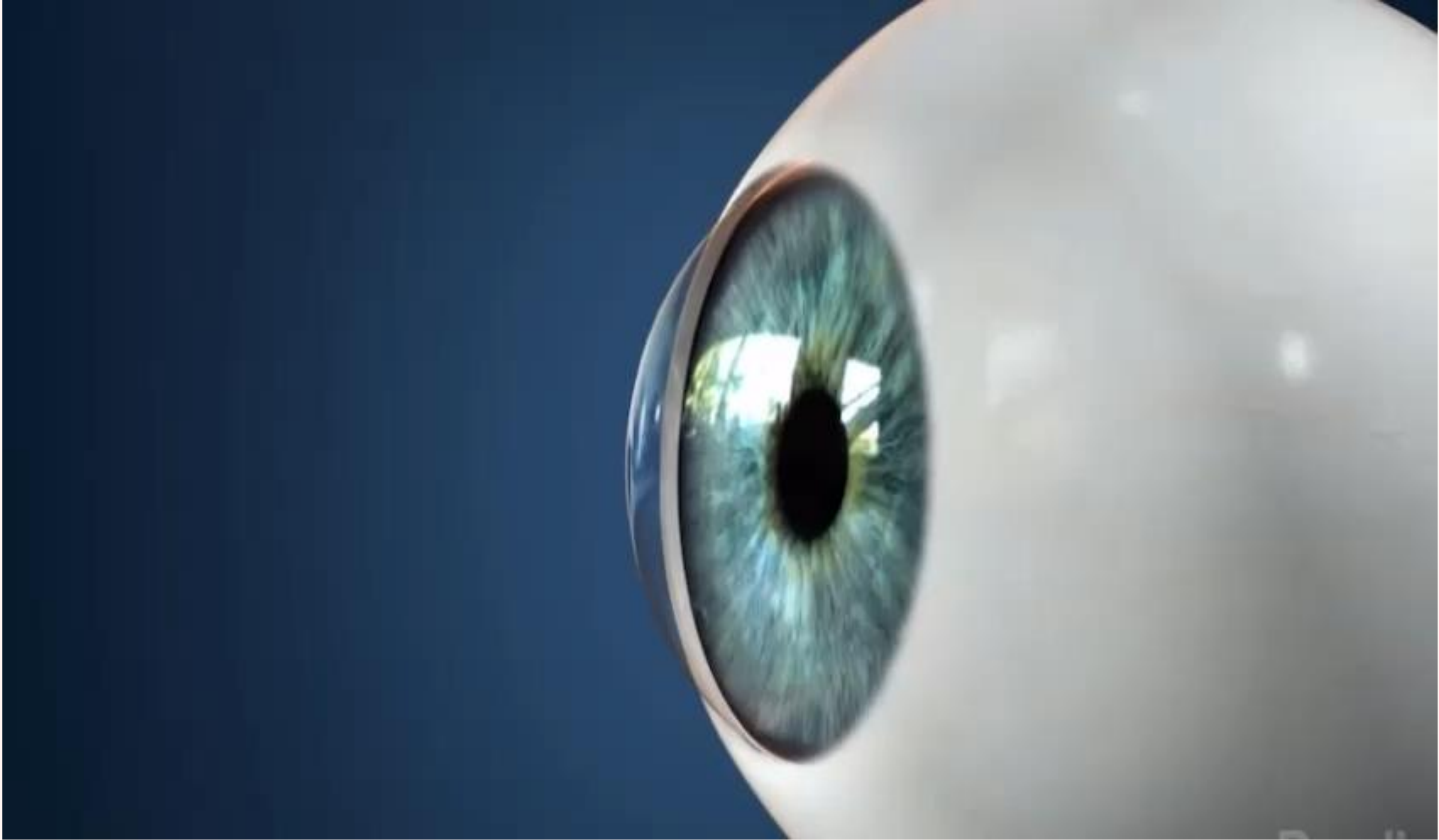

A CASE OF KERATOCONUS

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➤ **PATIENT PROFILE:**

- 22 year student , residing in Nigdi, Pune

➤ **CHIEF COMPLAINTS:**

- Diminution of vision in both eyes (Right eye > left eye) since 1 year
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HISTORY OF PRESENTING ILLNESS

- Patient was apparently alright one year back when he developed diminution of vision in both his eyes (RE>LE) which was gradually progressive and painless in nature
 - H/o frequent eye rubbing with redness since 10 years
 - No h/o spectacle /contact lens use
 - No h/o watering or discharge
 - No h/o ocular trauma or ocular surgery in the past
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-
- Past history : No significant past history
 - Medical history: No h/o skin/food allergies or bronchial asthma
 - Family history: No such similar complaints in the family
 - Personal history: Not significant
-

Patient was conscious, co-operative and well oriented to time, place and person.

BP: 110/70mmhg

Pulse: 68 bpm

Systemic examination: NAD

OCULAR EXAMINATION

	RE	LE
Vision(Snellen’s)	3/60	6/12
Pinhole	6/36	6/9P
BCVA	6/36(-5.00, -2.00X180)	6/9p(-1.00DS)
Near vision	N6	N6
EOM’S	Full, free, painless	Full, free, painless
Ocular adnexa	WNL	WNL
Orbit	WNL	WNL

ANTERIOR SEGMENT EXAMINATION

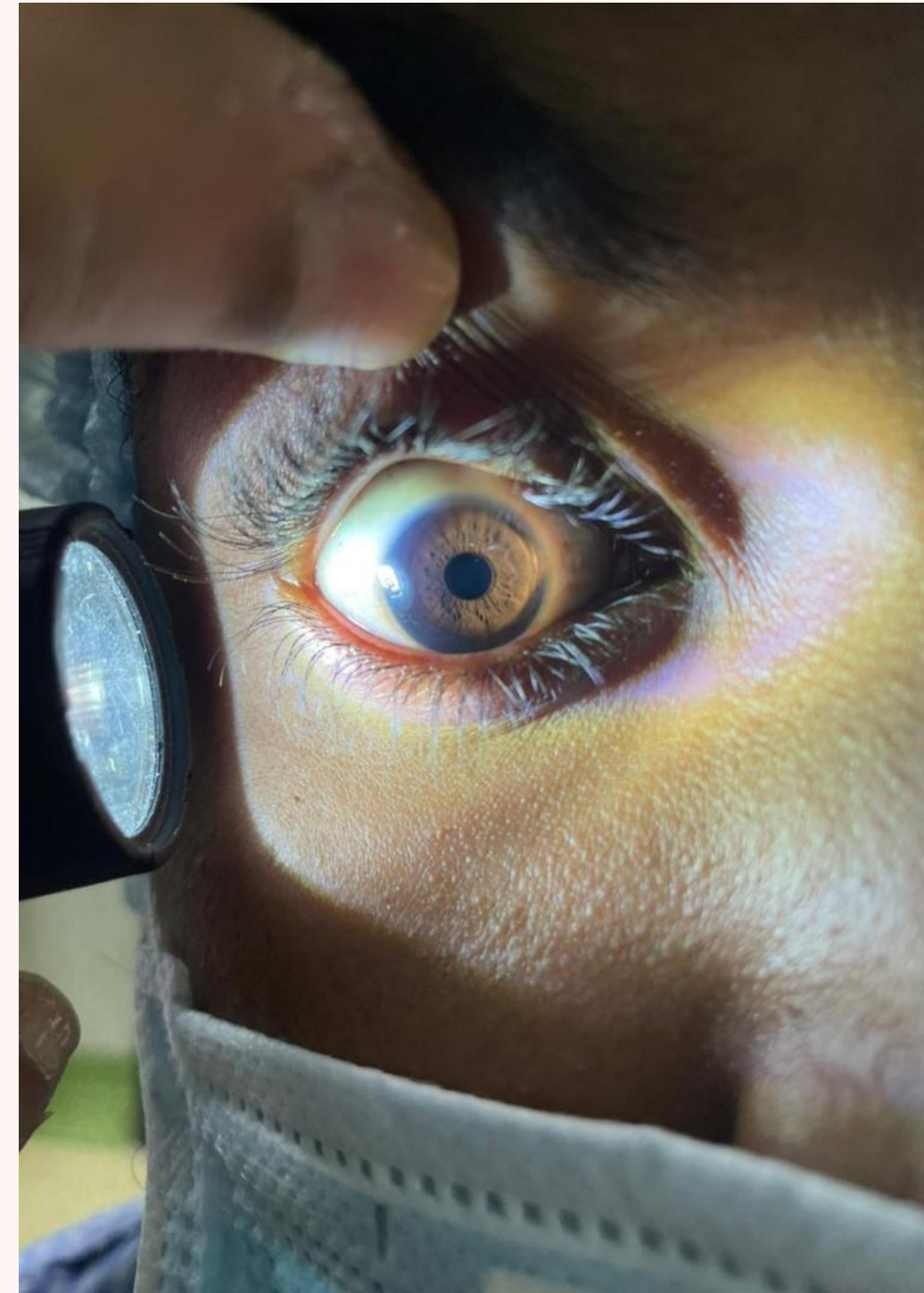
	RE	LE
CONJUNCTIVA	NORMAL	NORMAL
CORNEA	<div>PROMINENT CORNEAL NERVES+ FLEISCHER RING + CENTRAL CORNEAL BULGING WITH THINNING + Corneal sensations: Intact</div>	<div>Clear</div> <div>Corneal sensations: Intact</div>
ANTERIOR CHAMBER	Appeared to be deep	NORMAL DEPTH
IRIS	NORMAL PATTERN	Normal Pattern
PUPIL	C/C/RTL	C/C/RTL
LENS	Clear	Clear



SPECIAL SIGNS



MUNSON'S SIGN

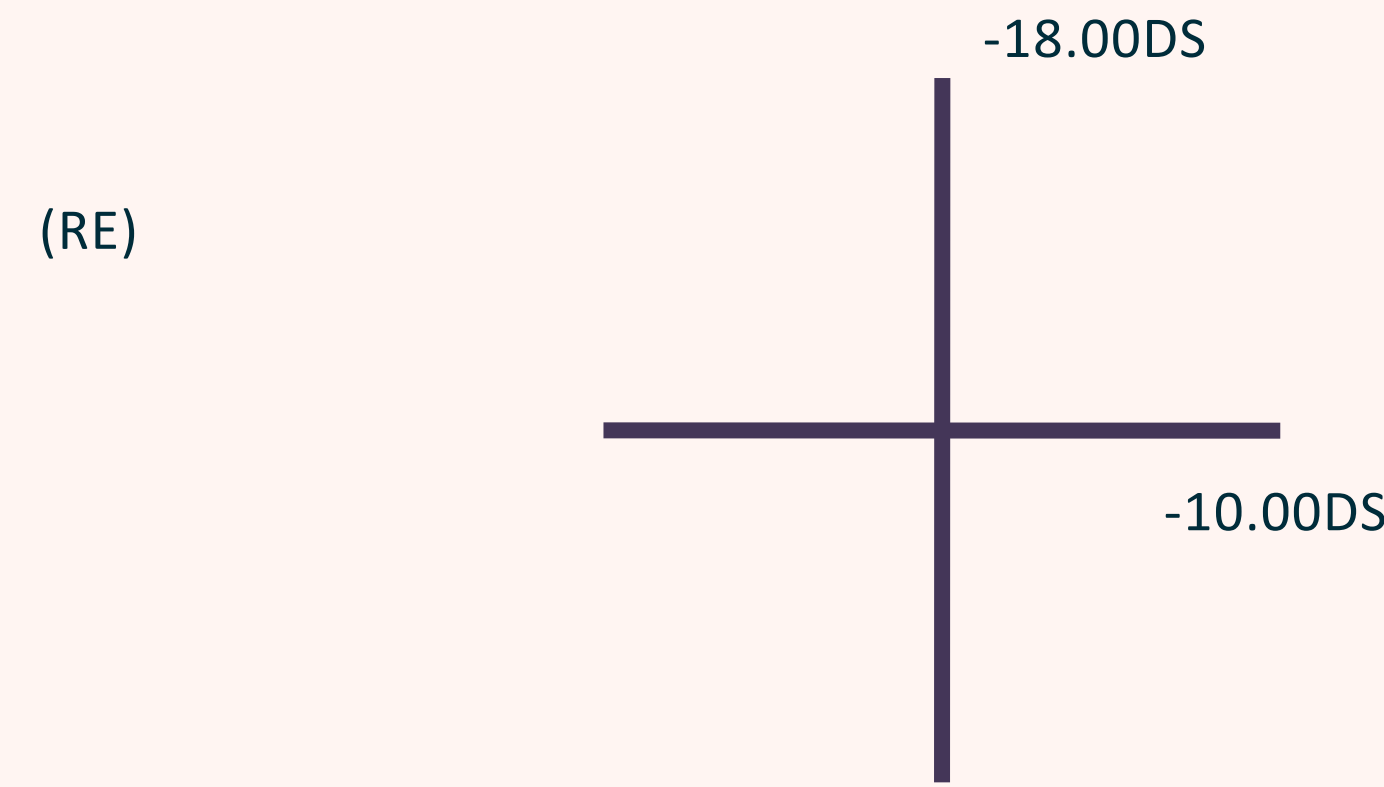


RIZZUTI SIGN

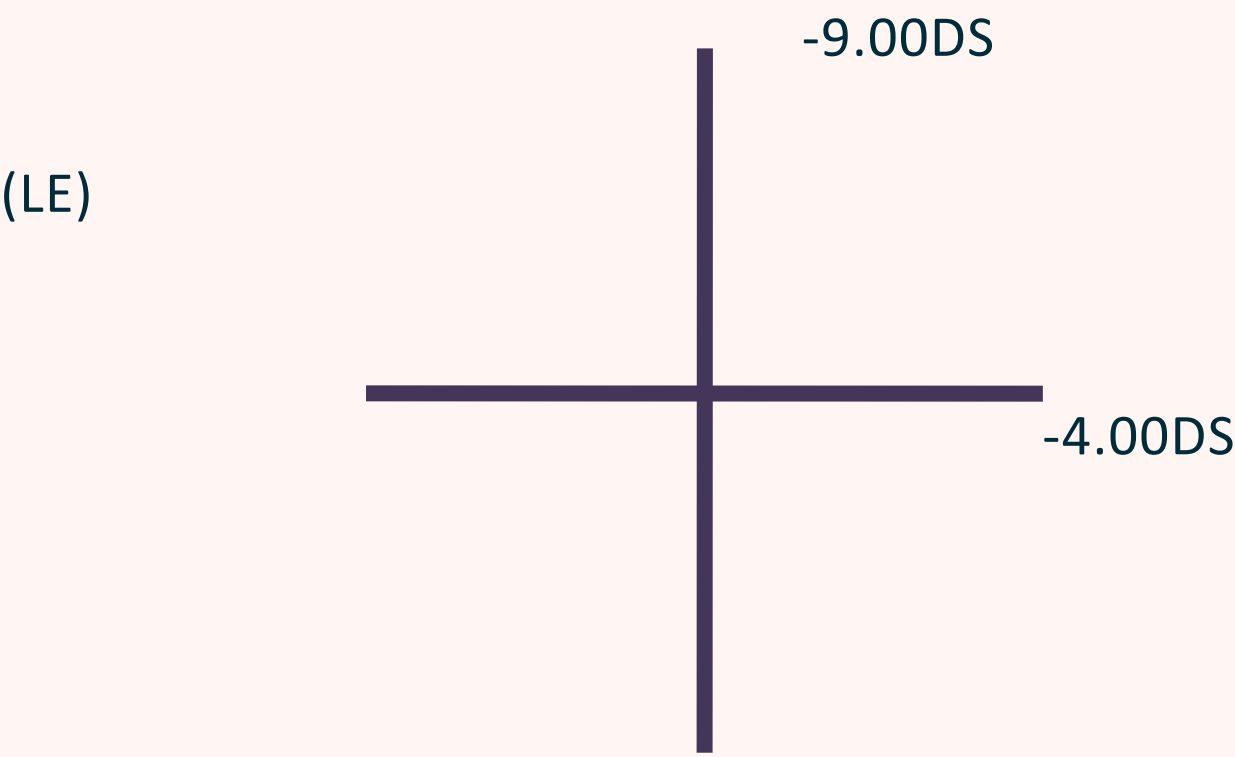
RETINOSCOPY

➤ **Scissoring reflex**

Done at 1m distance with eye drop Tropicamide+phenylephrine (0.8%, 5%)



-10.00,-8.00 x 180°



-4.00,-5.00 x 180°

FUNDUS EXAMINATION

	RE	LE
MEDIA	CLEAR	CLEAR
OPTIC DISC	WNL	WNL
C:D RATIO	0.3	0.3
NRR	HEALTHY	HEALTHY
MACULA	WNL	WNL
FR	+	+
GF	WNL	WNL

- Charloux oil droplet sign present on DDO
- IOP : (RE) Digitally normal (LE) 14 mm Hg
- (BE) ROPLAS -ve



INVESTIGATIONS

- Keratometry - to measure the curvature of the anterior surface

RIGHT EYE KV: 61.00 D KH: 52.50 D

LEFT EYE KV: 48.75 D KH: 43.75 D

<47.2 D	Normal
47.2-48.7 D	Probable
>48.7 D	Clinical

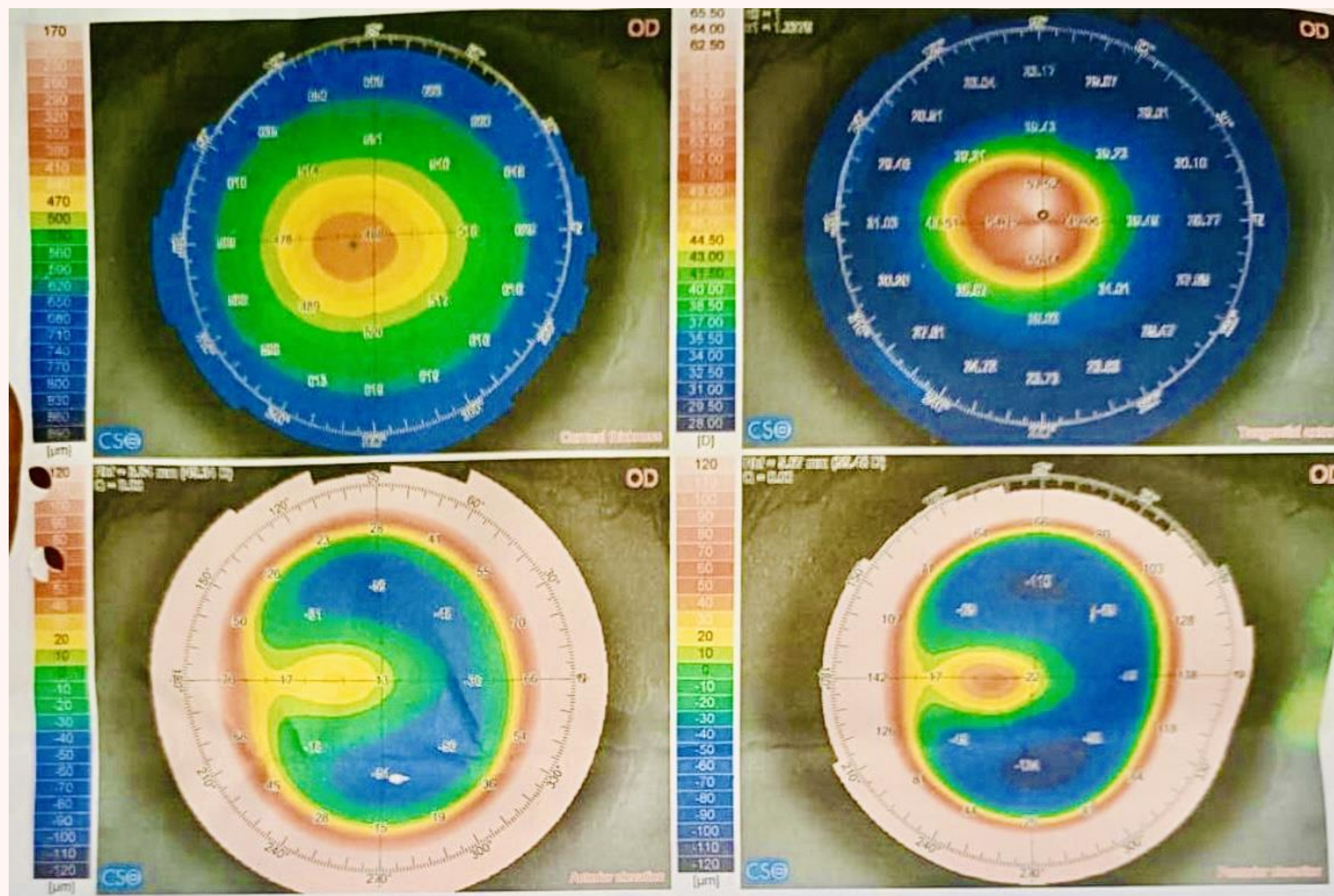
- Pachymetry - Ultrasound pachymetry was used to measure the thinnest zone on the cornea.

Central Corneal Thickness (Normal : 540 +/- 30 microns)

- RE: 398 microns
- LE: 447 microns

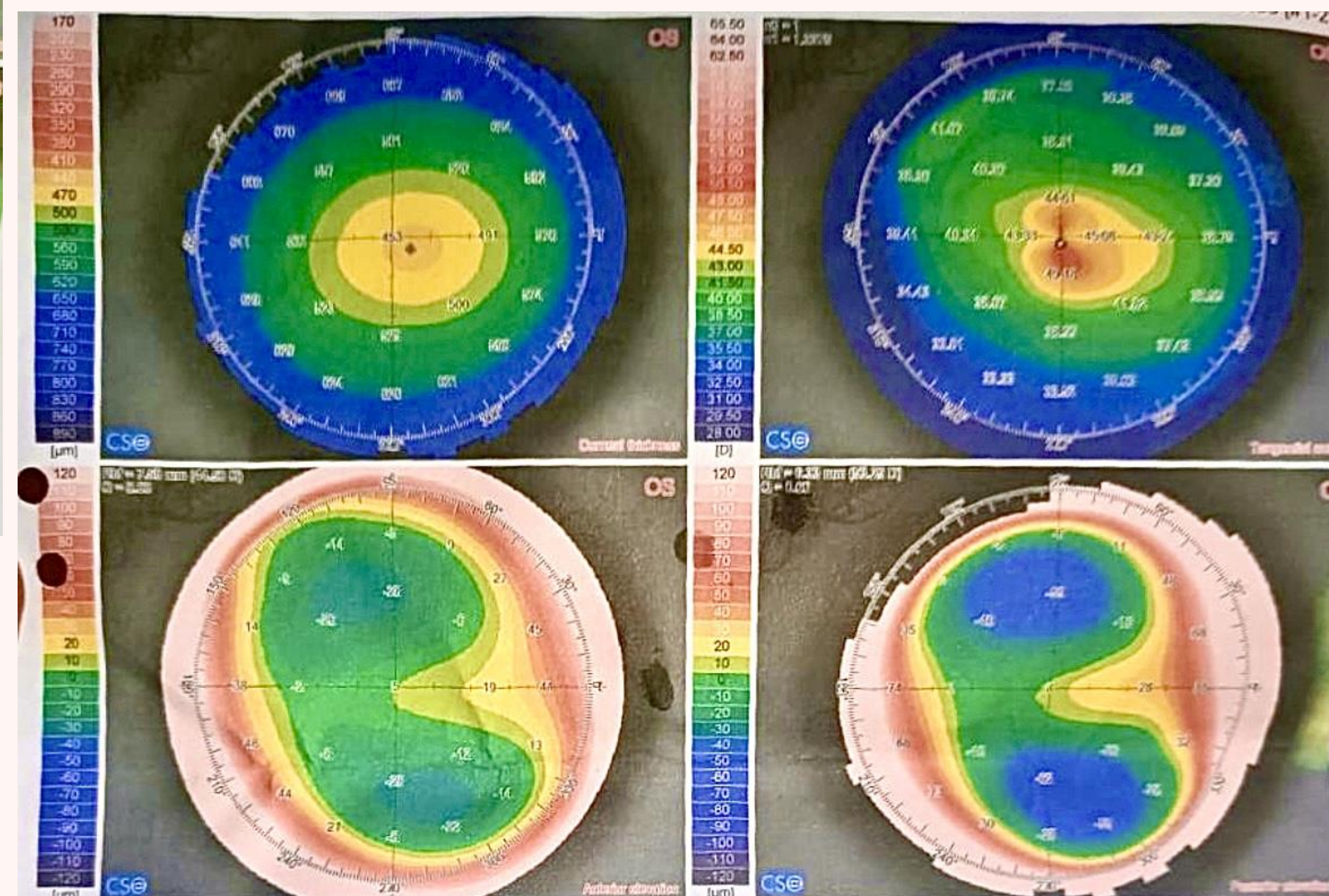
- PENTACAM

Computerized videokeratography is useful in detecting early keratoconus and allows to follow its progression.



RE

LE

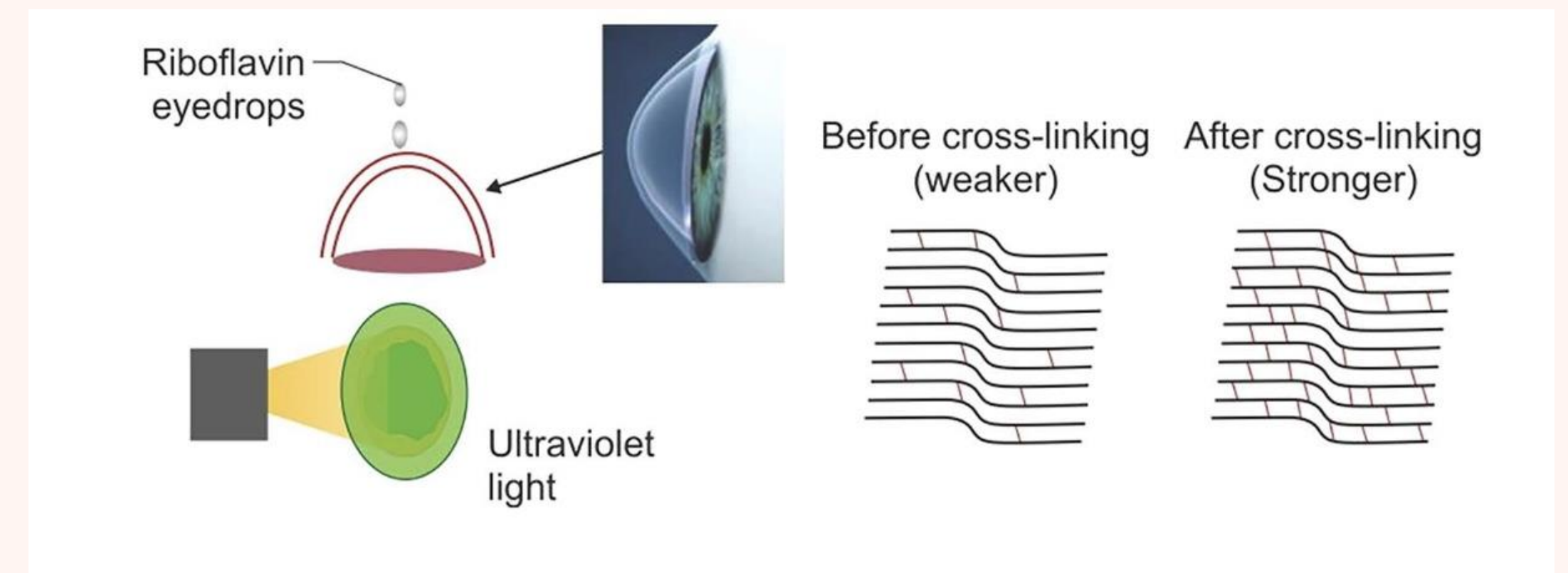


DIAGNOSIS

(BE) KERATOCONUS (RE> LE)

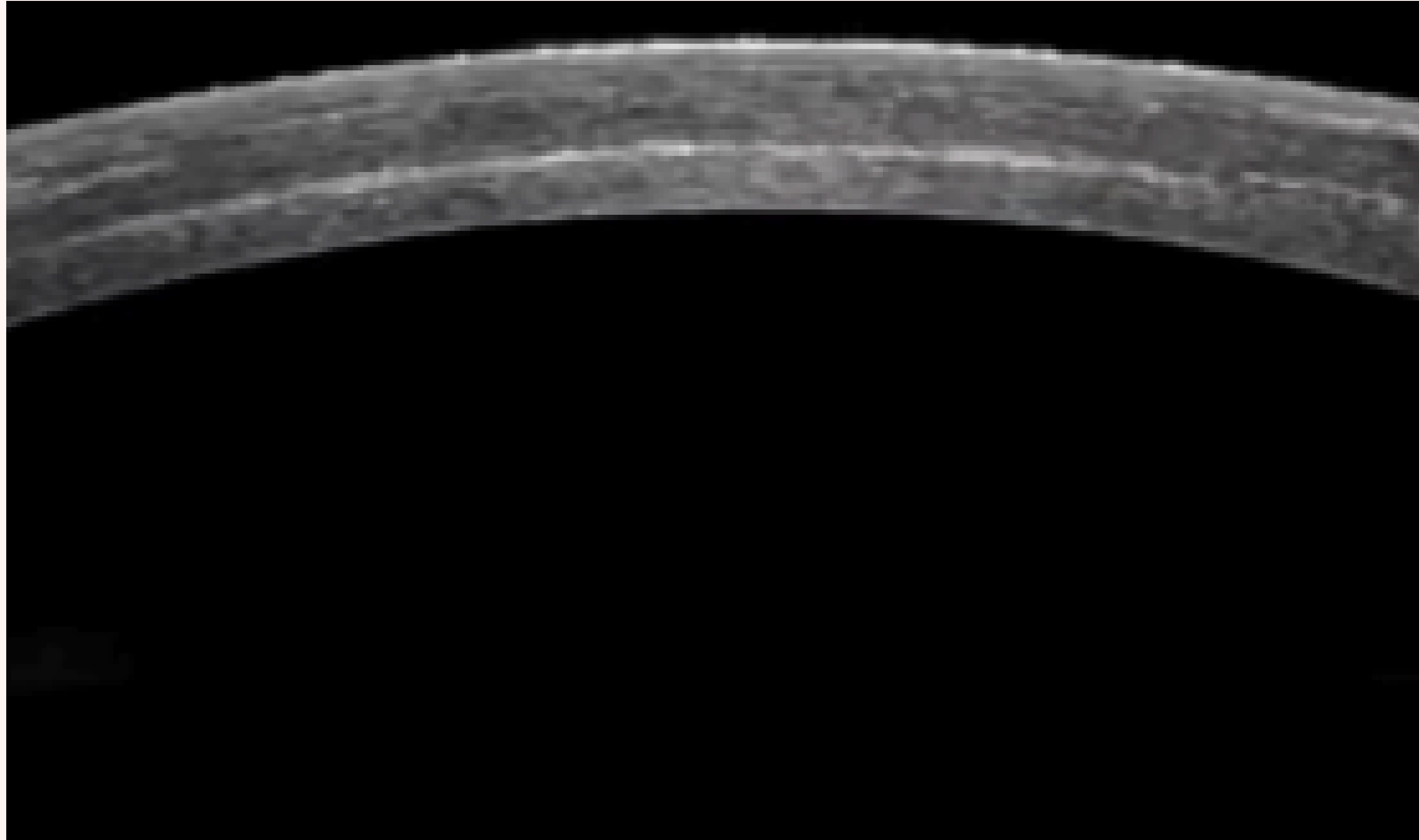
MANAGEMENT

➤ (RE) CORNEAL COLLAGEN CROSS LINKING WITH RIBOFLAVIN



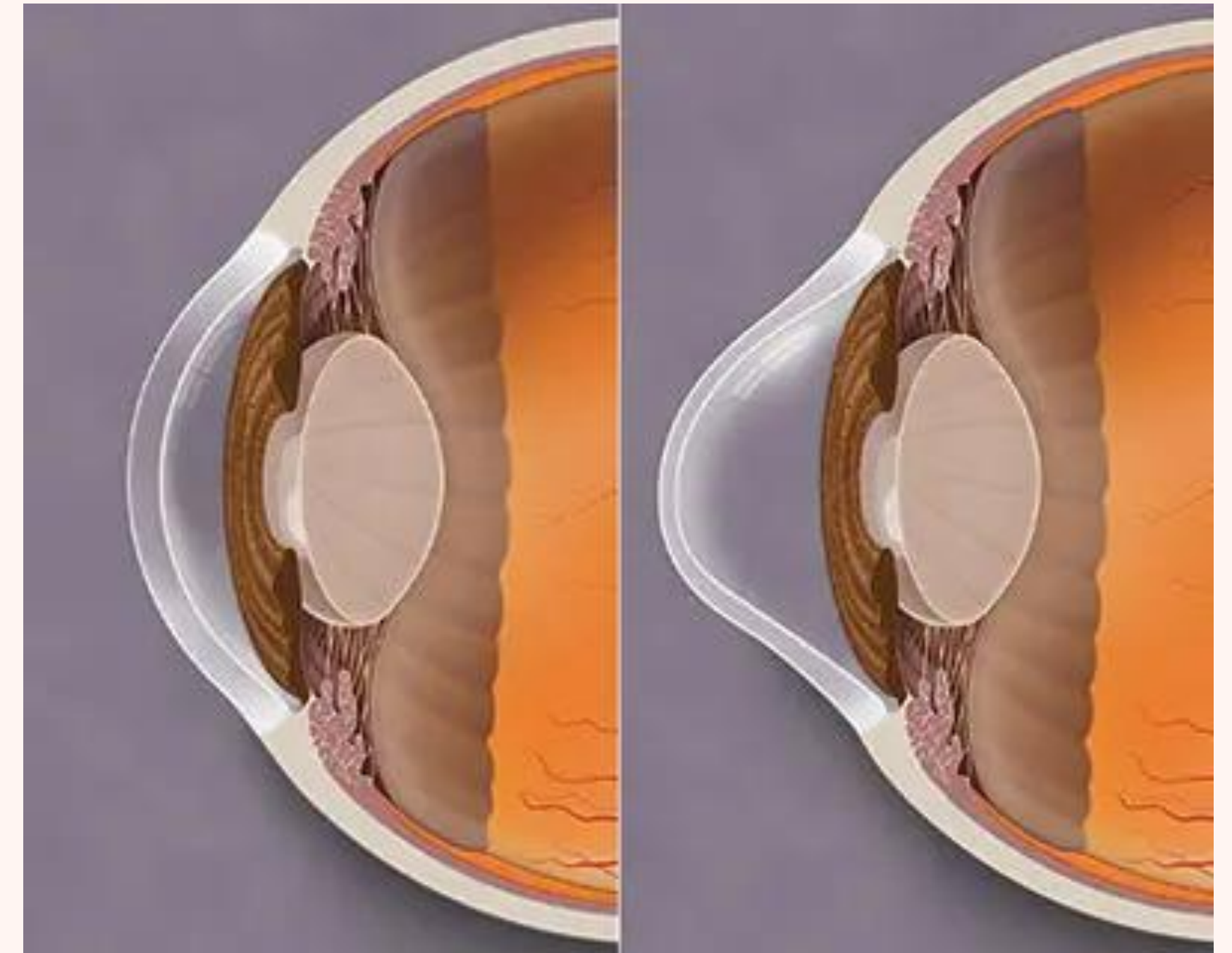


POST OPERATIVE AS OCT



DISCUSSION

- Keratoconus is an uncommon corneal disorder where the central or paracentral cornea undergoes **progressive** thinning and steepening causing irregular astigmatism.^[1]
- Etiology is unknown. However, it is associated with allergic eye disease, Down's Syndrome, Leber's congenital amaurosis and Ehler's Danlos connective disorders. The hereditary pattern is neither prominent nor predictable, but positive family histories have been reported.^[2]
- One of the major risk factor is eye rubbing associated with atopy or vernal keratoconjunctivitis.



DISCUSSION CONT.

- The prevalence of keratoconus is reported to be 2300 per 100,000 population(0.0003%-2.3%)^[3]
- Symptoms include progressive changes in vision not easily corrected with glasses.
- Diagnosis is made on the basis of keratometry and tomography scans.
- The goals of treatment are to provide functional visual acuity and to halt changes in the corneal shape if progressing.

Non-Surgical Rehabilitation	Surgical Intervention
<ul style="list-style-type: none">• Spectacles• Contact lenses<ul style="list-style-type: none">– Soft lenses– RGP lenses• Special lenses<ul style="list-style-type: none">– Rose K lenses– Mini Scleral Lens– Piggyback lenses	<ul style="list-style-type: none">• Corneal Collagen Cross linking• Intracorneal Ring segments• Lamellar keratoplasty<ul style="list-style-type: none">– DALK– Overlay Techniques• Penetrating keratoplasty

3. Hashemi H, Heydarian S, Hooshmand E, et al. The Prevalence and Risk Factors for Keratoconus: A Systematic Review and Meta-Analysis. Cornea. 2020;39(2):263-270.

DISCUSSION CONT.

- For visual improvement and astigmatism management, spectacles can be used in mild cases.
- Rigid gas permeable contact lenses are needed in the majority of cases to neutralize the irregular corneal astigmatism. The majority of patients that can wear hard or gas-permeable contact lenses have a dramatic improvement in their vision.^[4]
- The primary treatment for progressive keratoconus, or keratoconus in young patients likely to progress at some point, is [corneal collagen cross-linking](#).^[5]

4. ↑ Lim L, Lim EWL. A Review of Corneal Collagen Cross-linking - Current Trends in Practice Applications. Open Ophthalmol J. 2018;12:181-213.

5. Gokul A, Patel DV, Watters GA, McGhee CNJ. The natural history of corneal topographic progression of keratoconus after age 30 years in non-contact lens wearers. Br J Ophthalmol. 2017;101(6):839-844.

TAKE HOME MESSAGE

- Frequent change of glasses in young patients
- Vision not improving with glasses
- Prolonged allergic reaction
- Mixed astigmatism



THANK YOU
