



Outer retinal defects in pachychoroid pigment epitheliopathy

August 2020

Vaidehi S. Dedania, MD
Assistant Professor of Ophthalmology
Adult and Pediatric Vitreoretinal Surgery
NYU School of Medicine
NYU Langone Health



- Allergan: Advisory board
- Alimera: Advisory board
- Regeneron: Advisory board

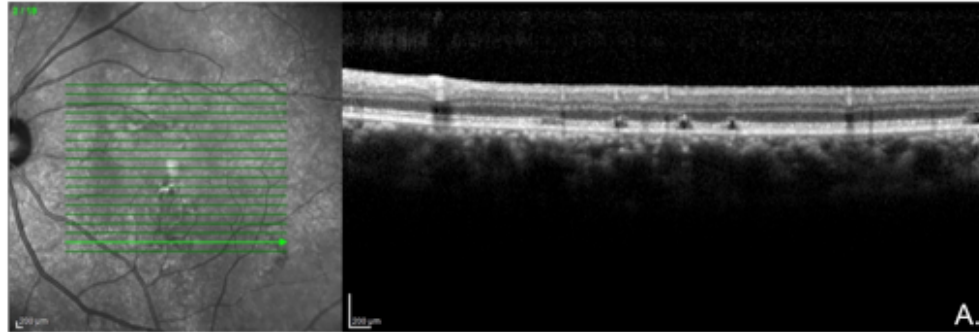


Summary

This is a case series of 11 eyes of 8 patients with outer retinal defects in the setting of pachychoroid pigment epitheliopathy. Patients demonstrated focal outer retinal defects (EZ +/- IZ), with an intact RPE. Patients maintained good visual acuity and the defects were stable in patients with long-term follow-up.

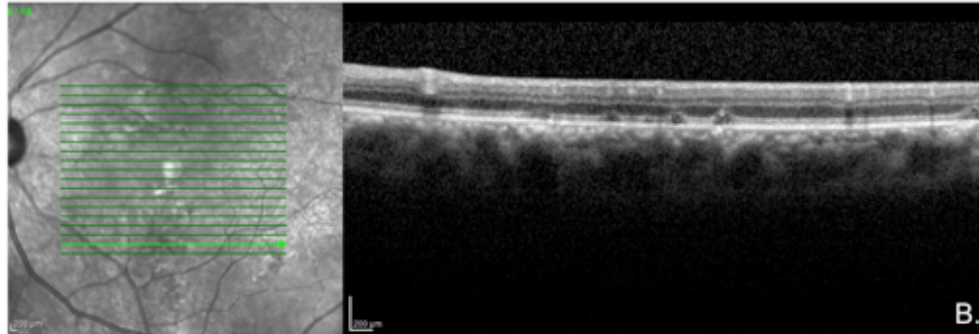
At presentation

20/20



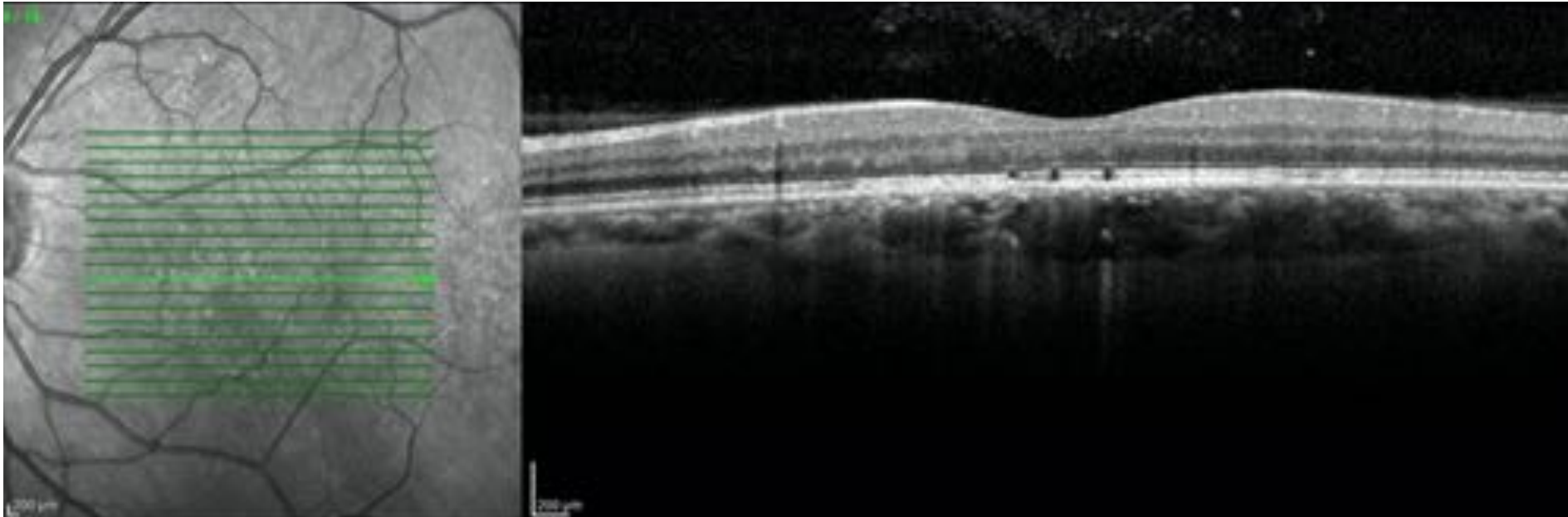
9 months later

20/20





- **Purpose:** To describe unique outer retinal defects in patients with pachychoroid pigment epitheliopathy.





- **Study design:** prospective, observational case series of patients examined between October 2017 and January 2020 at a single center (New York University)
- **Evaluation performed:** comprehensive ophthalmologic examination and imaging: enhanced depth imaging-OCT (Heidelberg Spectralis), fluorescein angiography, OCT-angiography (Zeiss)



- **Inclusion criteria:** presence of pachychoroid vessels or choroidal thickness ≥ 390 μm on EDI-OCT, outer retinal disruption of the EZ and/or IZ on SD-OCT, pigmentary changes on fundus examination history of or concurrent IRF or SRF on OCT
- **Exclusion criteria:** history of or concurrent IRF or SRF or serous PED on OCT, choroidal neovascularization, typical AMD and macular telangiectasia Type 2.

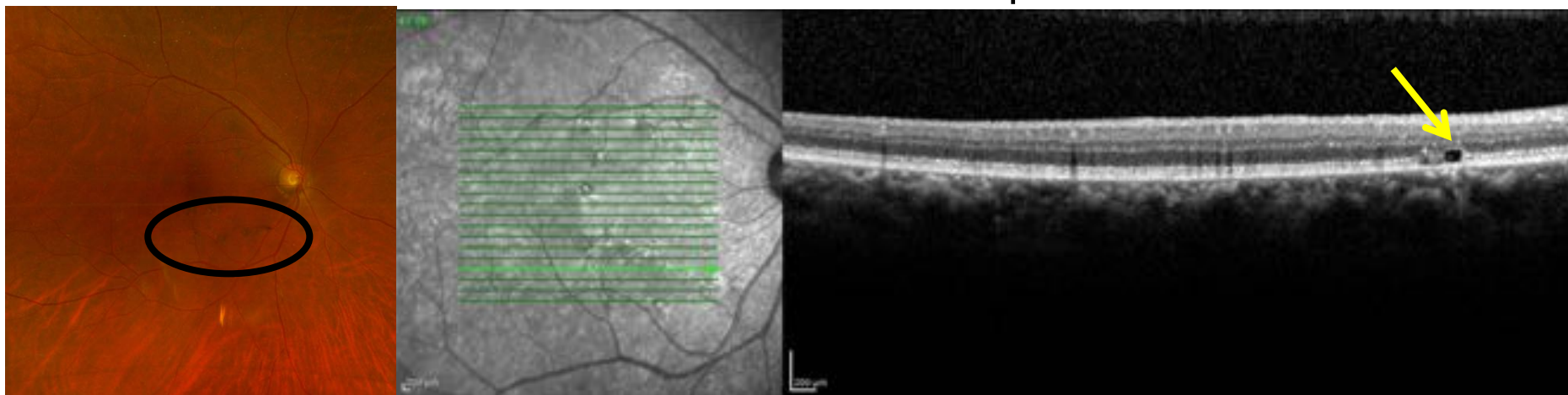


- 11 eyes of 8 patients
- Gender: 3 female and 5 male
- Mean age: 61.38 years (range 48 – 71)
- Co-morbid conditions
 - Diabetes mellitus type 2: 4 patients
 - 3 eyes with diabetic retinopathy
 - 3 eyes without diabetic retinopathy
 - Hypertension: 4
 - Obstructive sleep apnea: 3
- Mean follow-up: 12.75 months*

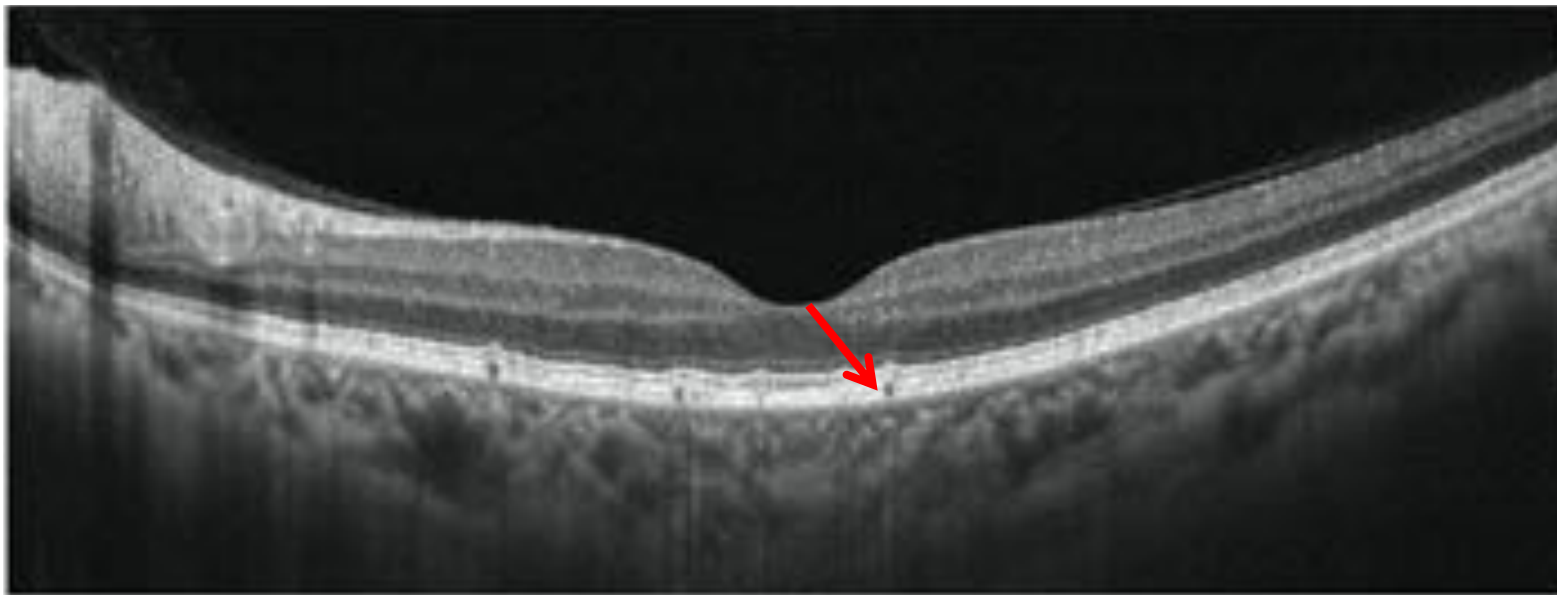


- Mean subfoveal choroidal thickness: $481 \pm 104 \mu\text{m}$ (range 320 – 699)
- Mean BCVA: LogMAR 0.14 (approximately Snellen 20/30)
- Foveal involvement: 6 eyes
- Dilated choroidal vessels immediately underlying focal disruption: 4 eyes
- OCT findings:
 - EZ/IZ disruption: 10 eyes
 - IZ disruption only: 1
 - Pachyvessel underlying defect: 4
 - Overlying ELM hyper-reflectivity: 7
 - Transmission defect: 5

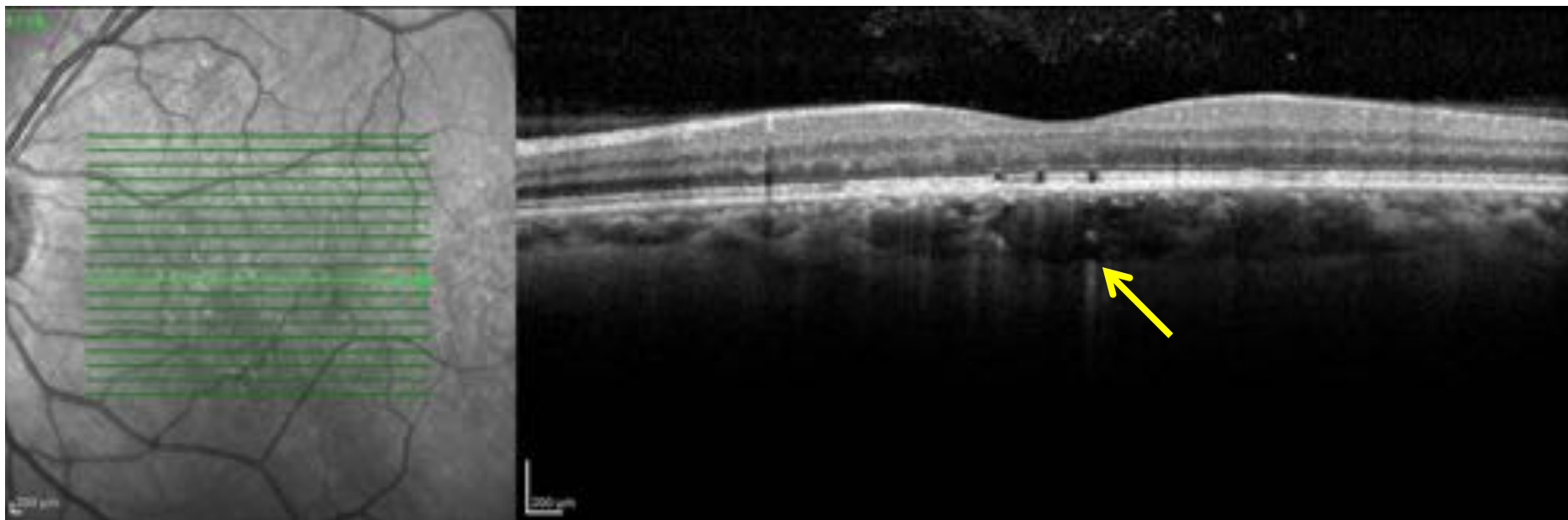
EZ/IZ disruption



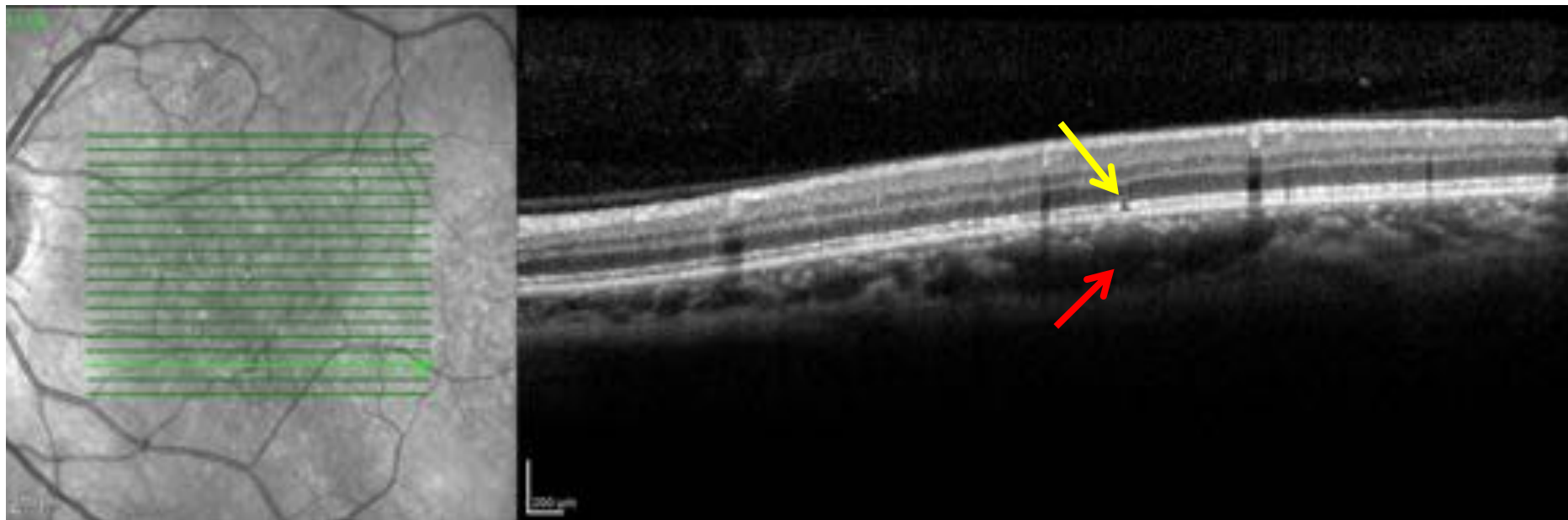
IZ disruption only



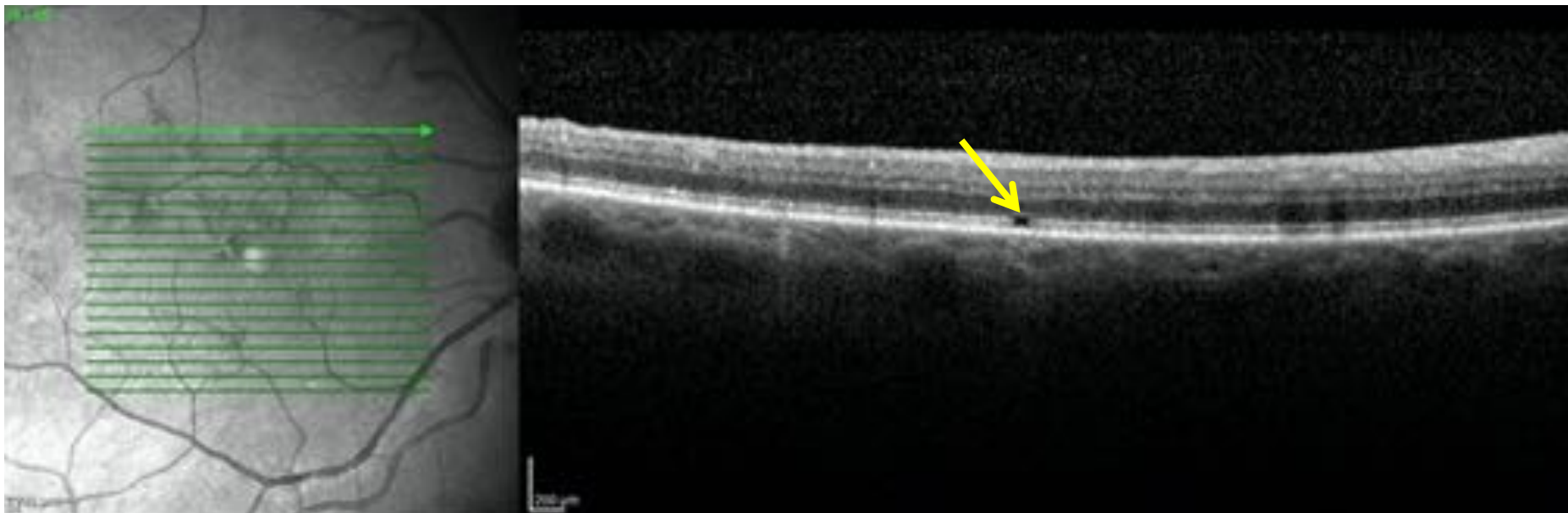
Transmission defect



Pachyvessel underlying defect



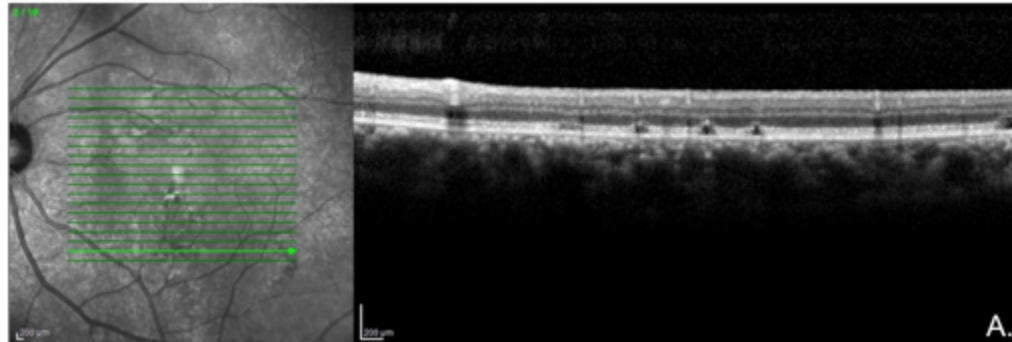
ELM hyper-reflectivity



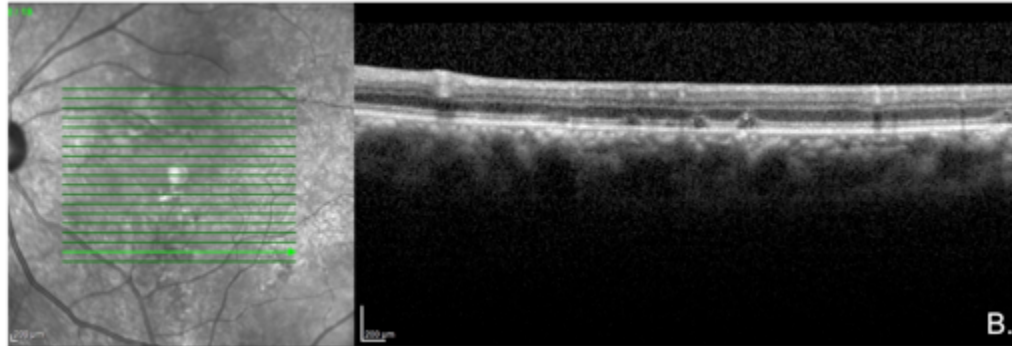


- SD-OCT demonstrates focal defects in the EZ and IZ with preservation of the RPE. The focal defects demonstrate stability over 9 months.

At presentation
20/20



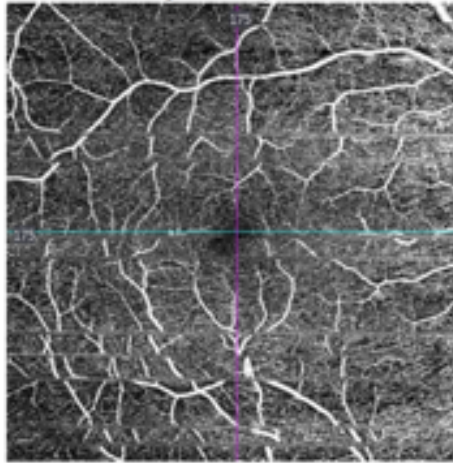
9 months later
20/20



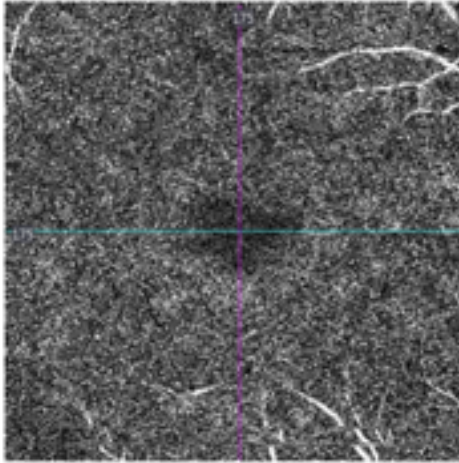


- OCT-A demonstrates focal defects in the sub-RPE and choriocapillaris layers only, corresponding to the focal defects in the EZ/IZ.

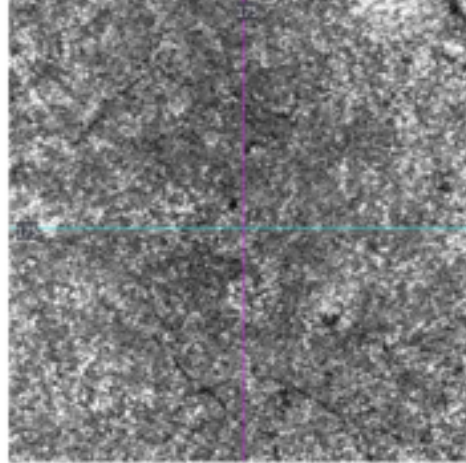
AngioPlex - Superficial



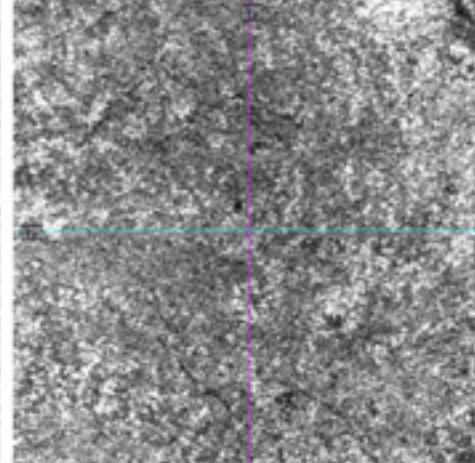
AngioPlex - Deep



AngioPlex - Sub-RPE



AngioPlex - Choriocapillaris



- Patients with pachychoroid pigment epitheliopathy may develop focal outer retinal defects in the EZ and/or IZ.
- Patients have a stable disease course and retain visual acuity.
- There may be an increased risk of these defects in patients with diabetes.

Susan Elner, MD

