

Katherine Lindsay

Scholars Class of 2023, Salus University

Hometown: Chesapeake, Virginia

Undergrad: Virginia Tech

Major: Biochemistry

Favorite Subject: Neuroscience

Optometry Goal: Be the best optometrist in the OBX!

Favorite food: Tacos

Hobby: Beach days



Korey Patrizi

Class of 2020, UIW Rosenberg School of Optometry

Hometown: Wilkes-Barre, Pennsylvania

Undergrad: University of Pittsburgh

Major: Biological Sciences; Minors: Philosophy, Chemistry

Favorite Diagnostic Instrument: B-scan

Favorite summer activity: outdoor concerts

A Hypermature Afferent Pupillary Problem

Demographics

58 year old male

Chief complaint: blurry vision

History of present illness

Character/signs/symptoms: hazy vision

Location: left eye

Severity: severe

Nature of onset: gradual worsening over "last few months"

Duration: Frequency: constant

Exacerbations/remissions: none

Relationship to activity or function: N/A

Accompanying signs/symptoms: significant issues with glare in sunlight

Patient ocular history

(-) surgeries, (-) trauma, (-) glaucoma

Family ocular history

N/A

Patient medical history

N/A

Medications taken by patient

N/A

Patient allergy history

NK

Family medical history

Mother: HTN

Father: HTN

Sister: HTN

Review of systems

Constitutional/general health: denies

Ear/nose/throat: Cardiovascular: denies

Pulmonary: Endocrine: denies

Dermatological: denies

Gastrointestinal: denies

Genitourinary: denies

Musculoskeletal: denies

Neurologic: denies

Psychiatric: denies

Immunologic: denies

Hematologic: denies

Mental status

Orientation: oriented to person, place, and time

Mood/Affect: normal

Clinical findings

BVA:	<u>Distance</u>	<u>Near</u>
OD:	20/40-2	0.4/.1.0M
OS:	LP	LP

Pupils: PERRL, physiological anisocoria OS>OD, (+) 0.6 log APD OD

EOMs: full/jerky OU

Confrontation fields: FTFC OD, unable OS

Subjective refraction:

OD: +0.50 -0.50 x 170 ADD +2.00

OS: no improvement

VA Distance

20/30-2

VA Near

0.4/0.4M

Slit lamp:

lids/lashes/adnexa: meibomian gland inspissation with turbid secretion OU

conjunctiva: diffuse racial melanosis, pinguecula temporal and nasal OU

Cornea: Arcus, reduced TBUT, PEE, trace endothelial pigment OU

anterior chamber: OD: d/q, OS: narrow

Iris: flat and intact OU

lens: OD: NS 1+, CS 3+, PSC 2+ OS: 4+ hypermature cataract

Vitreous: clear OD, unable to assess OS

IOPs/method: 15/15 mmHg, Goldmann

Fundus OD:

C/D: 0.3/0.3

macula: flat and intact

posterior pole: clear

Vessels: $\frac{1}{3}$ AV ratio

periphery: flat and intact, no holes, tears or detachments

Fundus OS:

Unable to assess directly due to dense cataract. Clear of masses/detachments with

B-scan ultrasonography examination

Blood pressure:

158/88 RAS @ 1:48PM

Case Images:

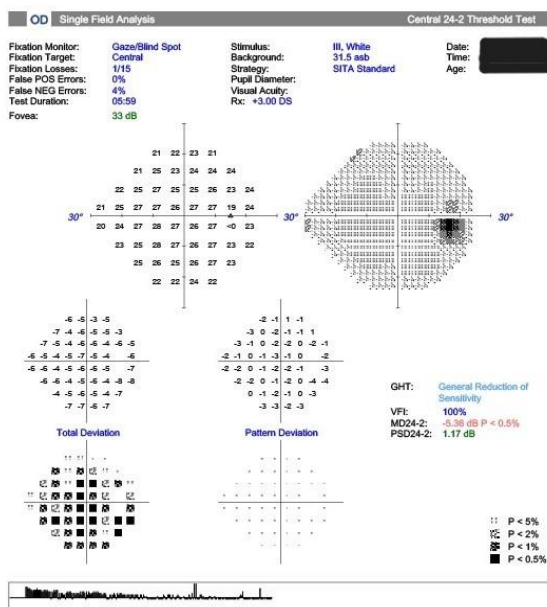
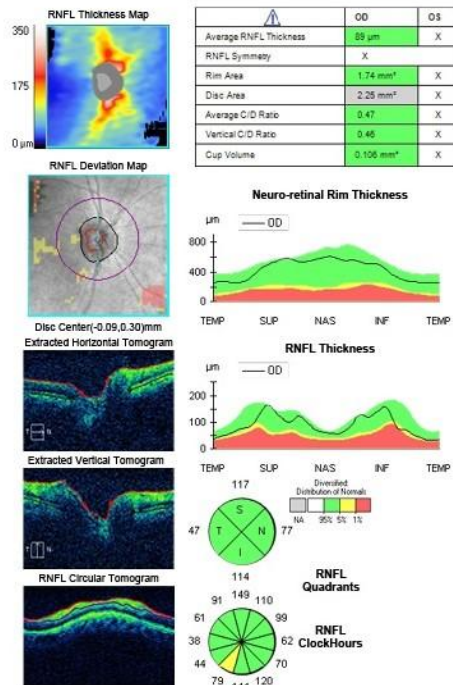


Figure 1: HVF 24-2 OD showing generalized depression from dense cataract. No neurological pattern loss noted. Reliability indices, total deviation plot, pattern deviation plot, mean deviation, pattern standard deviation, and visual field index all indicate 'normal' functional testing and do not support a RAPD OD.

ONH and RNFL OU Analysis: Optic Disc Cube 200x200



Macula Thickness : Macular Cube 512x128

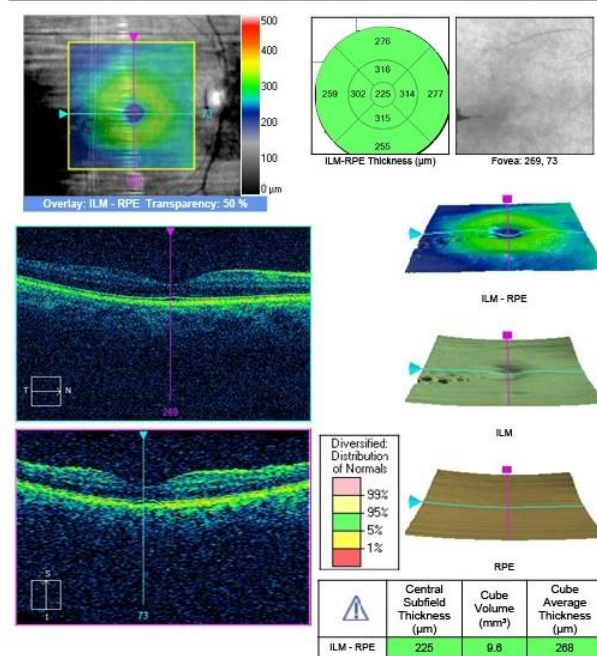


Figure 2: ONH OCT RNFL Analysis and Macular Thickness OD showing no evidence of NRR or RNFL loss to attribute to an RAPD. (Ganglion Cell Analysis had low signal strength and is this not included; however, there were no gross signs of neurological pattern loss). Structural testing does not support RAPD OD.

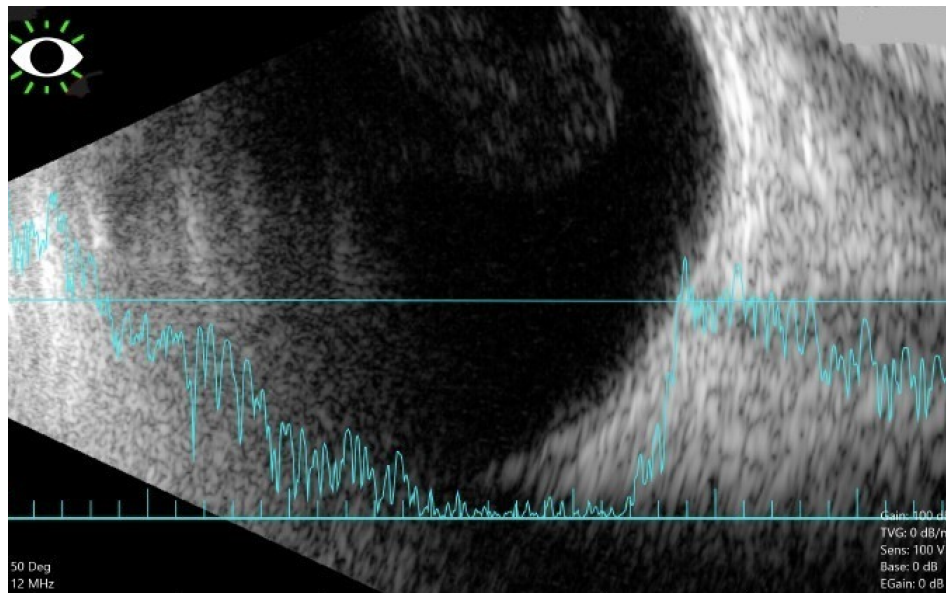


Figure 3: Bscan image OS demonstrating unremarkable ultrasound imaging behind hypermature cataract. No mass or detachment noted giving guarded positive prognosis post-operatively.

Case Management Summary

Obtained OCT of ONH and macula with RNFL analysis and macular thickness of the right eye only. Results unobtainable OS due to low signal strength and dense media opacity. Also performed automated visual field of the right eye only. Unable to test OS due to poor vision. The right eye scans revealed normal retinal nerve fiber layer in all quadrants and normal retinal contour with no macular edema or subretinal fluid. The visual field was clear with no defects.

Since there was no way to directly assess the intraocular health OS through the dense cataract, a B-scan ultrasound was performed. This examination revealed that the retina was intact with no tears or detachments. No masses or malignancies were noted.

The patient was diagnosed with combined forms of cataracts in the right eye and a hypermature cataract in the left eye. He was educated on lens changes and referred for cataract extraction with a tentative good prognosis for vision postoperatively given unremarkable testing.

Case Pearls

Dense hypermature and traumatic cataracts can cause an RAPD in the contralateral eye, which may seem puzzling and concerning at first. Hypotheses include that the increased sclerotic scatter in the eye with the hypermature cataract causes a relative increase in light intensity reaching the retina in that eye compared to the fellow eye. It is important to rule out a concomitant neurological etiology for the RAPD in the other eye. Therefore, a careful examination including ancillary testing of the eye with the RAPD is important. Depending on the patient's level of acuity in the better-seeing eye, these tests may include color vision, red desaturation, automated visual fields, and OCT.

The B-scan is a simple, non-invasive tool that is importantly utilized when the posterior segment is unable to be visualized and evaluated. It is helpful to rule out retinal tears and detachments as well as masses or possible malignancies in a retina that cannot be directly visualized—in this case, due to a hypermature cataract - prior to referral for surgical removal of the opacified crystalline lens.

Hypermature cataracts can significantly impact a patient's vision and cause narrowing of the anterior chamber. They can cause many complications including phacolytic glaucoma, lens-induced uveitis, and lens dislocation. Therefore, patients should be referred for cataract extraction promptly in order to avoid complications.