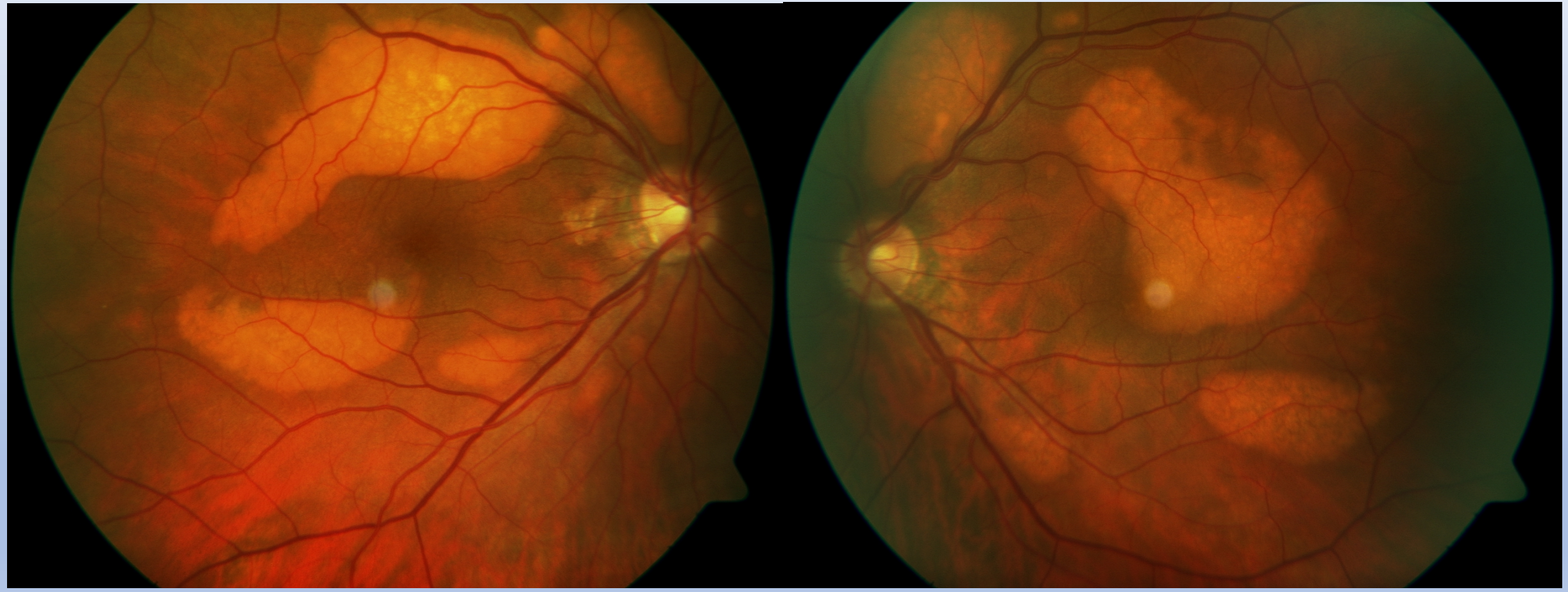
AAO 2019 Course 630
Cases with a Point
SEP Case 2

Scott E. Pautler, MD

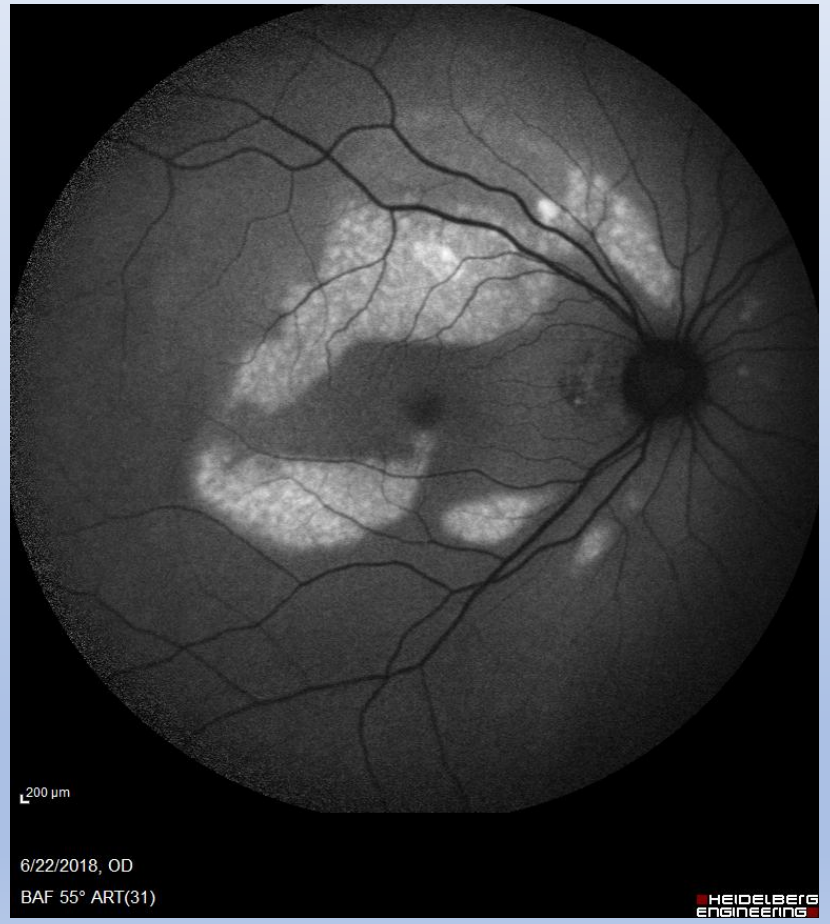
Tampa, FL

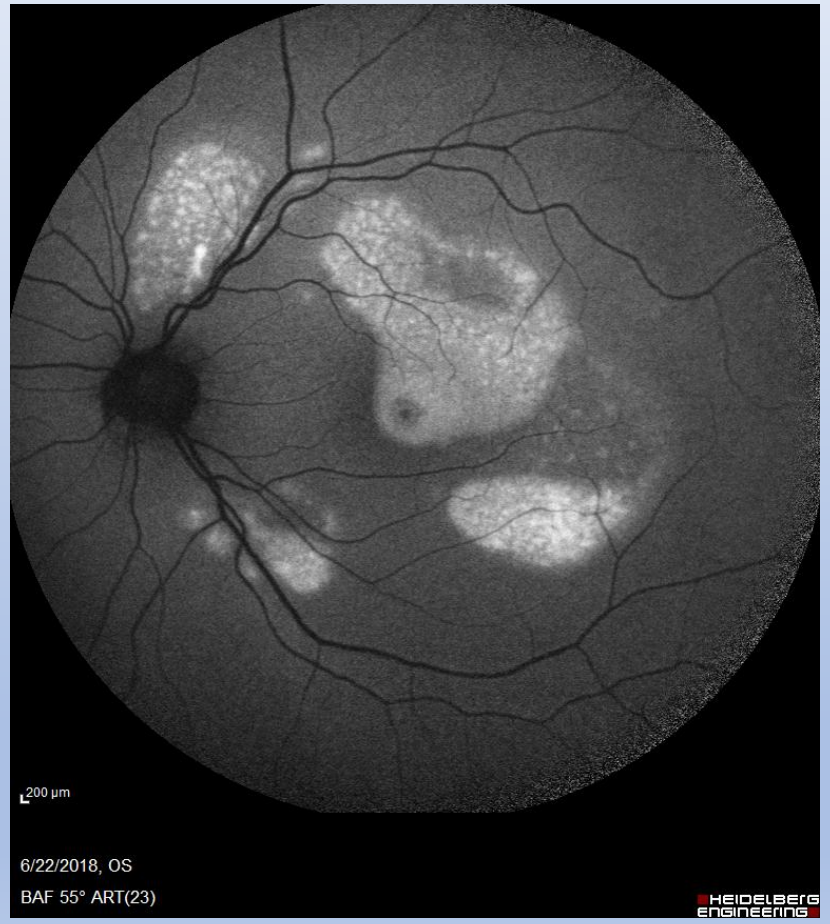
Case Presentation

- 58yo WF with blurred vision OU and history of atypical CSR
- Unremarkable ROS, social, medical, and family history
- Va 20/25 J2 OD, 20/30 J3 OS
- Normal pupils, versions, and fields
- Trace nuclear sclerosis
- See fundus images

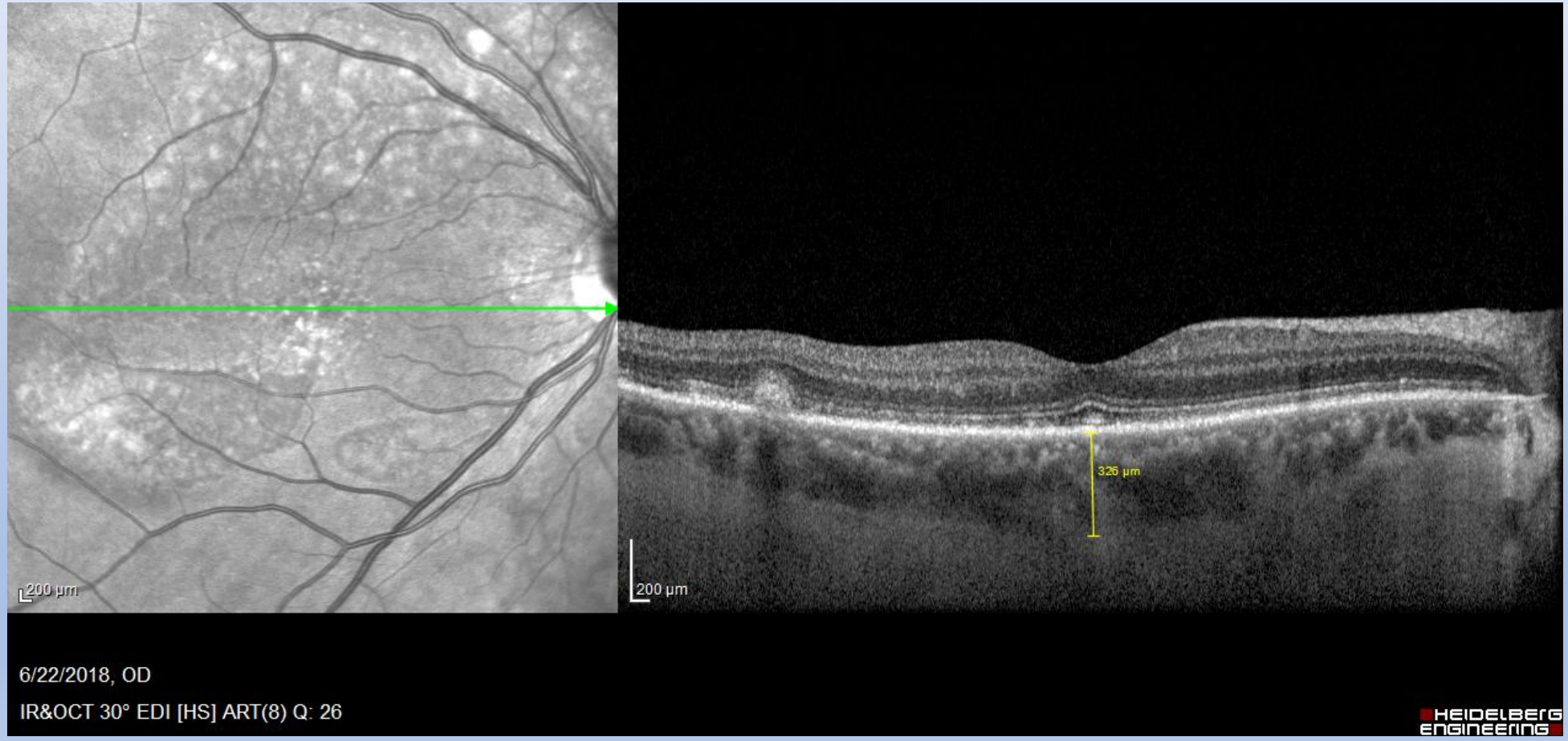


FAF

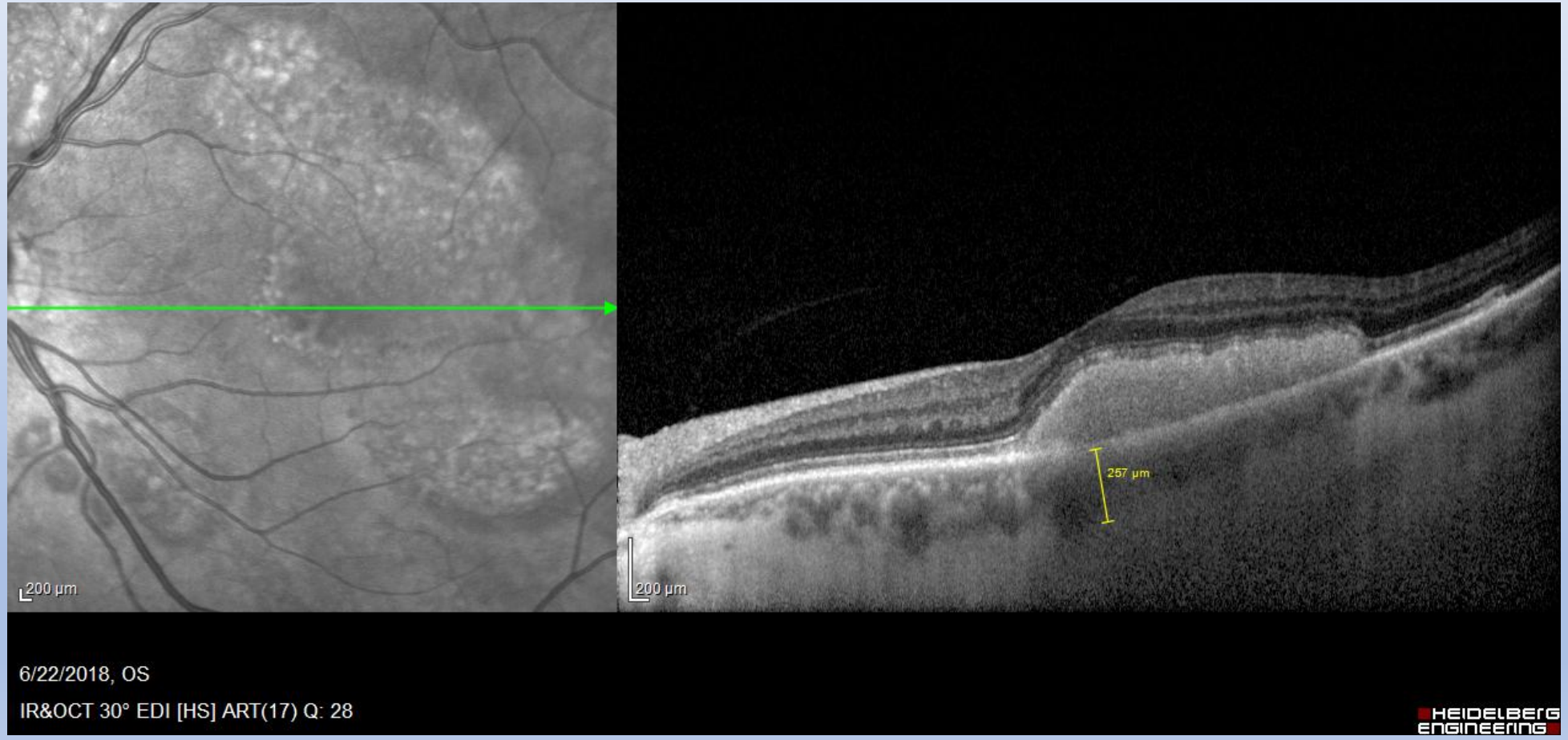

200 µm
6/22/2018, OD
BAF 55° ART(31)
HEIDELBERG ENGINEERING

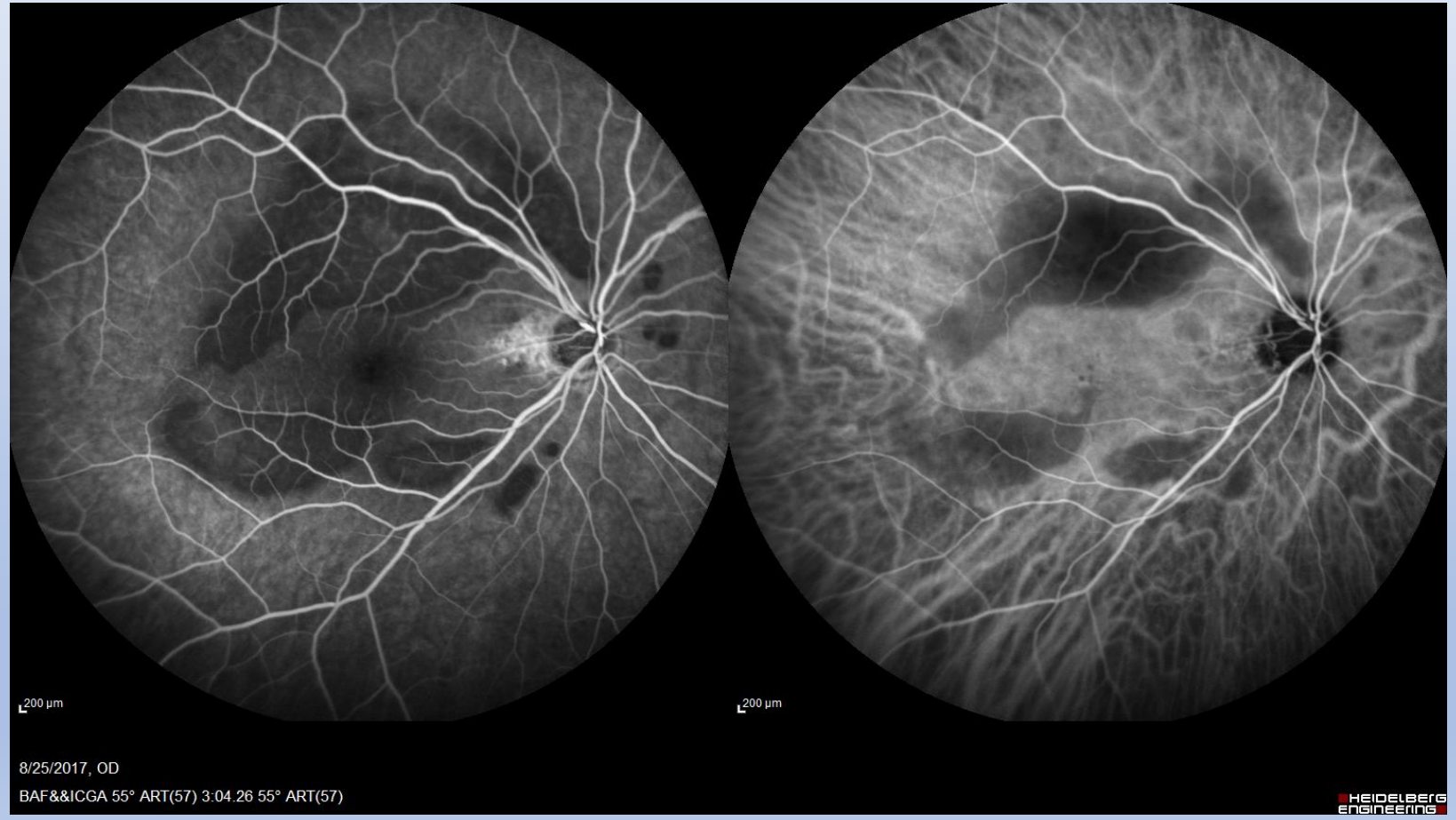

200 µm
6/22/2018, OS
BAF 55° ART(23)
HEIDELBERG ENGINEERING

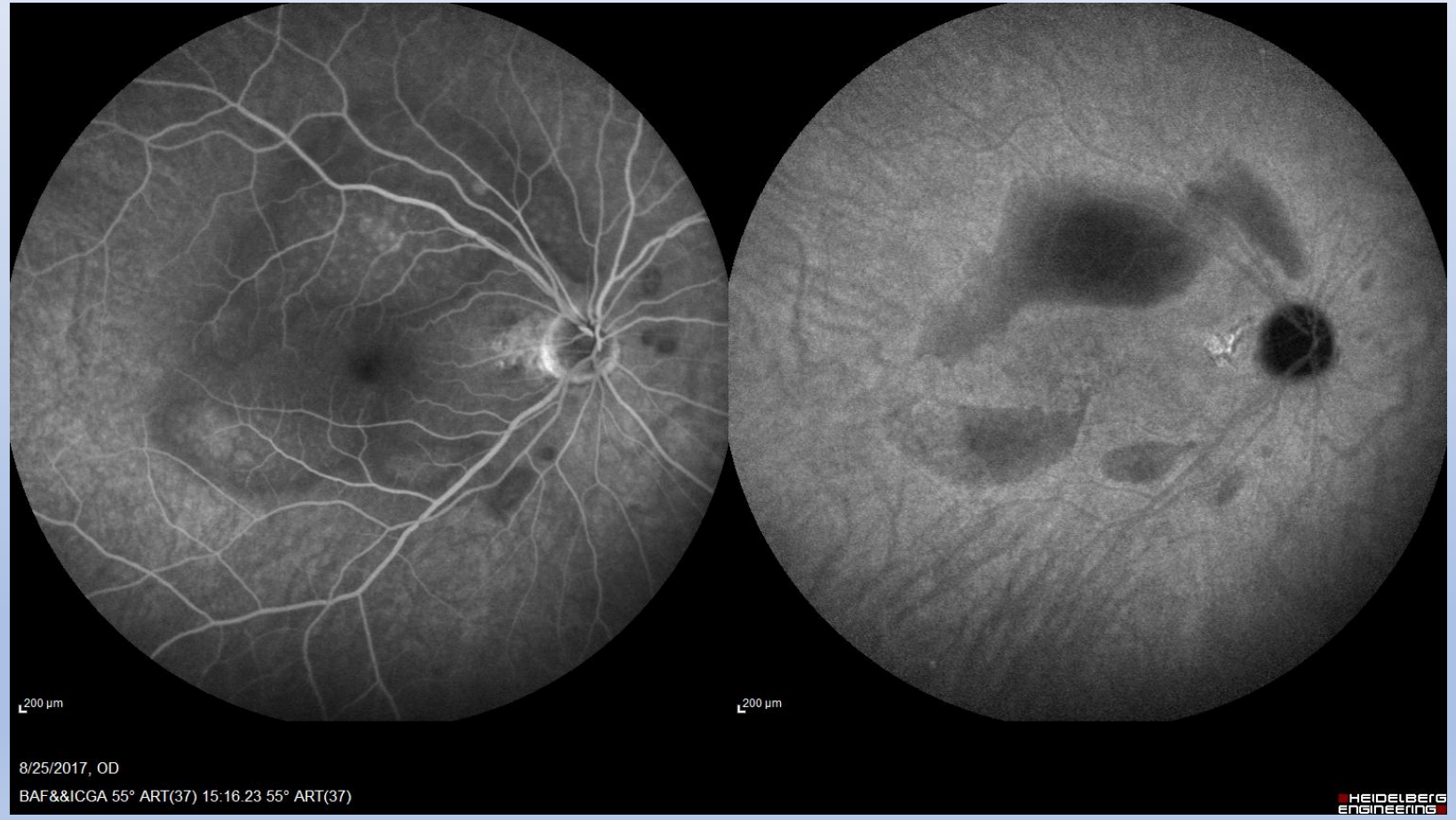
SD-OCT

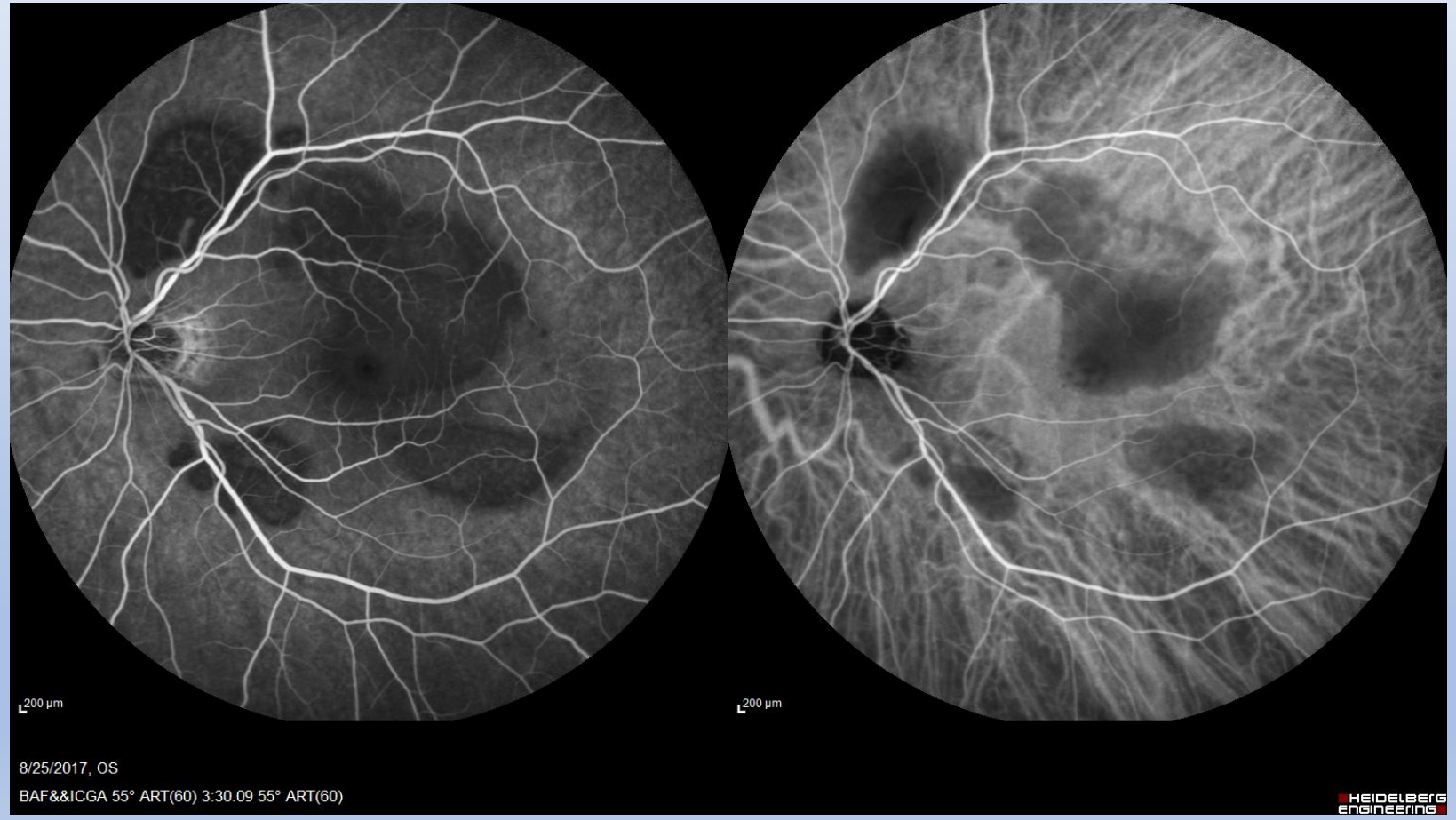

200 µm
326 µm
200 µm
6/22/2018, OD
IR&OCT 30° EDI [HS] ART(8) Q: 26
HEIDELBERG ENGINEERING

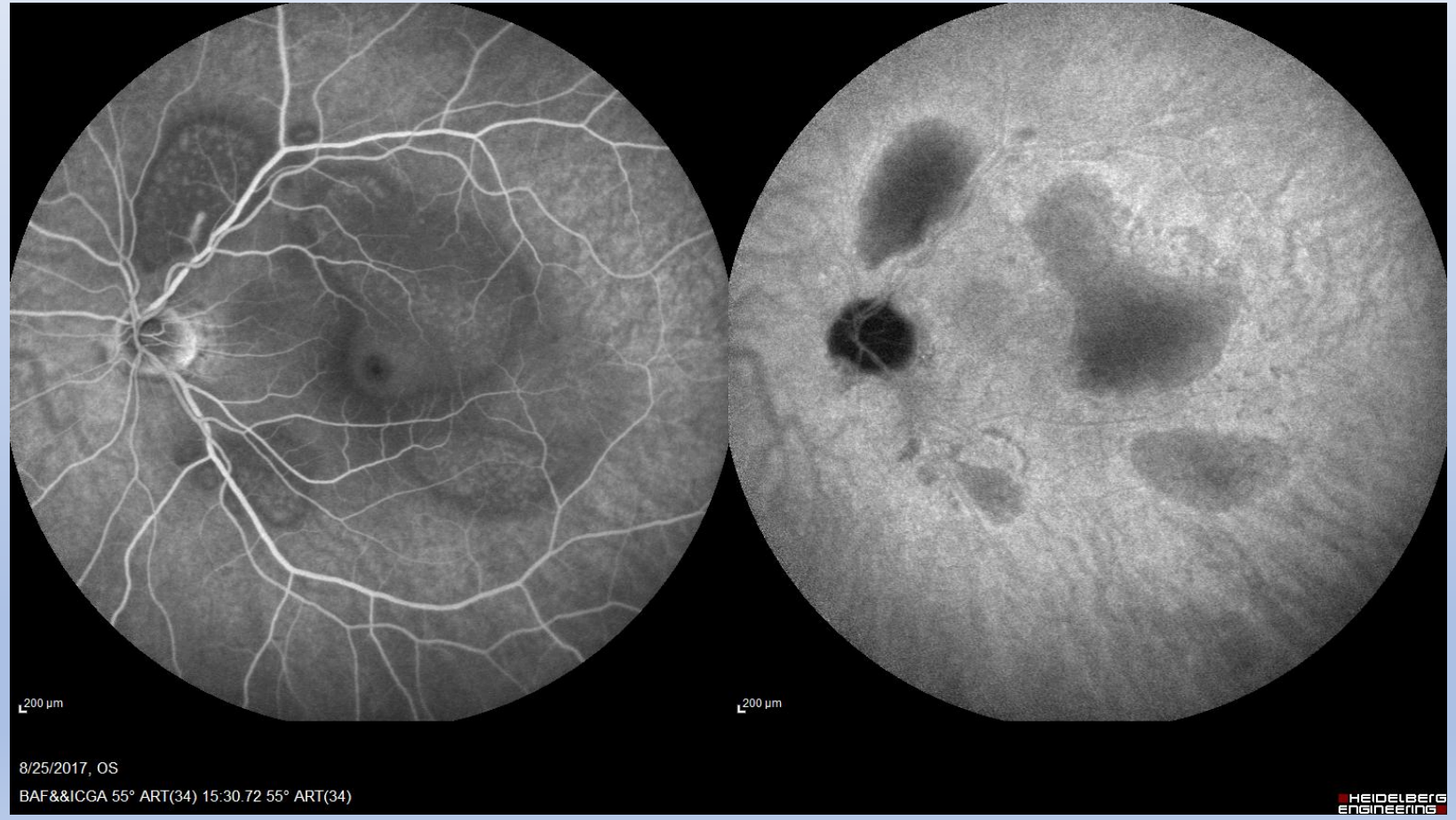
SD-OCT


200 µm
257 µm
200 µm
6/22/2018, OS
IR&OCT 30° EDI [HS] ART(17) Q: 28
HEIDELBERG ENGINEERING


200 µm
200 µm
8/25/2017, OD
BAF&&ICGA 55° ART(57) 3:04.26 55° ART(57)
HEIDELBERG ENGINEERING


200 µm
200 µm
8/25/2017, OD
BAF&&ICGA 55° ART(37) 15:16.23 55° ART(37)
HEIDELBERG ENGINEERING


200 µm
200 µm
8/25/2017, OS
BAF&&ICGA 55° ART(60) 3:30.09 55° ART(60)
HEIDELBERG ENGINEERING


200 µm
200 µm
8/25/2017, OS
BAF&&ICGA 55° ART(34) 15:30.72 55° ART(34)
HEIDELBERG ENGINEERING

Diagnosis and Management?

Acute Exudative Polymorphous Vitelliform Maculopathy

- Often presents with atypical bilateral central serous chorioretinopathy
- Vitelliform deposits develop later
- Occasional viral prodrome (~50%)
- Two presentations:
  - honeycomb appearance
  - Vitelliform lesions

Differential Diagnosis

- Autosomal Recessive Bestrophinopathy
- Paraneoplastic polymorphous vitelliform maculopathy
- Anti-Cancer therapy
  - MEK inhibitors (multifocal CSR-like presentation->vitelliform)
  - Immune check point inhibitors (immune-mediated adverse effects)

- Others: Pattern dystrophies, cuticular drusen, CSR, vitreomacular traction, MacTel, pseudoxanthoma elasticum, subretinal drusenoid deposits, myotonic dystrophy, Sjogren-Larsson syndrome, McArdle's syndrome, Lyme disease

Autosomal Recessive Bestrophinopathy

- Bi-allelic BEST1 (formerly BVMD2) mutations
- Multifocal vitelliform lesions
- Usually present in first two decades of life

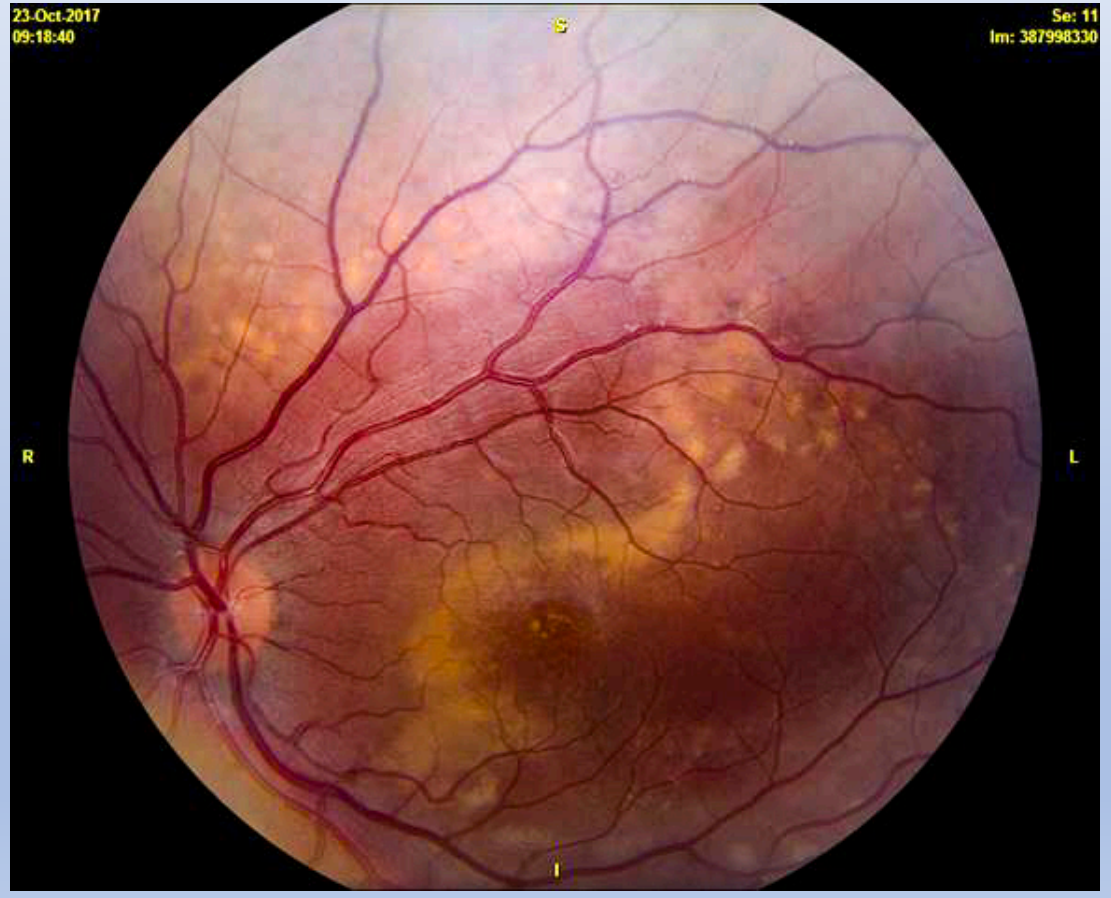
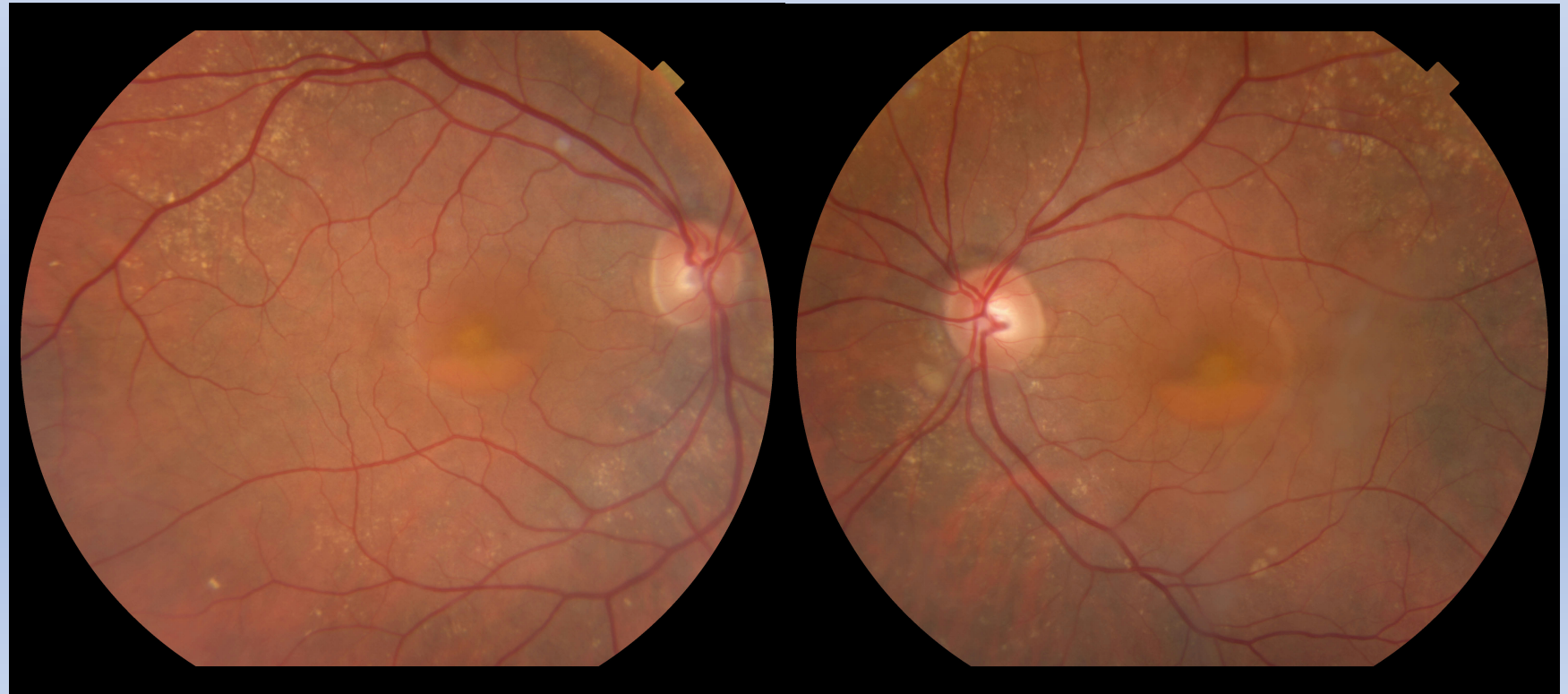


Image courtesy of Jose Pulido, MD

Paraneoplastic polymorphous vitelliform maculopathy

- Reported in cutaneous melanoma, breast cancer, choroidal melanoma, primary vitreoretinal lymphoma
- Anti-RPE Autoantibodies

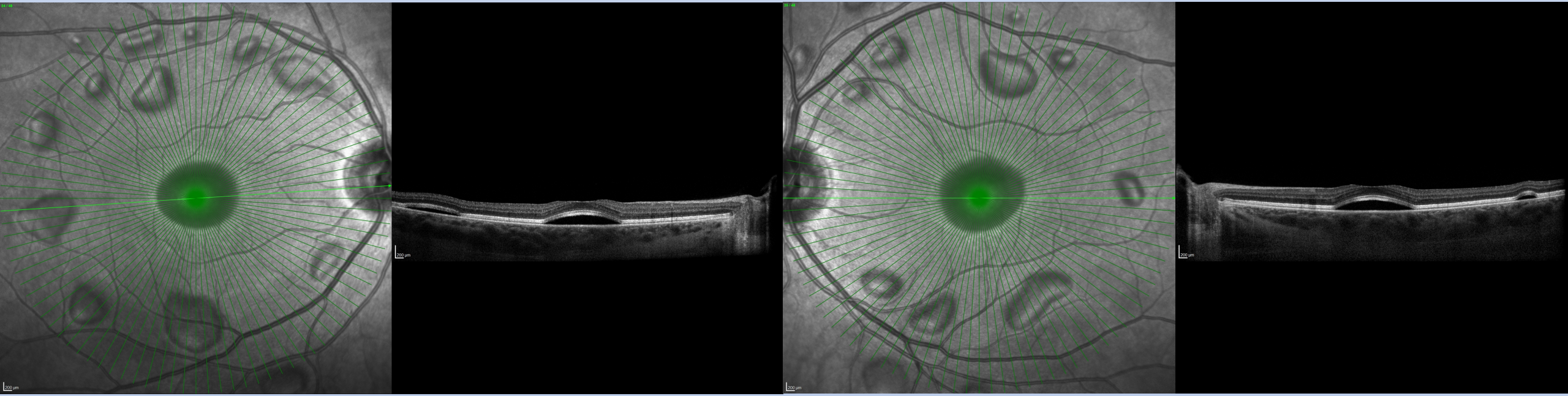
Images courtesy of
Netan Choudhry, MD



Mitogen/Extracellular Signal-Regulated Kinase (MEK) inhibitor toxicity

- Bilateral multifocal serous detachments
- Vitelliform lesions may occur resembling AEPVM

Images courtesy of Riccardo Sacconi, MD and Giuseppe Querques, MD



Immune Checkpoint Inhibitors

- Treatment of cutaneous melanoma associated with immune-mediated adverse effects and related paraneoplastic syndromes
  - Uveitis
  - Melanoma-associated retinopathy (MAR)
  - Paraneoplastic polymorphous vitelliform maculopathy (PPVM)

Points of the Case

- Acute Exudative Polymorphous Vitelliform Maculopathy (AEPVM) presents as atypical bilateral multifocal central serous chorioretinopathy
- Acute Exudative Polymorphous Vitelliform Maculopathy must be differentiated from paraneoplastic polymorphous vitelliform maculopathy by ruling out underlying cancer
- Multifocal vitelliform bestrophinopathy (AR) may be considered especially in younger patients
- MEK inhibitors and immune checkpoint inhibitor therapy for cancer may present with a similar picture

Thank You

Scott E. Pautler, MD

Tampa, FL

AAO 2019 Cases with a Point
Scott E. Pautler, MD
Tampa, FL

Case 2
Acute Exudative Polymorphous Vitelliform Maculopathy (AEPVM)

Acute Exudative Polymorphous Vitelliform Maculopathy (AEPVM) is a rare, bilateral, moderately symmetric, multifocal condition affecting the posterior pole described by Gass.[1] It begins with multifocal serous neurosensory detachments with blurred vision. A few months after onset, a honeycomb pattern of bleb-like lesions may develop along the arcades. A yellow-white deposit accumulates within the serous detachments with gradual resolution of subretinal fluid within a few months. The solid material resorbs over months to years. Sometimes, residual damage in the retinal pigment epithelium remains. Recurrences have been reported. Rarely, choroidal neovascularization may occur.[2]

Bestrophinopathy may simulate AEPVM. Various mutations in the BEST1 gene produce at least five different phenotypical presentations: 1.) autosomal dominant Best disease, 2.) autosomal recessive bestrophinopathy, 3.) adult-onset foveomacular dystrophy, 4.) autosomal dominant vitreoretinochoroidal dystrophy (ADVRC), and 5.) retinitis pigmentosa. Of these phenotypes multifocal dominant Best disease may remotely resemble AEPVM. However, autosomal recessive bestrophinopathy (ARB) may appear indistinguishable from AEPVM. ARB usually presents within the first two decades of life as opposed to the later onset of AEPVM in most patients. Younger patients with AEPVM may be tested to rule out BEST1 mutations.[3]

Paraneoplastic exudative polymorphous vitelliform maculopathy (PEPVM) presents like AEPVM. PEPVM is associated with cancers including cutaneous melanoma, choroidal melanoma, breast cancer, and primary vitreoretinal lymphoma. Therefore, a meticulous search for cancer is necessary in the evaluation of patients presenting with AEPVM. Paraneoplastic PVM appears to be associated with autoantibodies against the retinal pigment epithelium (RPE).[4] This finding provides another link to dysfunctional RPE as a potential etiology of AEPVM.

Anti-cancer treatment itself may induce retinal findings suggestive of AEPVM. MEK inhibitors may cause bilateral multifocal serous macular detachments, sometimes with vitelliform lesions similar to AEPVM.[5] Immune checkpoint inhibitors have recently been implicated as potential factor in the presentation of polymorphous vitelliform maculopathy during cancer therapy.[6,7] Perhaps unleashing the immune system to fight cancer may also increase the anti-RPE antibodies and/or other immune mechanisms that cause PEPVM.

References

1.) Gass et al. Acute Exudative Polymorphous Vitelliform Maculopathy. Trans Am Ophthalmol Soc 1988; 86:354-366.
2.) Barbazetto et al. Acute Exudative Polymorphous Vitelliform Maculopathy: Clinical spectrum and multimodal imaging characterisitics. Ophthalmol 2018: 125:75-88.
3.) Johnson et al. Bestrophin 1 and retinal disease. Prog Ret Eye Res 2017; 58:45-69.
4.) Dalvin et al. Nonantibestrophin anti-RPE antibodies in paraneoplastic exudative polymorphous maculopathy. Transl Vis Sci Technol 2015; 4:2.
5.) Giuffre et al. Central serous chorioretinopathylike mimicking multifocal vitelliform macular dystrophy: An ocular side effect of mitogen/extracellular signal-regulated kinase inhibitors. Retin Cases Brief Rep 2018: 12:172-176.
6.) Sandu et al. Vemarafenib and pembrolizumab treatment for metastatic melanoma. Retin Cases Brief Rep 2019; 13:103-107.
7.) Cebulla etal. Bilateral choroidopathy and serous retinal detachments during ipilimumab treatment for cutaneous melanoma. JAMA Ophthalmol 2015;133:965-967.