SALUS UNIVERSITY
The Eye Institute

Pennsylvania College of Optometry

The Focal Point

January 2023 Edition

India Donofrio

Scholars Class of 2024

Hometown: Albany, New York
Undergrad: University of Rhode Island
Major: Biology
Favorite Subject: Neuro-Ophthalmic Disease
Optometry Goal: Travel internationally to provide eyecare outside the United States
Favorite food: Eggplant Rollatini + Brussel Sprouts
Hobby: Knitting and watching movies with my cat, Milo
Last Show I Binged: In the Dark

Korey Patrizi, OD, FAAO

Class of 2020, University of the Incarnate Word Rosenberg School of Optometry
Residency Class of 2021, The Eye Institute, PCO

Hometown: Wilkes-Barre, PA
Undergrad: University of Pittsburgh
Major: Biology; Minors: Philosophy, Chemistry
Favorite Diagnostic Instrument: B-scan
Last Show I Binged: Only Murders in the Building
Favorite Things About Philadelphia: great food, awesome music venues, and Philly sports

She's Never Seen 20/20 – Let's Figure Out Why!

Demographics

47 yo Black female

Chief complaint: blurry vision sc OU

History of present illness

Character/signs/symptoms: Patient lost glasses about 2 weeks ago, and experiences mild blur at near > distance sc OU, worse in the morning

Location: OU

Severity: mild

Nature of onset: 2 weeks, after losing glasses

Duration: worse in the morning

Frequency: constant

Exacerbations/remissions: none

Relationship to activity or function: none

Accompanying signs/symptoms: none

Patient ocular history

Preseptal cellulitis OD, was prescribed a Z-Pak. Did not return for f/u after resolution of symptoms.

Family ocular history - unremarkable

Patient medical history

(+) Asthma
(+) Seasonal Allergies
(+) Depression
(+) Hysterectomy -1.5 years ago
(+) Osteoarthritis

Medications taken by patient: Arthritis Pain Relief (acetaminophen) ER 650 mg tablet, albuterol sulfate HFA 90 mcg/actuation aerosol inhaler, cetirizine 10 mg tablet, fluticasone 232 mcg-salmeterol 14 mcg/actuation breath activated powder, gabapentin 300 mg capsule, ibuprofen 600 mg tablet, Mapap Arthritis Pain 650 mg tablet extended release, Symbicort 160 mcg-4.5 mcg/actuation HFA aerosol inhaler

Patient allergy history

No known allergies

Family medical history

Mother: None
Father: Diabetes, HTN

Review of systems

Constitutional/general health: denies

Eyes: (+) photophobia, tearing.
(-) burning eyes, dry eyes, itchy eyes, eye pain, eye redness, FBS

Ear/nose/throat: denies

Cardiovascular: denies

Pulmonary: denies

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

Entering VA:

	Distance	Near	Pinhole
OD:	20/30-2	0.4/2.0	NI
OS:	20/25-2	0.4/2.0	NI
OU:	20/25	0.4/1.6	

Pupils: PERRL (-) APD OU
EOMs: Full with no restrictions
Confrontation fields: Full to Finger Counting
Hirschberg: Symmetric

Subjective refraction:	VA Distance	VA Near
OD: plano -0.25 x 045	20/25	0.4/0.5
OS: plano Sph	20/25	0.4/0.5
ADD: +1.50 OU		

Slit lamp:
Lids/lashes/adnexa: Capped glands I>S OU
Conjunctiva: Diffuse melanosis, trace papillae inferior palpebral conjunctiva OU
Cornea: Normal endothelium, epithelium, and stroma OU, Trace PEE inferior OU, TBUT 4 seconds OD, 3 seconds OS (-) corneal striae, apical scarring OU
Anterior chamber: Deep and Quiet; no cells, no flare OU
Iris: brown flat and intact OU
Lens: Trace CS OU
Vitreous: clear OU

IOPs/method:
Goldmann: 17/16 mmHg

Fundus OD:
C/D: 0.4/0.4, well perfused, margins distinct, no elevation
macula: flat, no hemorrhages, exudates, pigmentary changes, no macular edema foveal reflex present
posterior pole: 2/3 AV, normal course & caliber
Periphery: flat x 360 degrees, no RD, no holes

Fundus OS:
C/D: 0.4/0.4, well perfused, margins distinct, no elevation
macula: flat, no hemorrhages, exudates, pigmentary changes, no macular edema

foveal reflex present
posterior pole: 2/3 AV, normal course & caliber
Periphery: flat x 360 degrees, no RD, no holes
Blood pressure: 130/85 mmHg RAS manual cuff

Case Images:

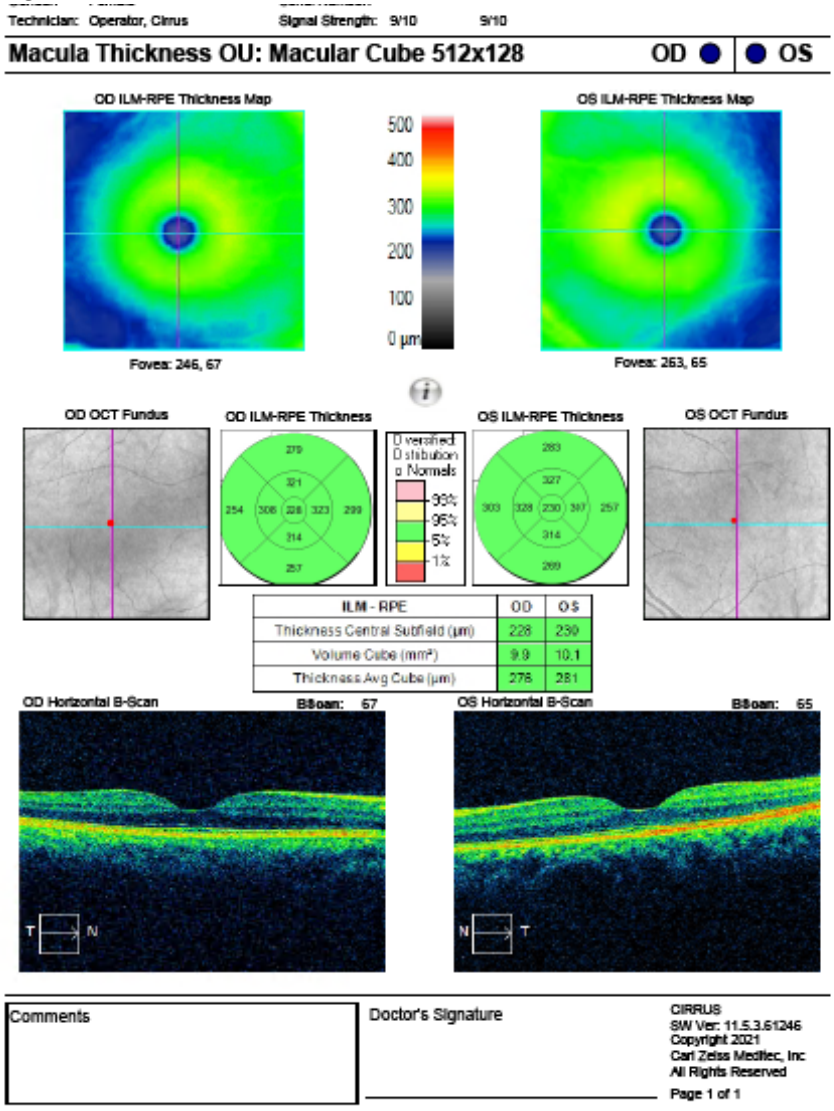

Image 1: Macular Cube OCT 512x128 OU was performed first to investigate the cause of reduced best corrected vision with unremarkable findings.

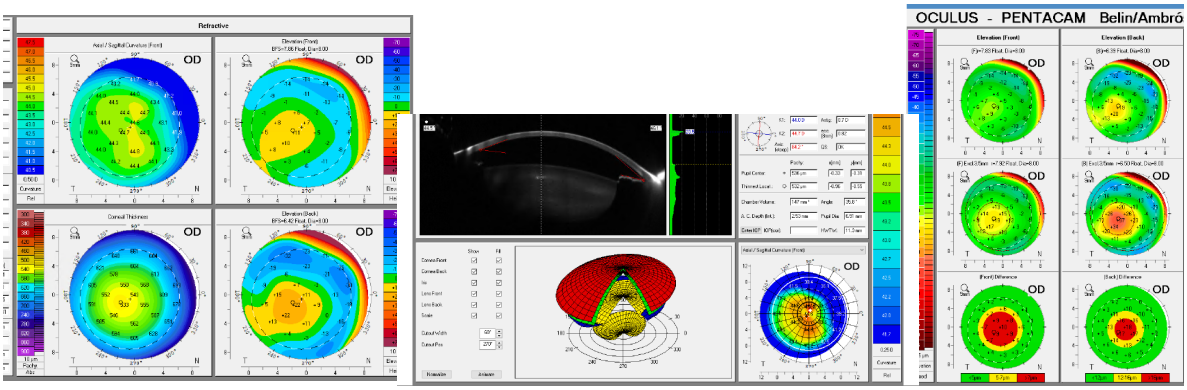

Image 2: Pentacam Corneal Topography OD revealed mild back surface steepening, borderline eccentricity, and mild inferior-nasal paracentral corneal thinning. Ectasia indicative of keratoconus.

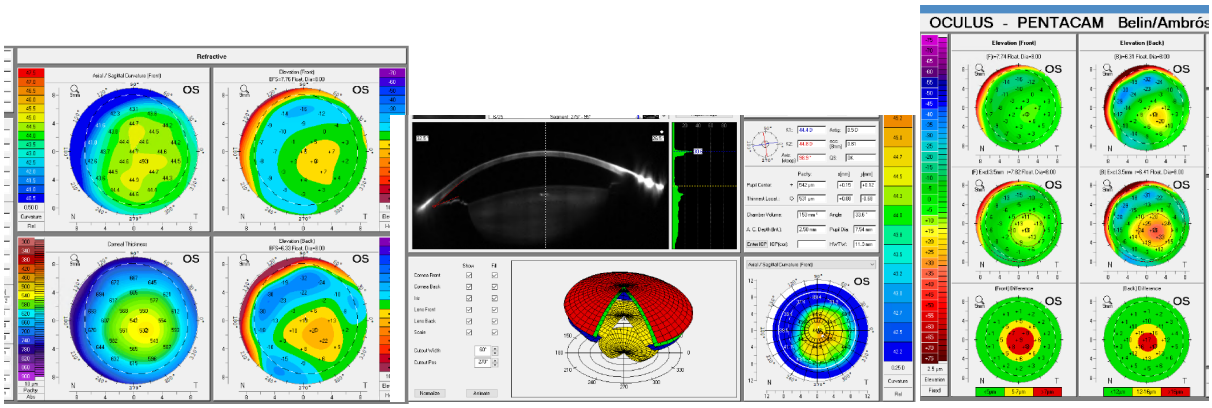

Image 3: Pentacam Corneal Topography OS revealed mild back surface steepening, borderline eccentricity, and mild inferior decentration. Ectasia indicative of keratoconus.

Case Management Summary

Assessment 1: Keratoconus, unspecified, bilateral

- BCVA at distance: 20/25 OD, OS, OU
- BCVA at near: 0.4/0.5 OD, OS, OU
- Corneal topography revealed mild back surface steepening, borderline eccentricity, and mild inferior-nasal paracentral corneal thinning.
- This is a new finding. Baseline testing performed today.

Plan 1: Pt educated on today's findings. Pt educated that keratoconus is a progressive condition where the cornea steepens. Pt ed that rubbing/itching her eyes over time can exacerbate the steepening. Pt educated that keratoconus usually appears in pt's 20s-30s and if aggressive, we typically would have seen much more advanced signs today. Pt ed that her condition has likely stabilized at this time. Pt to RTC in 6 months for repeat corneal topography in order to assess stability or progression. Pt scheduled a speciality CL fit with the specialty contact lens service to explore all options. Pt educated about TEI emergency service if she notices any drastic changes to vision. If stable at 6-month f/u, consider monitoring at annual CEE.

Assessment 2: Meibomian gland dysfunction of eye

- Pt symptomatic for dryness and tearing OU.
- SLE revealed capped meibomian glands I>S OU, reduced TBUT OU, and trace PEE inferior OU.

Plan 2: Pt was educated on today's findings. Pt was educated on lid hygiene, on the use of warm compresses, and provided with a sample of Refresh ATs to use QID-PRN. Monitor in one year or sooner, if needed.

Assessment 3: Other chronic allergic conjunctivitis

- Pt is symptomatic for tearing, itching, dryness during allergy season.
- SLE revealed trace papillae inferior palpebral conjunctiva

Plan 3: Pt educated on today's findings. Pt educated to use OTC allergy drops for allergies in conjunction with cool compress to relieve symptoms. Emphasized the importance of refraining from eye rubbing to reduce mechanical exacerbation of keratoconus. Pt was given a print out of pictures of OTC options including Pataday, Zaditor, and Alaway. Pt expressed verbal understanding. Monitor in one year or sooner, PRN.

Assessment 4 : Presbyopia OU

- Refraction revealed irregular astigmatism OU, presbyopia OU
- BCVA at distance : 20/25 OD, OS, OU
- BCVA at near: 0.4/0.4 M OU

Plan 4: Pt was educated on today’s findings. New progressive Rx was dispensed for full-time wear. Monitor at 6-month f/u, then annually if stable.

Case Pearls

1. When your patient does not correct down to 20/20, you have an obligation to find a reason for the reduction in vision and this is especially true in the case where there are no amblyogenic risk factors. In cases like this where there was no medical reason found (SLE, MAC OCT, Fundus were all normal), it’s important to go through your ancillary testing again. When the patient is unable to be corrected to 20/20 and their autorefraction displays more astigmatic prescription than they accept during the refraction, this is an indication to perform corneal topography and explore keratoconus as a possible etiology for the reduced vision.

2. The diagnosis for keratoconus is made by a combination of history, physical exam, and diagnostic procedures including corneal topography.
3. It's important to look for corneal striae and apical scarring when exploring keratoconus as a possible etiology. However, many cases may manifest as mild posterior corneal or 'back surface' ectasia which can only be visualized through topography evaluation.
4. Keratoconus is generally at its most progressive stage in patients in their 20's and 30's. Therefore, when patient's are found to have mild keratoconus later in life, they tend to have a good prognosis as the condition has typically already stabilized. Early diagnosis and appropriate management are important to prevent progression, especially in more aggressive forms. Additionally, a modifiable risk factor that we can easily educate our patients about is eye rubbing.
5. Patients may be asymptomatic or may note long-standing decreased vision in the affected eye(s). In this case, the patient had never noticed the decreased vision and was never told about it before. It's important to investigate decreased vision (even if only 20/25) very thoroughly to find a cause and to properly educate our patients how they can best prevent progression.