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## Ashley Suh

Traditional Class of 2024

**Hometown:** Livingston, NJ

**Undergrad:** Villanova University

**Major:** Biology

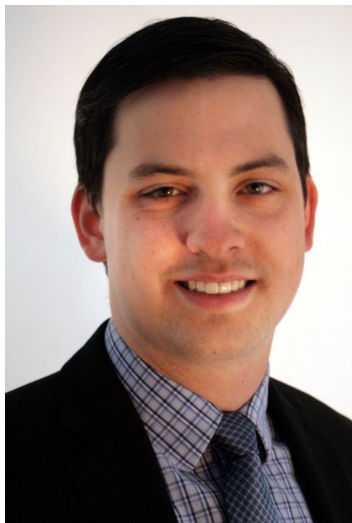
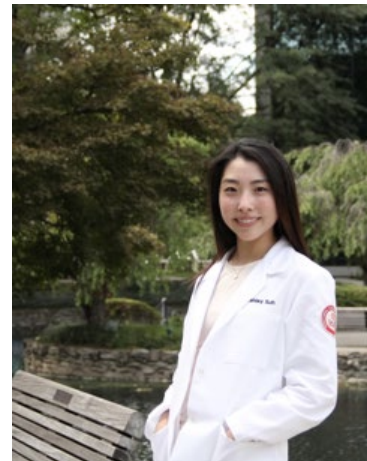
**Favorite Subject:** Contact Lens & Binocular Vision

**Optometry Goal:** Work-life balance!

**Favorite food:** Sushi

**Hobby:** Zumba, Golf, & Hot Yoga

**Last Show I binged:** House of the Dragon



## Nicholas Karbach

Class of 2017, Pennsylvania College of Optometry

**Hometown:** Roanoke, Virginia

**Undergrad:** Grove City College

**Major:** Molecular Biology

**Favorite Diagnostic Instrument:** B-scan

**Last Show I Binged:** Andor

**Hobby:** Learning new skills and games

## Case Title: Dilation Discovery



# The Case

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## Demographics

85 yo Black female; retired

**Chief complaint:** comprehensive eye exam

## History of present illness

**Character/signs/symptoms:** Blurry vision

**Location:** OU

**Severity:** mild

**Nature of onset:** gradual

**Duration:** can't recall

**Frequency:** constant

**Context:** both distance and near

**Exacerbations/remissions:** none

**Relationship to activity or function:** none

**Accompanying signs/symptoms:** none

**Secondary complaints/symptoms:** itching OS

**Character/signs/symptoms:** reports frequently rubbing "bump" in inner corner of left eye due to itching

**Location:** OS

**Severity:** moderate

**Nature of onset:** occurs randomly

**Duration:** can't recall

**Frequency:** intermittent

**Exacerbations/remissions:** none

**Relationship to activity or function:** none

**Accompanying signs/symptoms:** intermittent blur OS

## Patient ocular history

s/p cataract extraction w/ PCIOL OU

Ectropion OU; s/p blepharoplasty OU

Dry eye disease OU

Posterior vitreous detachment OU

Compound Hyperopic Astigmatism w/ presbyopia OU

## Family ocular history

Non-contributory

## Patient medical history

COPD

# The Case

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Hyperlipidemia

Hypertension

Kidney disease

## Medications taken by patient

Atorvastatin, Losartan-HCTZ, Trelegy Ellipta, ProAir HFA inhaler

## Patient allergy history

Penicillin, Sulfonamide antibiotics (+) hives

## Family medical history

Non-contributory

## Review of systems

**Constitutional/general health:** denies

**Ear/nose/throat: Cardiovascular:** denies

**Pulmonary: Endocrine:** denies

**Dermatological:** denies

**Gastrointestinal:** denies

**Genitourinary:** denies

**Musculoskeletal:** denies

**Neurologic:** headaches

**Psychiatric:** denies

**Immunologic:** seasonal allergies

**Hematologic:** denies

## Mental status

**Orientation:** oriented to person, place, and time

**Mood/Affect:** normal

## Clinical findings

BVA (cc):	<u>Distance</u>	<u>Near</u>
OD:	20/25+2	0.4/0.5 M
OS:	20/203	0.4/0.6 M

**Pupils:** PERRL,  $\downarrow$  APD

**EOMs:** full with no restrictions OU

**Confrontation fields:** FTFC OD, questionable nasal VF restriction OS

**Hirschberg:** symmetric

<b>Subjective refraction:</b>	<u>VA Distance</u>	<u>VA Near</u>
OD: +200-1.50x077	20/20-3	

## The Case

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OS: +1.00-1.25x108      20/20-3  
ADD: +3.25              20/20 OU              0.4/0.4 M OU

**Slit lamp:**

lids/lashes/adnexa: capped glands upper and lower lids OU; increased lid laxity OU

conjunctiva: papillae inferior palpebral conj OU; nasal pinguecula OS

cornea: arcus 360 OU

anterior chamber: deep and quiet OU

iris: flat and intact OU

lens: PC IOL centered, intact, and clear PC OU

Vitreous: posterior vitreous detachment OU

**IOPs/method:** 12/11 mmHg OS @ 2:01PM by Goldmann Applanation Tonometry

**Fundus OD:**

C/D, Macula, Posterior Pole: *See Image 1*

**Fundus OS:**

C/D, Macula, Posterior Pole: *See Image 2*

**Blood pressure:** 135/80 mmHg right arm, sitting by manual cuff

## The Case

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Image 1: Color fundus photo OD. A vitreous floater (likely the Weiss ring) is visible nasal to the optic nerve head.

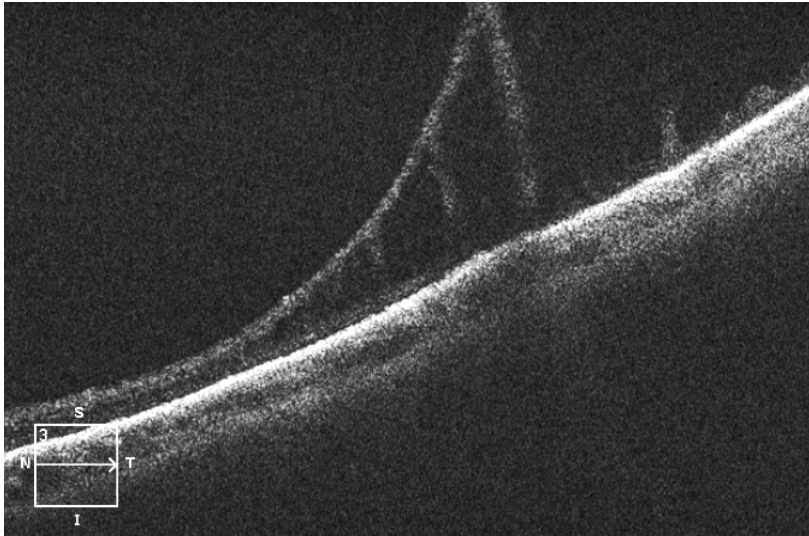
## The Case

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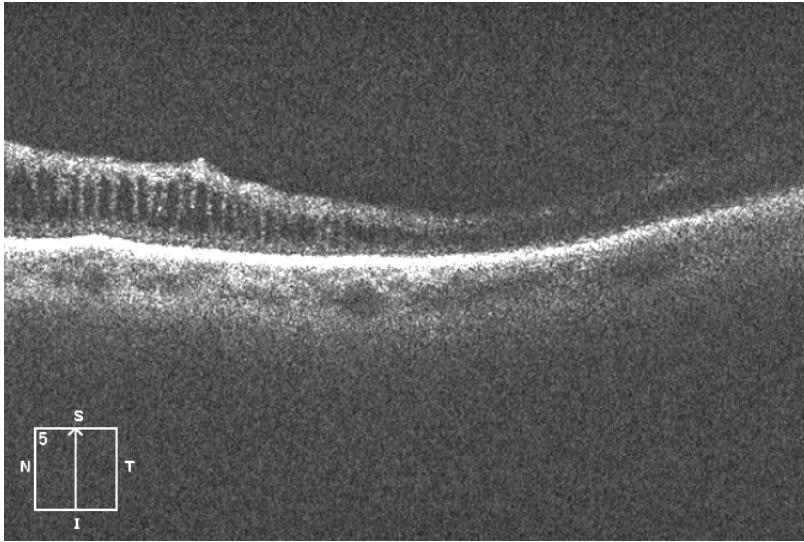
Image 2: Color fundus photo OS - A vitreous floater is also present in this eye. Of note is the large round area of retinal elevation in the temporal periphery (green arrows). The retina does not appear to be ischemic and there is no visible retinal break.

## The Case



**Image 3: Horizontal raster scan OS through lesion. This peripheral OCT scan was taken with the patient looking in far right gaze. It shows the inner retina splitting and separating from the outer retina which remains attached at the RPE. A raster scan was chosen because it can be taken faster than a 200x200 cube scan and provides higher resolution when a clear image would otherwise be hard to get. Note how thin the retina is that far into the periphery!**

## The Case



**Image 4: Vertical raster scan OS through lesion.** This image shows the same area as seen in Image 3 but from the vertical direction, showing the location where the retinal split occurs. Note the intraretinal cystic spaces.

## Case Management Summary

Assessment 1: Compound hyperopic astigmatism with presbyopia OU - Mild changes in the refraction were noted with a best-corrected visual acuity of 20/20 in each eye.

Plan 1: A new bifocal glasses rx was given. Plan to follow up in 1 year or sooner as needed.

Assessment 2: Retinoschisis - Temporal peripheral retinoschisis discovered incidentally OS. Patient is asymptomatic of new flashes or floaters. The OCT showed splitting of the inner and outer retinal layers and confirmed that there was no detachment. There were no retinal breaks associated with the lesion as confirmed by BIO and 3-mirror gonioscopy.

Plan 2: Refer to retinal specialist for confirmation of diagnosis with scleral depression. We discussed the need to return promptly if she notices an increase in flashing lights or floaters in



## The Case

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her vision. Plan to monitor yearly or sooner as needed.

### Case Pearls

- Retinoschisis is a relatively benign peripheral retinal finding that can present similarly to a retinal detachment. Some research indicates that peripheral cystoid degeneration may be a precursor to retinoschisis. The thought being that the cystic spaces coalesce as there is natural degeneration of the neuroretinal and glial supporting elements. The schisis space slowly enlarges with time resulting in the separation of the inner and outer retinal layers noted as schisis. We like to imagine the symbolism of bubble wrap being the cystoid degeneration and the bubbles fusing together to create a larger bubble resembling the retinoschisis.
- An OCT is helpful for differentiating between a retinoschisis and a rhegmatogenous retinal detachment based on anatomical differences. A split between the layers of the neurosensory retina at the level of the outer plexiform layer is a retinoschisis. A split of all of the layers of the neurosensory retina from the hyper-reflective RPE is a retinal detachment.
- It is important to closely examine the area of the retinoschisis for any retinal breaks which would significantly raise suspicion for a retinal detachment. The peripheral mirror on the 3-mirror gonioscopy lens is helpful for providing a high-resolution, well-magnified view of the peripheral retina. Visualization of any retinal breaks or billowy movement of the affected retina is highly indicative of retinal detachment.
- A lack of new flashes/floaters is more typical of a retinoschisis vs. a retinal detachment.
- Automated peripheral visual field testing of a retinoschisis should theoretically show an absolute scotoma whereas a fresh retinal detachment should cause a relative scotoma; old retinal detachments become absolute defects due to loss of nutritional support for the retina.
- It is best to have your diagnosis verified by a retinal specialist to rule out the need for treatment or closer monitoring.