Grand Rounds Presentation

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SUNY Downstate Medical Center
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Chief Complaint

50 yo African American woman with c/o red, painful left eye with blurry vision over the past month.

History

PMH: denies

POH: h/o herpes zoster ophthalmicus OS (1 year ago) with persistent trigeminal neuralgia

Fam Hx: no glaucoma, no blindness

Soc Hx: denies x3

All: sulfa drugs

Meds: no gtt's; denies systemic meds

Physical Examination

DVaCC OD 20/20 OS 20/40-2
EOM: full OU, no pain with movement
CVF: full OU
Pupils: PERRL OU, no APD
Tapp: 12/12 @1:30pm

Color plates: full OU

Slit Lamp Examination

LLA: WNL OU

C/S: cl OD, 1-2+ inj OS

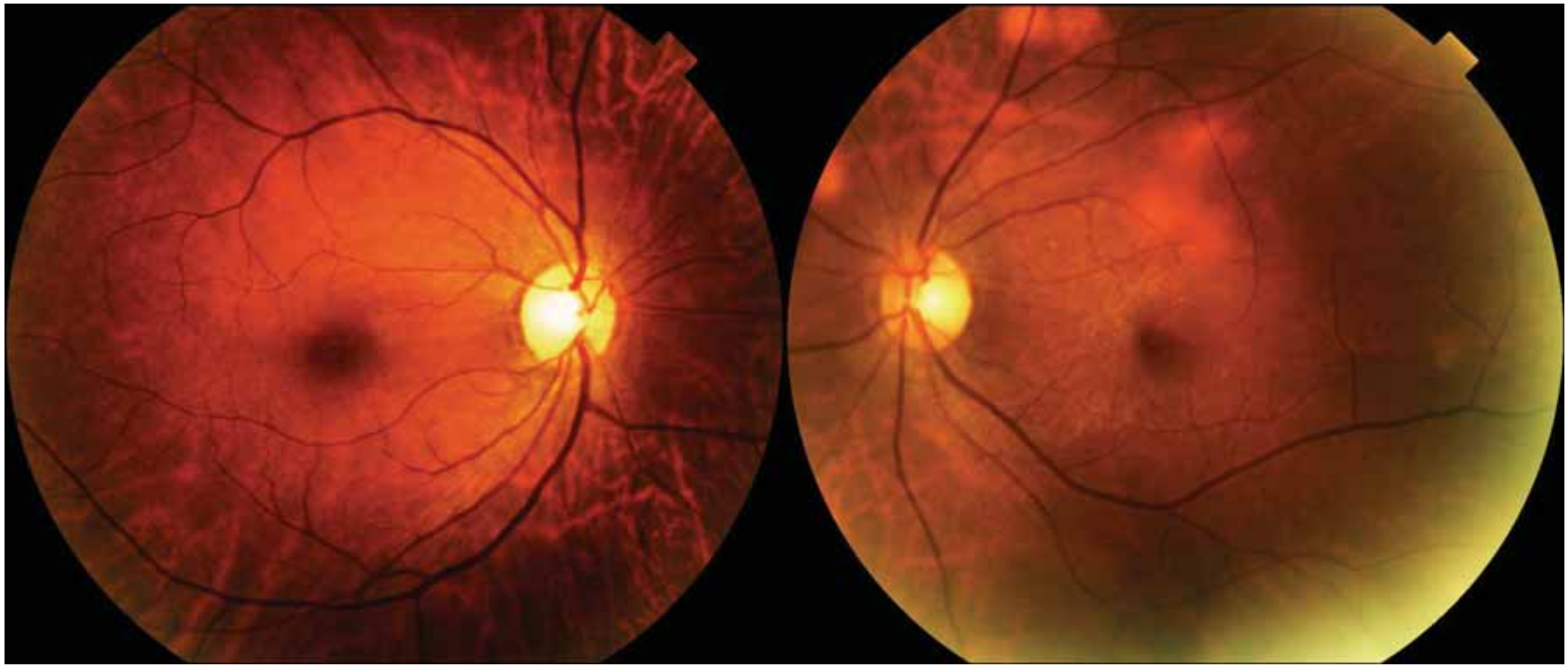
K: cl OD; few anterior stromal opacities,
(+)SPK, (+)fine KP
Corneal sensation OS<OD

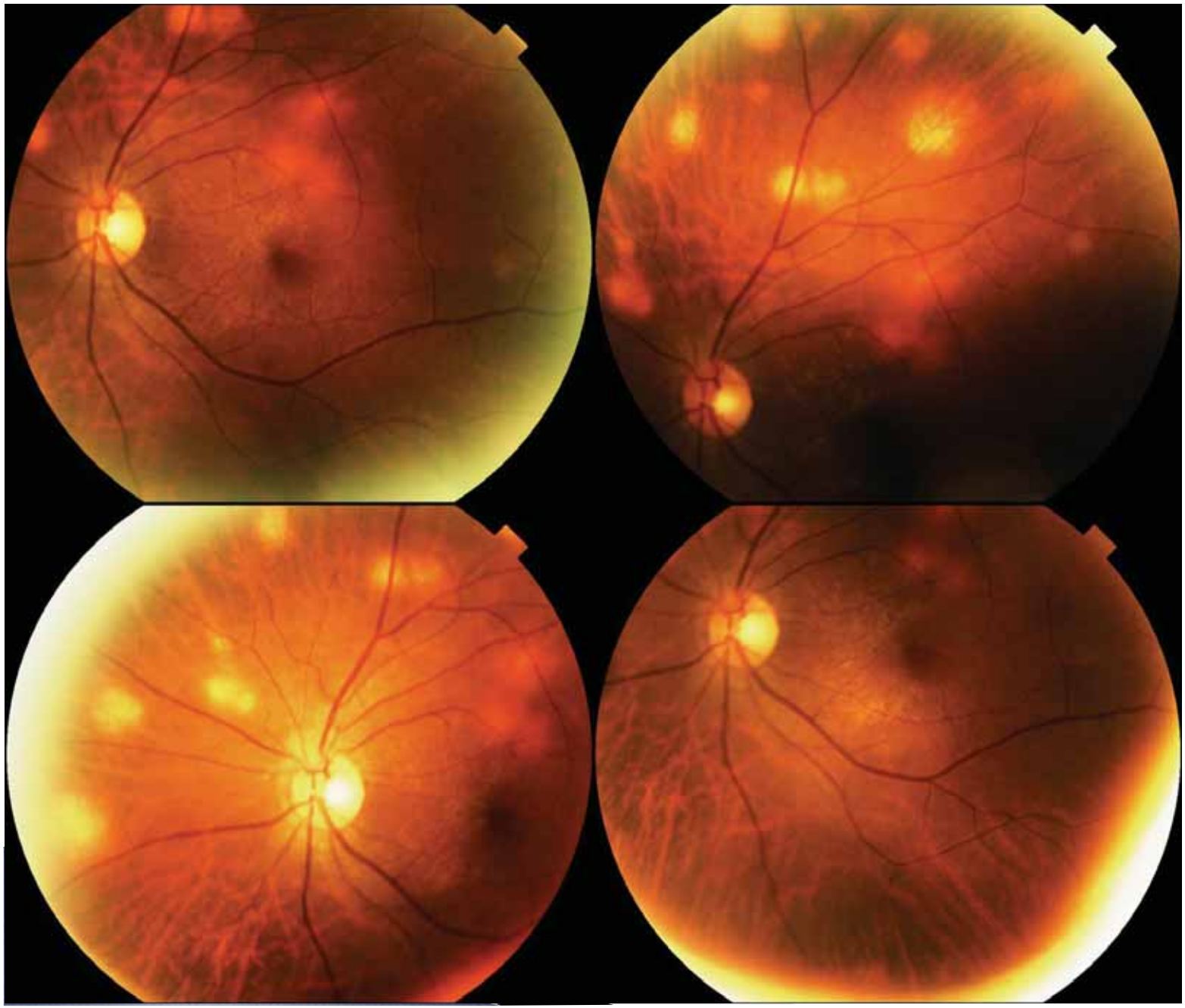
AC: dq OD; 2+ cell OS

I/P: round OU, no NVI OU

L: NS OU

Color Photos





Dilated Fundus Examination

Vit: cl OD, 1-2+ ant vitreous cell OS
Disc: p&s OU c/d: 0.3/0.3
Mac: see photos
V/P: see photos

Differential Diagnosis

- Presumed ocular histoplasmosis (POHS)
- Birdshot chorioretinopathy
- Punctate inner choroidopathy (PIC)
- Multiple evanescent white dot syndrome (MEWDS)
- Diffuse unilateral subacute neuroretinitis (DUSN)
- Multifocal choroiditis with panuveitis (MCP)
  - EBV
  - HSV
  - VZV
- Syphilis
- Lyme disease
- Sarcoidosis
- Tuberculosis
- Toxoplasmosis
- Lymphoma

What now?

- Laboratory work-up
- Fluorescein angiography
- Ocular coherence tomography
- Automated visual field
- Chest X-ray
- Aqueous sampling for analysis

Laboratory Work-up

CBC, BMP: WNL
FTA-Abs/RPR: neg
Lyme Ab: neg
EBV
- *VCA IgG: pos*
- VCA IgM: neg
- EA IgG: equivocal
- *NA IgG: pos*

HIV: negative
HLA-B27: neg
HLA-A29: neg
ACE: 20 (WNL)
Lysozyme: WNL
Calcium: WNL

HSV IgM: neg
HSV-1 IgG: detected
HSV-2 IgG: detected
VZV Ig: detected
CMV
- *IgG: detected*
- IgM: neg

Histo Ab: neg
Toxoplasma
- IgG: neg
- IgM: neg

PPD: negative
CXR: WNL

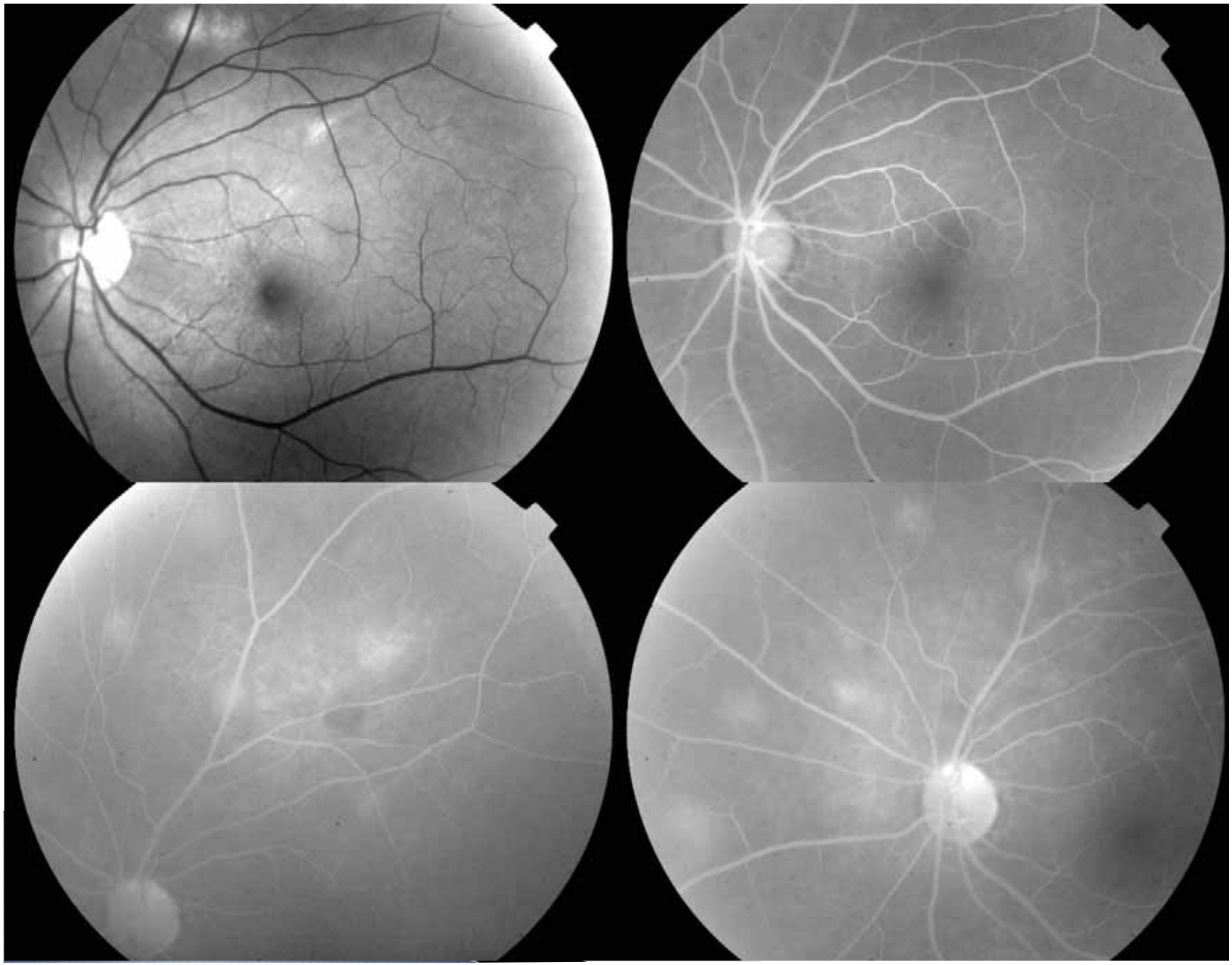
Work-up

Viral Culture from aqueous sample:
No virus detected

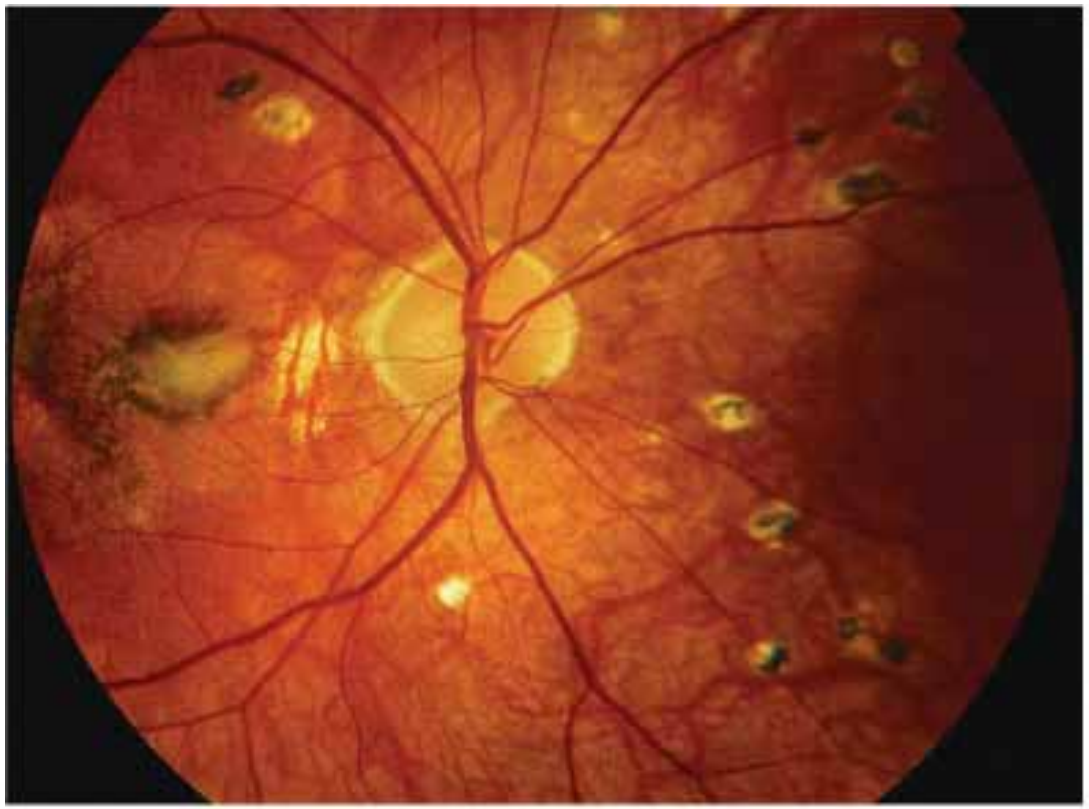
PCR of aqueous sample:
VZV: neg
HSV: neg
CMV: neg

HVF 24-2:
reliable OU
full OU

OCT Macula:
No subretinal lesions noted, no CME OU



Multifocal choroiditis with panuveitis (MCP)



Multifocal choroiditis with panuveitis

- 1973 – Novik and Dorsch – description of 2 pts with bilateral anterior uveitis with associated chorioretinopathy resembling POHS
- 1984 – Dreyer and Gass – series of 28 pts with uveitis and lesions at the level of the RPE and choriocapillaris, coined *multifocal choroiditis and panuveitis*
- 1985 – Deutsch and Tessler – 28 pts with similar presentation, called *inflammatory pseudohistoplasmosis*
- 1986 – Morgan and Schatz – series of 11 pts with similar condition, termed *recurrent multifocal choroiditis*

Epidemiology

- Predilection for myopic females
- Mean age is 30's to 50's
- Characteristically bilateral (45-79%), but may be asymmetric
- In the US, incidence of 52.4/100,000 people/ year

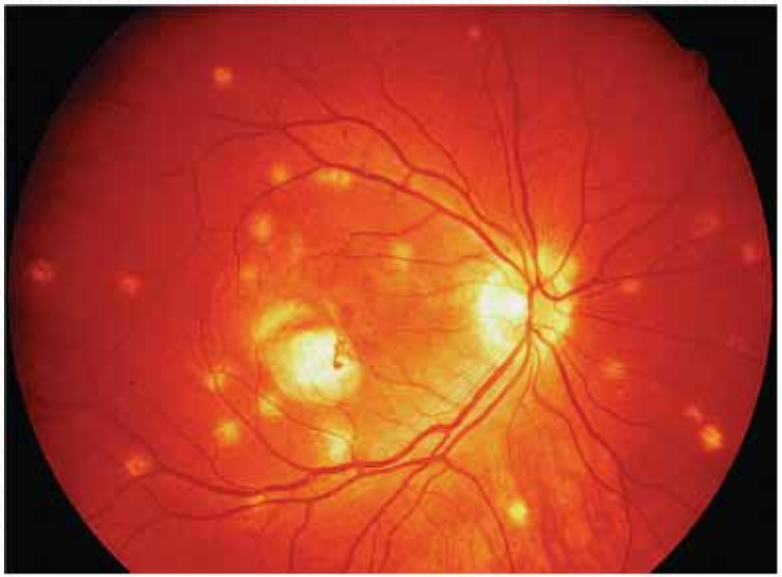
Clinical Manifestations

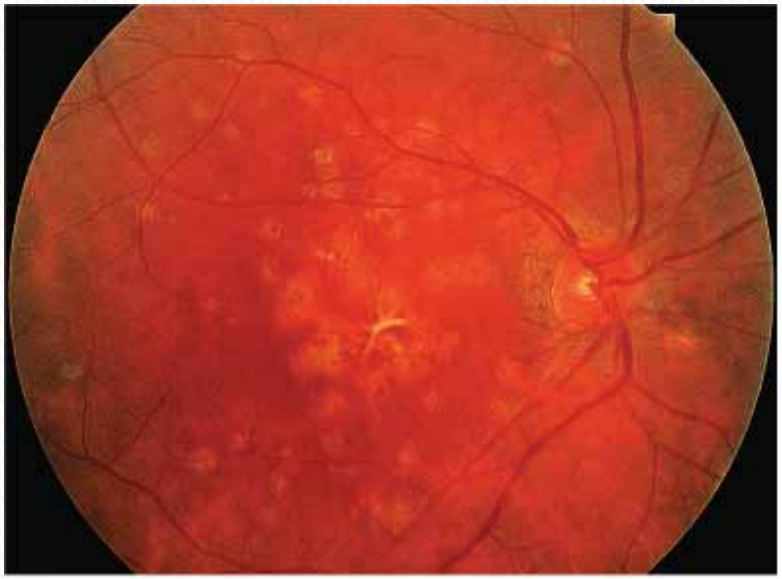
- Nongranulomatous anterior uveitis
- Vitritis – mild to moderate
- Chorioretinal lesions
  - Located at the level of the RPE and choriocapillaris
  - Generally range in size from 50 to 350 mm
  - May be singly dispersed, in clusters, in a linear arrangement
  - Lesions become atrophic with varying degrees of pigmentation and scarring

Clinical Manifestations

- Cystoid macular edema (10-20%)
- Choroidal neovascular membranes (CNVM)
  - Develop in 25-39% of pts
  - May be an *early manifestation*
  - Major cause of central vision loss in MCP, and most concerning complication
- Juxtapapillary scars

White Dot Syndromes



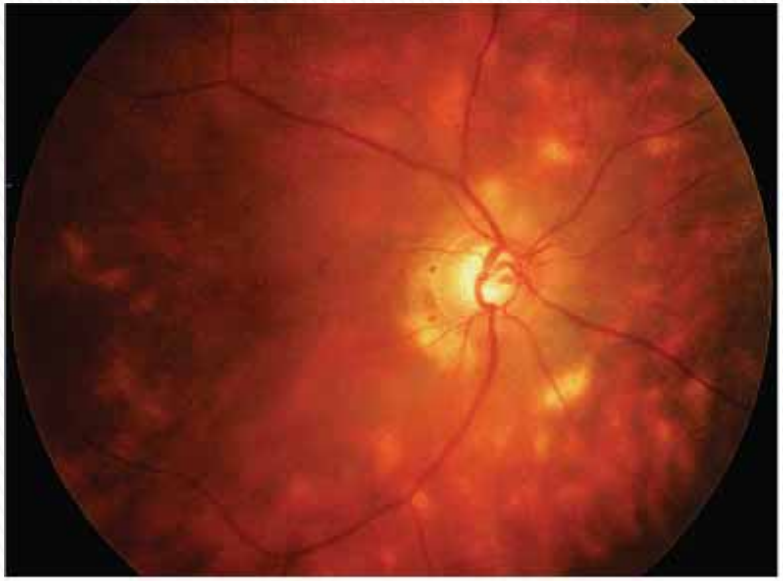


POHS

PIC

Medical Knowledge/Practice Based learning and improvement

White Dot Syndromes



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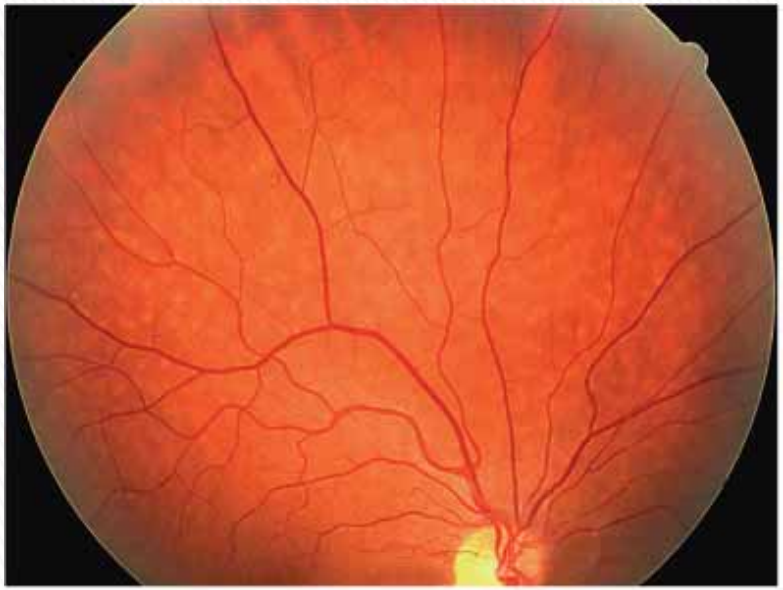

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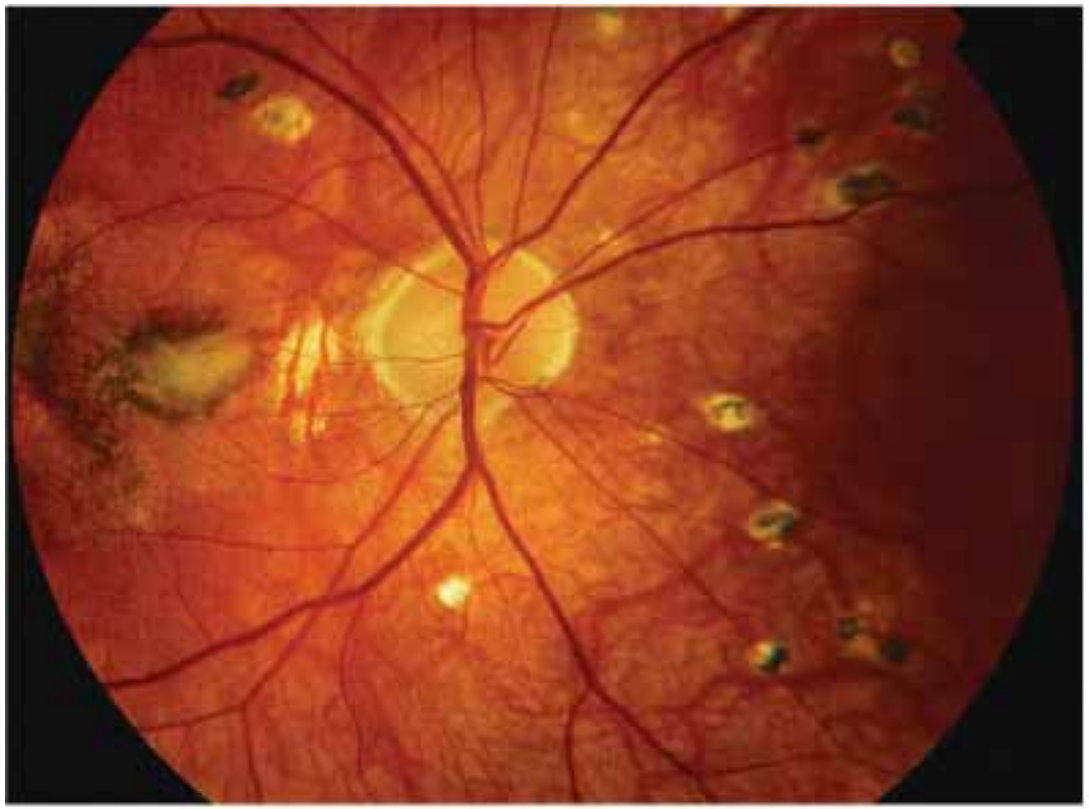
Birdshot chorioretinopathy

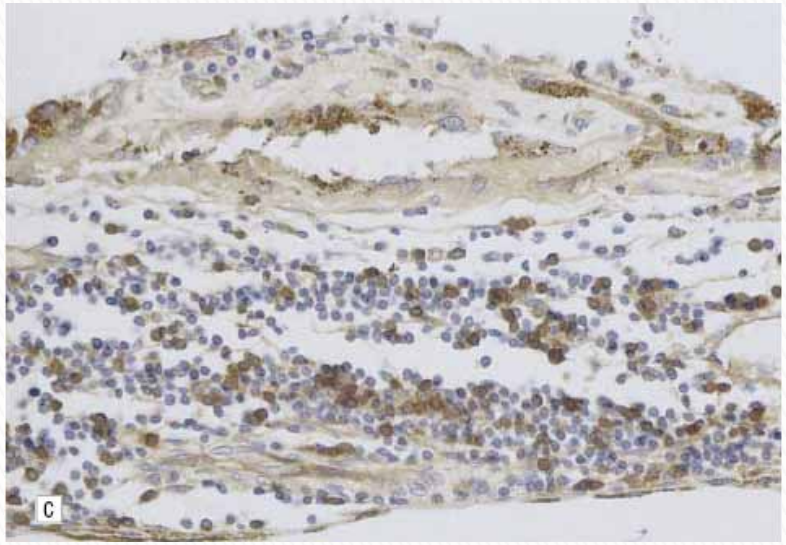
MEWDS

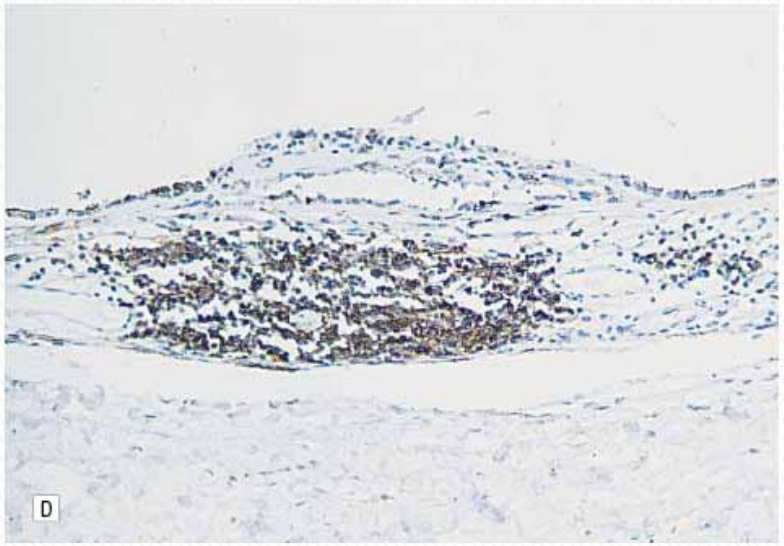
Medical Knowledge/Practice Based learning and improvement

Multifocal choroiditis with panuveitis (MCP)



Pathology





T Lymphocytes

B Lymphocytes

Medical Knowledge/Practice Based learning and improvement

Pathology

- Nongranulomatous perivascular choroidal infiltrates, mainly consisting of B lymphocytes
- Neovascularization occurs in areas of the greatest accumulation of lymphocytes

(Dunlop A, Cree I, Hague S, Luthert P, Lightman S. Multifocal choroiditis: Clinicopathologic correlation. Arch Ophthalmol. 1998; 116:801-803.)

Etiology

- EBV
  - Studies show contradicting results
- VZV
- HSV

- The belief is that MCP is related to a past exposure to an exogenous pathogen, i.e. infectious organism
- The phenotypic presentation of the condition is a result of the pt's immune diathesis, in the presence or absence of the inciting event

Herpes Viruses in MCP

- Prior study found antibodies specific to VZV and HSV in aqueous samples found in pts diagnosed with MCP
  - ELISA was performed on aqueous samples
- Pts were treated with acyclovir and systemic corticosteroids

(Frau E, Dussaix E, Offret H, Bloch-Michel Etienne. The possible role of herpes viruses in multifocal choroiditis and panuveitis. International Ophthalmology 14:365-369,1990.)

Treatment

Best treatment regimen has not yet been established

- Periocular or systemic corticosteroids
- Systemic immunosuppressive drugs
  - Studies suggest that Va outcomes may be improved, particularly with overall reduction in posterior pole complications by 83%
  - Limits the number of recurrences of CNVM in eyes with prior existing CNVM
  - Uncertainty of role in preventing CNVM formation in eyes without prior existing CNVM

(Thorne J, Wittenberg S, Jabs D, Peters G, Reed T, Kedhar S, Dunn J. Multifocal choroiditis with panuveitis: Incidence of ocular complications and loss of visual acuity. Ophthalmology 2006;113:2310-2316.)

Treatment

- Intravitreal injection of anti-VEGF medications for the treatment of CNVM's
  - A small series found improved Va over a 6 mo follow-up period, with qualitative decrease in clinical and angiographic evidence of CNV in pts with MCP

(Fine HF, Zhitomirsky I, Freund KB, Barile GR, Shirkey BL, Samson CM, Yannuzzi LA. Bevacizumab (avastin) and ranibizumab (lucentis) for choroidal neovascularization in multifocal choroiditis. Retina 2009 Jan:29(1) :8-12.)

Course and Prognosis

- Chronic and progressive disorder
- Recurrent bouts of inflammation
- Visual prognosis is guarded
  - 1/3 of patients develop CNVM's

Our patient

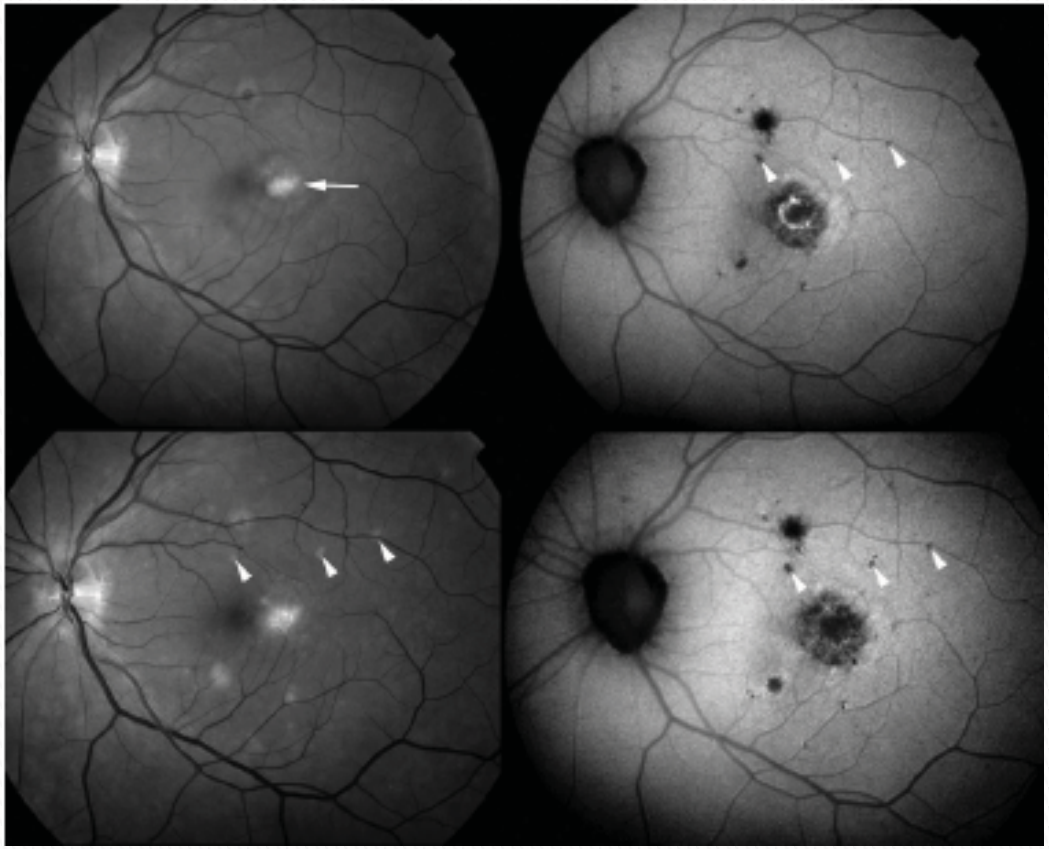
- Acyclovir 800mg PO 5 times daily for 14 days
- Pred Forte q1h OS until inflammation under control, followed by a slow taper
- Cyclogyl TID OS

- Resolution of episode after completing treatment
- No noted CNVM to this point

Fundus Autofluorescence

- All chorioretinal scars noted on ophthalmoscopic examination are visible on autofluorescence photography
  - Noted as hypoautofluorescent spots
- More hypoautofluorescent abnormalities found than seen on ophthalmoscopic examination, in pts with MCP

(Haen S, Spaide R. Fundus autofluorescence in multifocal choroiditis and panuveitis. Am J Ophthalmol 2008; 145:847-853.)

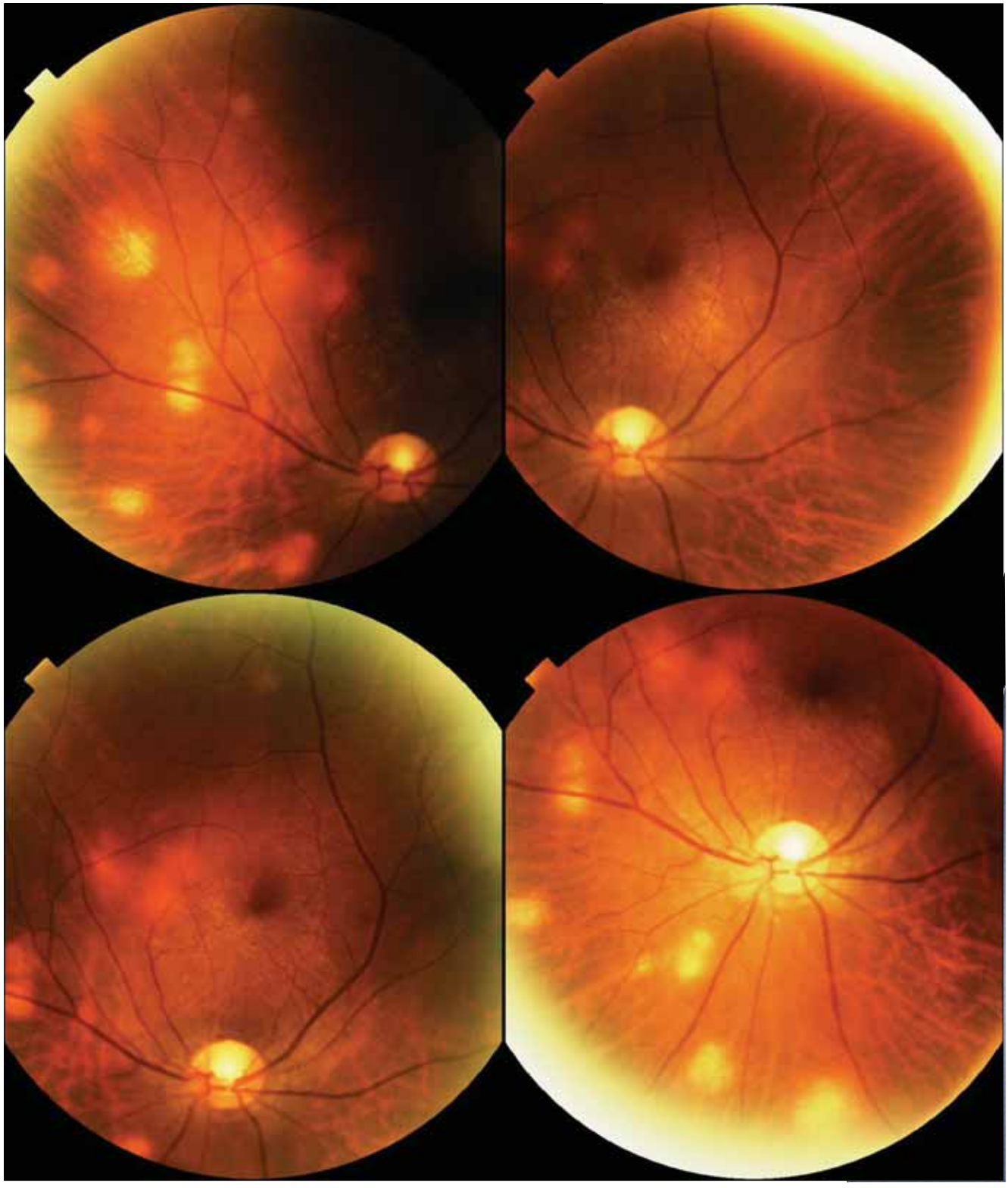


Slight expansion of hypoautofluorescent spots

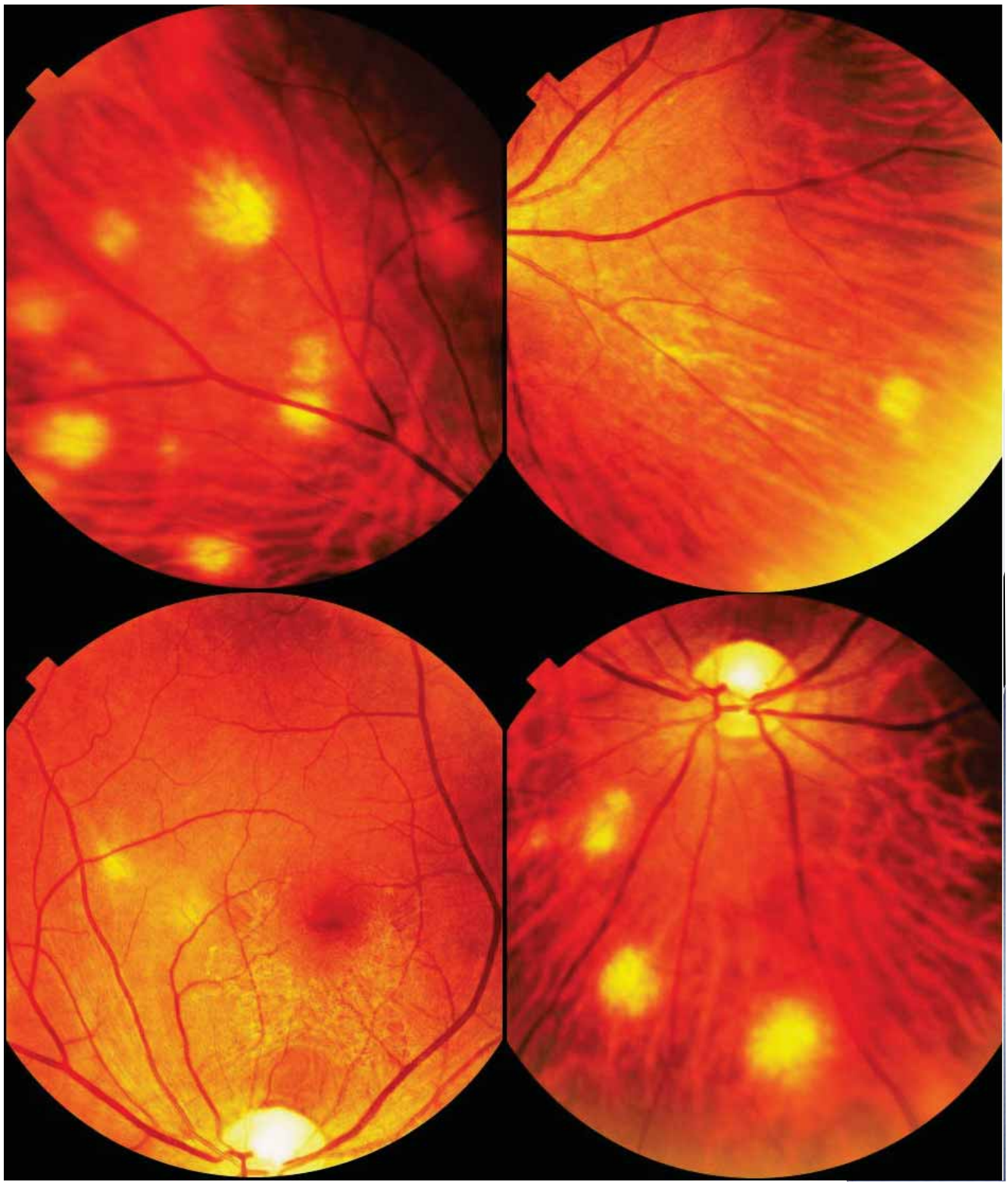
Imaging of new and/or enlarging spots, which makes AF a potential tool for diagnostic purposes as well as serial follow-up of pts with MCP

Medical Knowledge/Practice Based learning and improvement

On Presentation



Color Photo 1 mo later



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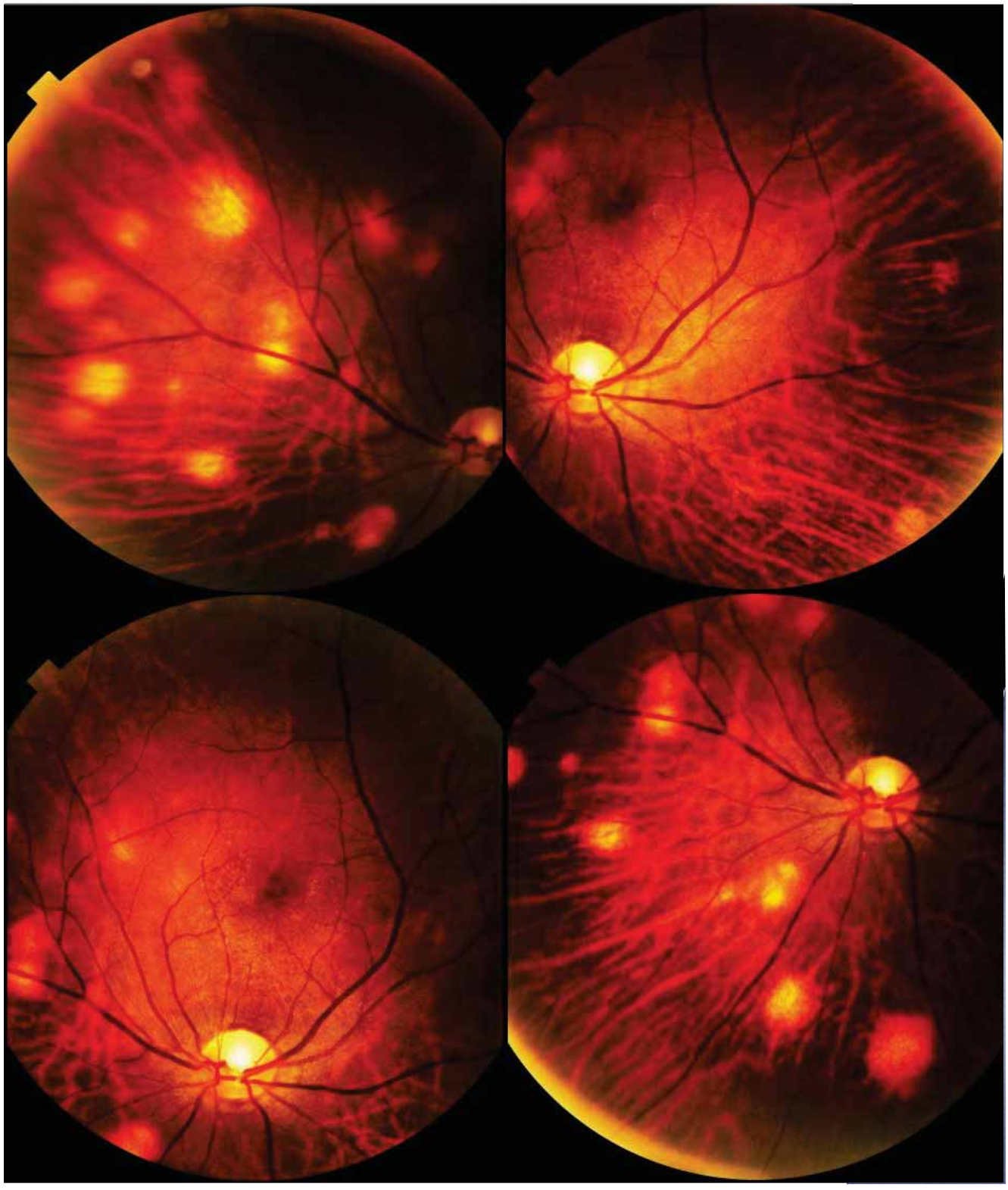

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BCSC Retina and Vitreous 2007-2008, Section 12

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Reflective Practice

- Based on strong clinical suspicion, the pt was treated with corticosteroids and anti-viral medication, with resolution of her initial episode of MCP.
- Perhaps earlier aqueous sampling may have yielded more information.
- Pt requires close monitoring for evidence of recurrence and complications, i.e. choroidal neovascularization.

Thank you!

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