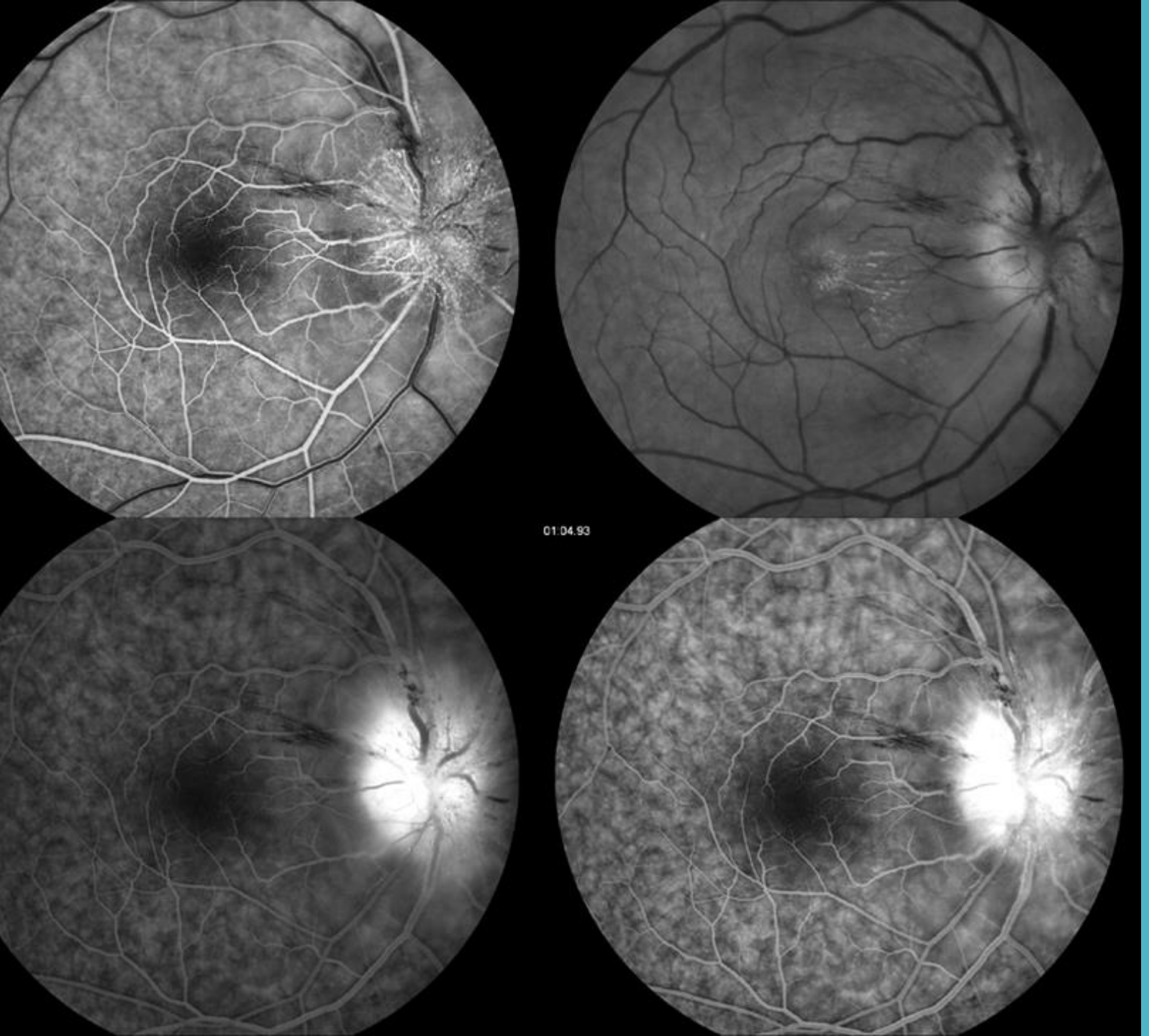
- C/D
  - V: 0.35 H: 0.35
  - Follow ISNT rule, rim tissue normal and symmetrical
- Optic discs
  - unremarkable
- Macular
  - unremarkable
- Periphery
  - unremarkable
- Vitreous
  - unremarkable

Results

Tests that came out positive: **Rheumatoid factor**

Differential Diagnosis **(+) RF**:

1. Rheumatoid Arthritis
2. Systemic Lupus Erythematosus
3. Sjogrens Syndrome
4. Viral Hepatitis



Neuroretinitis

-Optic Neuropathy

-Inflammation of intraocular, peripapillary retina

-Acute unilateral vision loss

Optic disc edema and macular exudates

-Can occur at any age (third decade more prevalent)

-M=F

-Painless vision loss

-VA presents 20/20 to LP

-VF defect: Cecocentral defect

-RAPD

-50%: Prodromal viral like symptoms

Pathophysiology

The earliest clinical abnormality in Neuroretinitis is optic disc edema from inflammation. It typically precedes the development of macular star by 1-3 weeks and resolves spontaneously after 8-12 weeks. The optic disc swelling results to leakage of lipoproteinaceous material from the optic disc vasculature and accumulation of fluid and lipoprotein in the macula, particularly in the outer retinal layers. The disc swelling and macular fluid subside over a few weeks leaving behind the lipoprotein deposits (or hard exudates) in the macula. The characteristic star appearance is due to the radial arrangement of the Henle's fiber in the outer plexiform layer of the retina. The hard exudates take 6-12 months to resorb.

Common diseases

INFECTIOUS

Cat scratch disease **(most common cause) 60%**

2nd most common cause Idiopathic (25%)

Toxoplasmosis

TB

Syphillis

Leprosy

HIV

Lyme

Leber's stellate retinopathy(dx of exclusion)

INFLAMMATORY

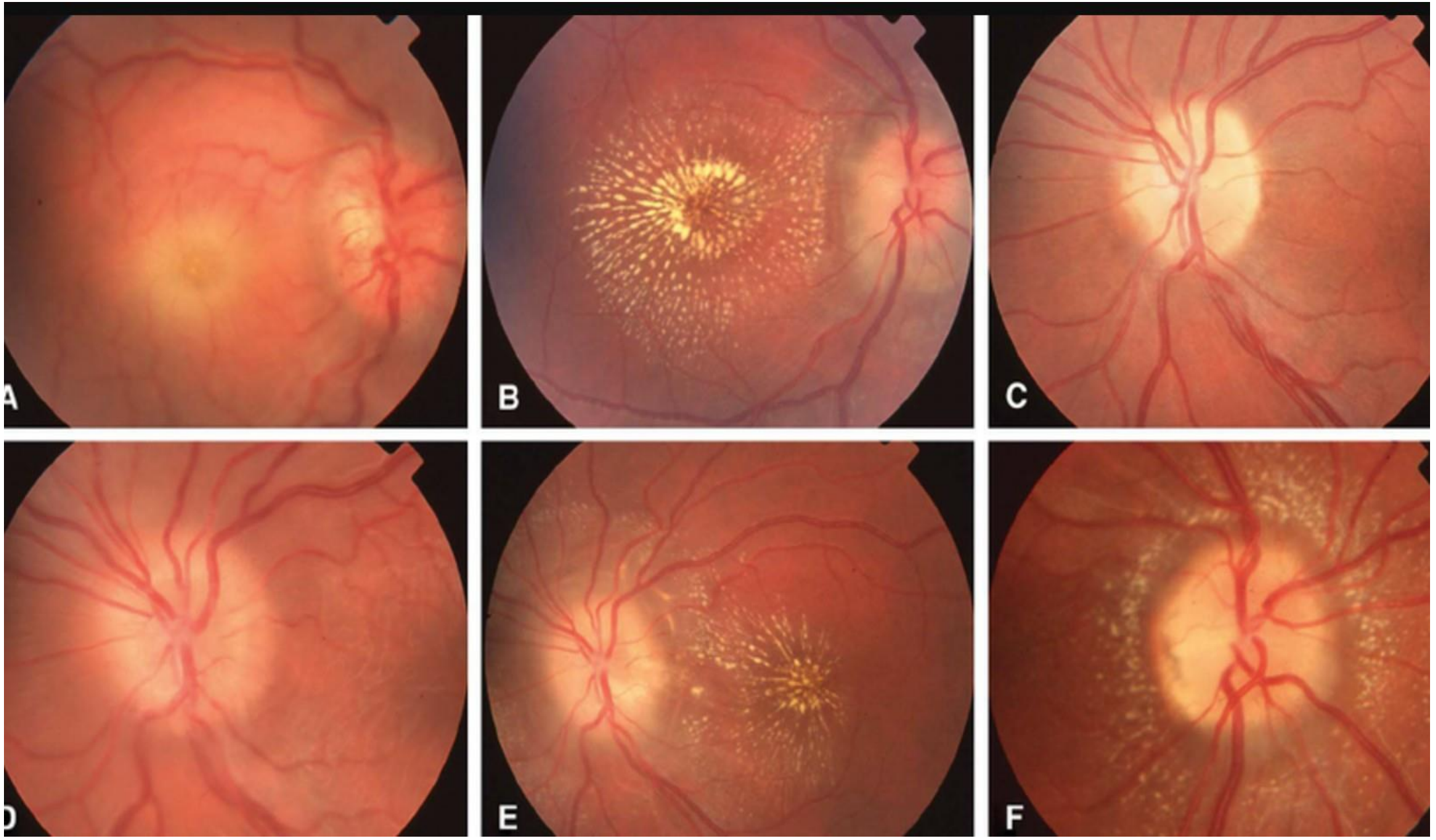
RA

Lupus

Sarcoidosis

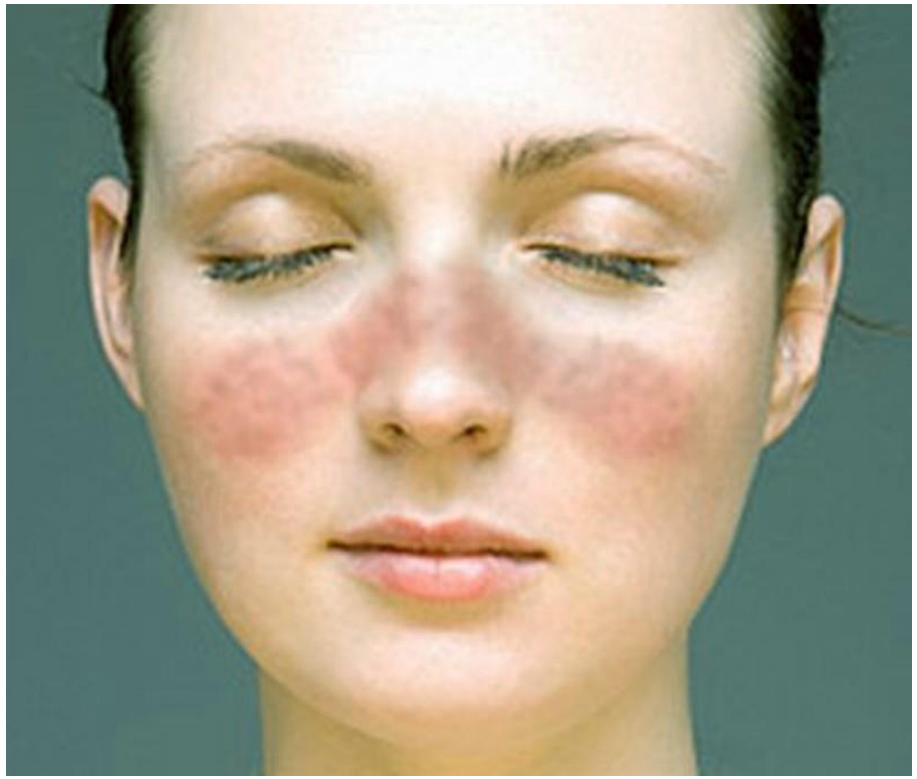
Vasculopathic issues

Polyarteritis Nodosa


A
B
C
D
E
F

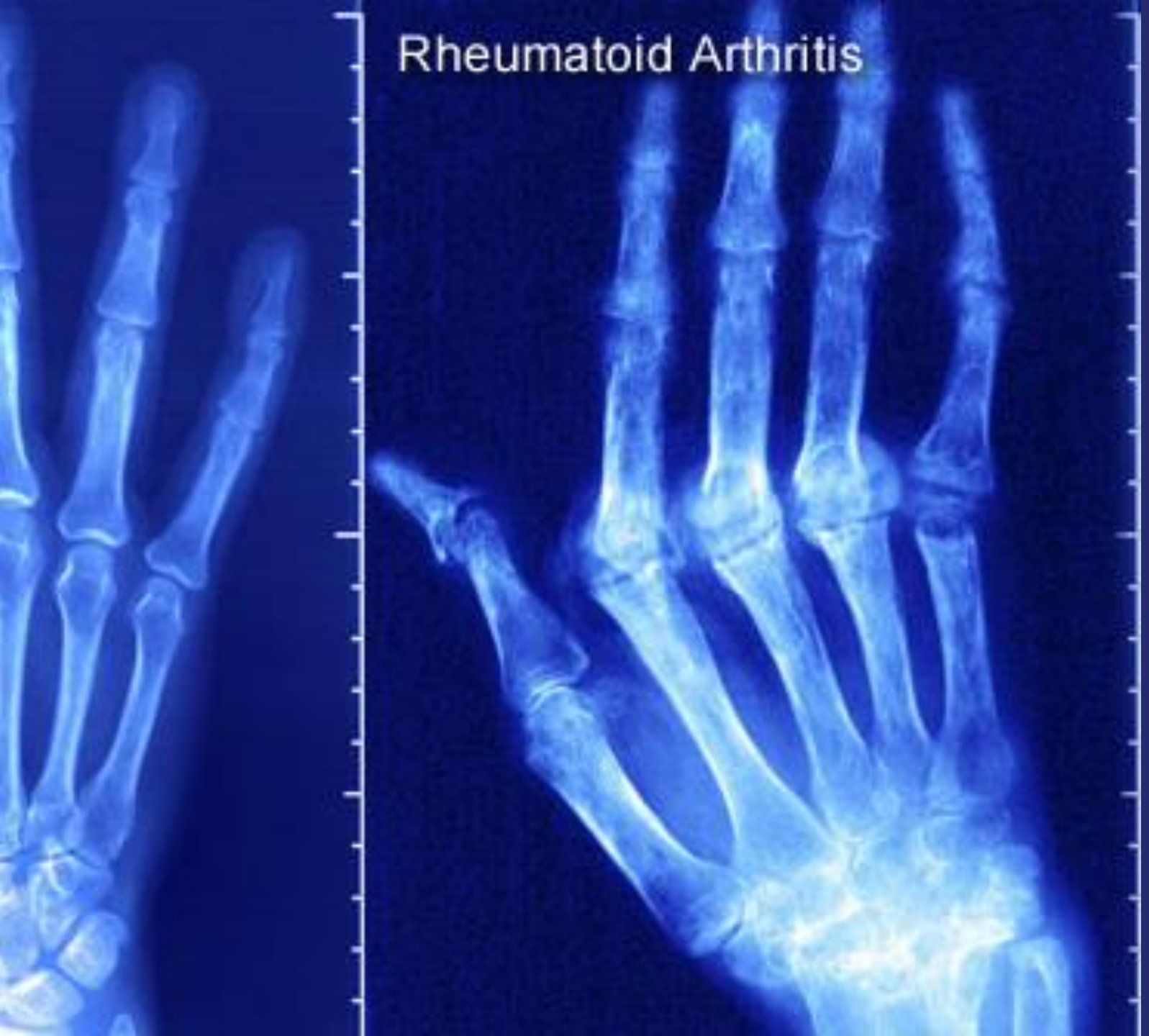
Cat scratch Disease

-History of contact with cats
-Parinaud's oculoglandular syndrome
-Fever
-Lymphadenopathy
-Follicular conjunctivitis
-Bartonella Henslae
-Intra retinal hemes
-Focal or multifocal retinitis
-Retinal or artery occlusions
-Anterior Uveitis
-Intermediate Uveitis



Lupus presenting as Neuroretinitis

-Bilateral Neuroretinitis
-Headache
-Fever
-Splenomegaly
-Cecocentral scotoma
-VEP: Increased latency, decreased amplitude
-Malar butterfly rash
-Dry Eyes
-Optic disc edema
-Uveitis
-Color vision impaired



Rheumatoid Arthritis

-Chronic autoimmune inflammatory disease

-Joint inflammation

-Dry eyes

-Uveitis

-Episcleritis or Scleritis

-Tender warm swollen joints

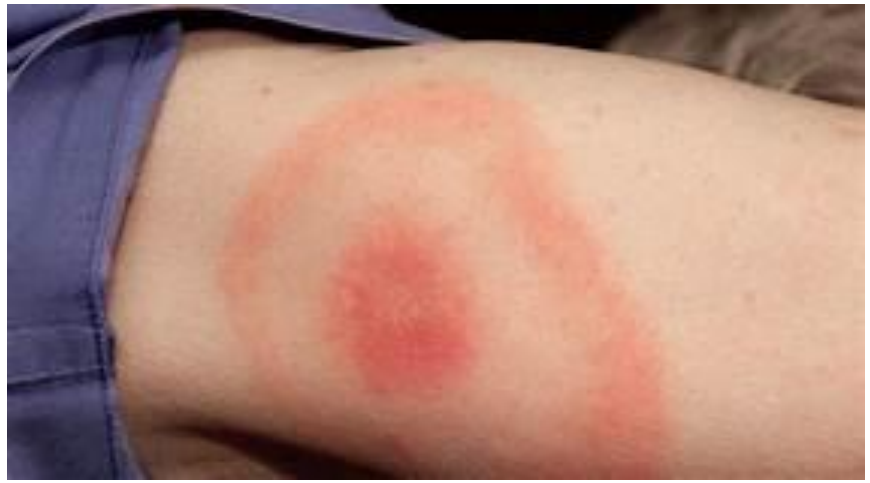
-Fatigue, fever, weight loss

-Women>>>>>Men

-Smoking is a risk factor

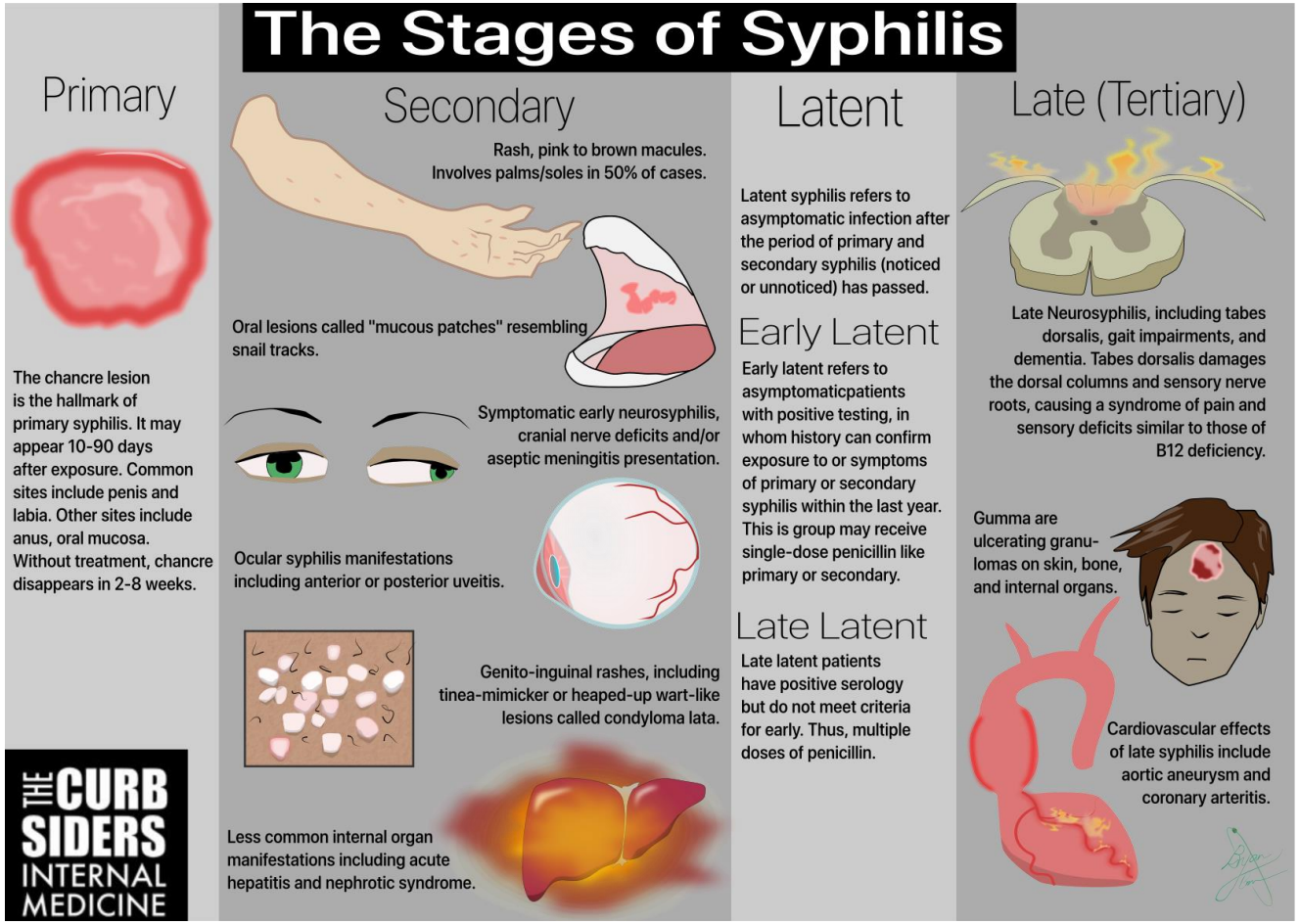
-Increased risk of lung disease

-Increases the risk of lymphoma



Lyme disease

-Spirochete (Borrelia Burgdorferi)
-Tick bite
-Fever, headache, fatigue
-Joint pain
-Heart palpitations
-Bulls eye rash
-Neurological problems
-Disc edema
-Dry eyes
-Uveitis
-Vitritis
-Bells palsy



Syphilis

-Fluctuating vision loss

-Floating spots without ocular pain

-Neuroretinitis along with inflammation of vitreous

-Paracentral scotoma

-Blind Spot enlargement

-Exudative Macular star

-Treatment: Crystalline Penicillin

Discussion continued…

-Resolved ME------ Macular star!

-Lipid rich component penetrates into OPL and causes exudative macular star

-Associated with cells in the vitreous(Vitritis)

-Sterile inflammation, infectious diseases, or idiopathic

-Cat scratch disease is the most common

Neuroretinitis

TABLE 1. Causes of optic disc edema with a macular star (13–16)

Neuroretinitis
Hypertensive retinopathy
Papilledema (increased intracranial pressure)
Anterior ischemic optic neuropathy
Diabetic papillopathy
Posterior vitreous traction
Disc and juxtapapillary tumors (angioma, melanoma)
Toxic (bis-chloroethyl-nitrosourea [BCNU] plus procarbazine)

Purvin V, Sundaram S, Kawasaki A. Neuroretinitis: Review of the Literature and New Observations. Journal of Neuro-Ophthalmology 2011;31:58-68.

Differential Diagnosis

Treatment

-Depends on whether underlying infectious or inflammation

-No treatment for idiopathic

-Self limiting

-Benign

-Vision will recover within weeks to months

Conclusion

This case is an atypical presentation of Neuroretinitis

Broad differential diagnosis for underlying etiology

Using evidence based medicine, monitoring the patient closely

The patient will monitored closely

Patient ended up having a false negative for Syphillis

FINALLY being treated for Syphilis

References

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Nelson C, Saha S, Mead P. Cat-scratch disease in the United States, 2005-2013. *Emerging Infectious Diseases*. October 2016;22(10):1-6.

Internal Study at DLV: Why are patients having LASIK during COVID-19 global pandemic? (in progress)

50%: Contact Intolerance

35%: Wanting to avoid eye infections during COVID-19

8-10%: Finding contact lenses unhygienic during the pandemic

5-7%: Fogging of glasses while wearing mask

Is your vision blocked from all the fog?

Schedule a FREE LASIK Consultation at DLV!

DLV VISION

Call: (805) 987- 5300
Text: (818) 874 - 3048
info@doughertylaservision.com

Dear Affiliate Doctor,

Have you ever wanted to expand your knowledge base on how to co-manage the broad spectrum of pre-operative and post-operative care? Do you want to become an expert in co-management and learn how to manage the spectrum of possibilities for co-management? Do you wish you knew more about the latest treatments and how to handle what if's of co-management?

If the answer is YES to any of these questions- we highly recommend the first of it's kind Refractive Surgery Alliance Grand Rounds program. The program is a comprehensive overview of major topics in refractive surgery and co-management.

The long term goal of the RSA is to roll this program out across all optometry schools internationally. There are four bodies of processes to complete this program, which include: RSA Student Organization, RSA Grand Rounds, RSA Internship, and RSA Certification.

Detailed items discussed include:

1. RSA Student Organization · Organization for students · Adjunct for education · Support for refractive career interests 2. RSA Grand Rounds · Comprehensive education · Collaborative care members o 12 modules o 90 minutes each o Will be recorded o 3rd Wednesday at 8pm EST. · Year 1 of Grand Rounds o Live CE & Quiz o Enduring CE · Year 2 of Grand Rounds o Quiz for attendance o Enduring CE

3. RSA Internship

· Internships available in US & abroad

· 6-week consecutive position with

practice for new graduate ODs

· 2 weeks nonconsecutive for practicing

ODs

· Weekly Rounds

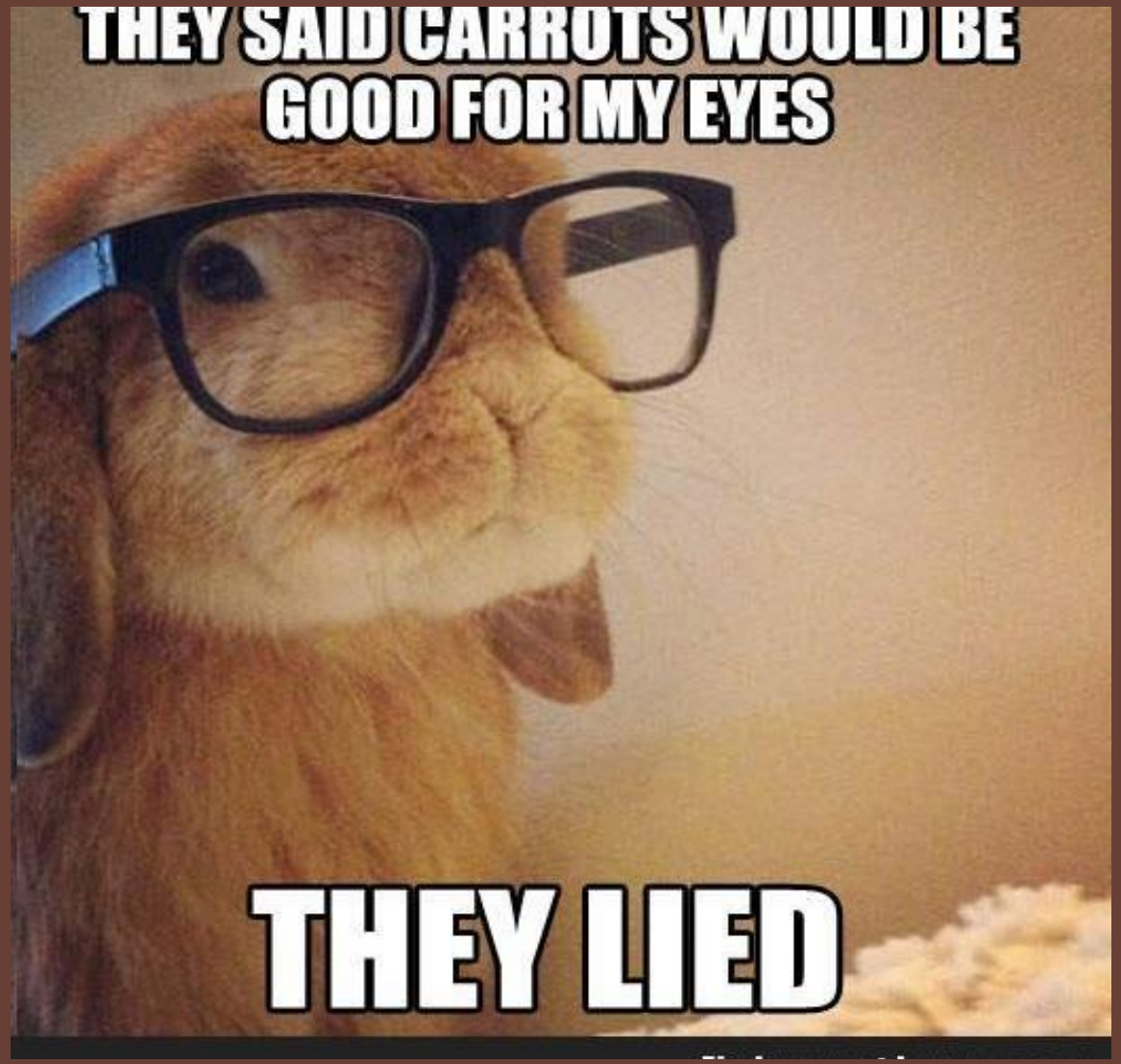
· Midterm & Final Quiz 4. RSA Certification · Completion of all 12 Modules · Completion of internship · RSA Certification from College of Refractive Surgery

Resources: For more information -https://www.refractivealliance.com/ To sign up - https://us02web.zoom.us/webinar/register/WN_mqZzql5QRiuARIVaUwmjWw

Sincerely,

Paul J. Dougherty, M.D. and Adam Abroms, M.D.

DLV and ADV Vision



Questions?
DLV portal: https://www.doughertylaservision.com/doctor-resources/