



A Case of a KC

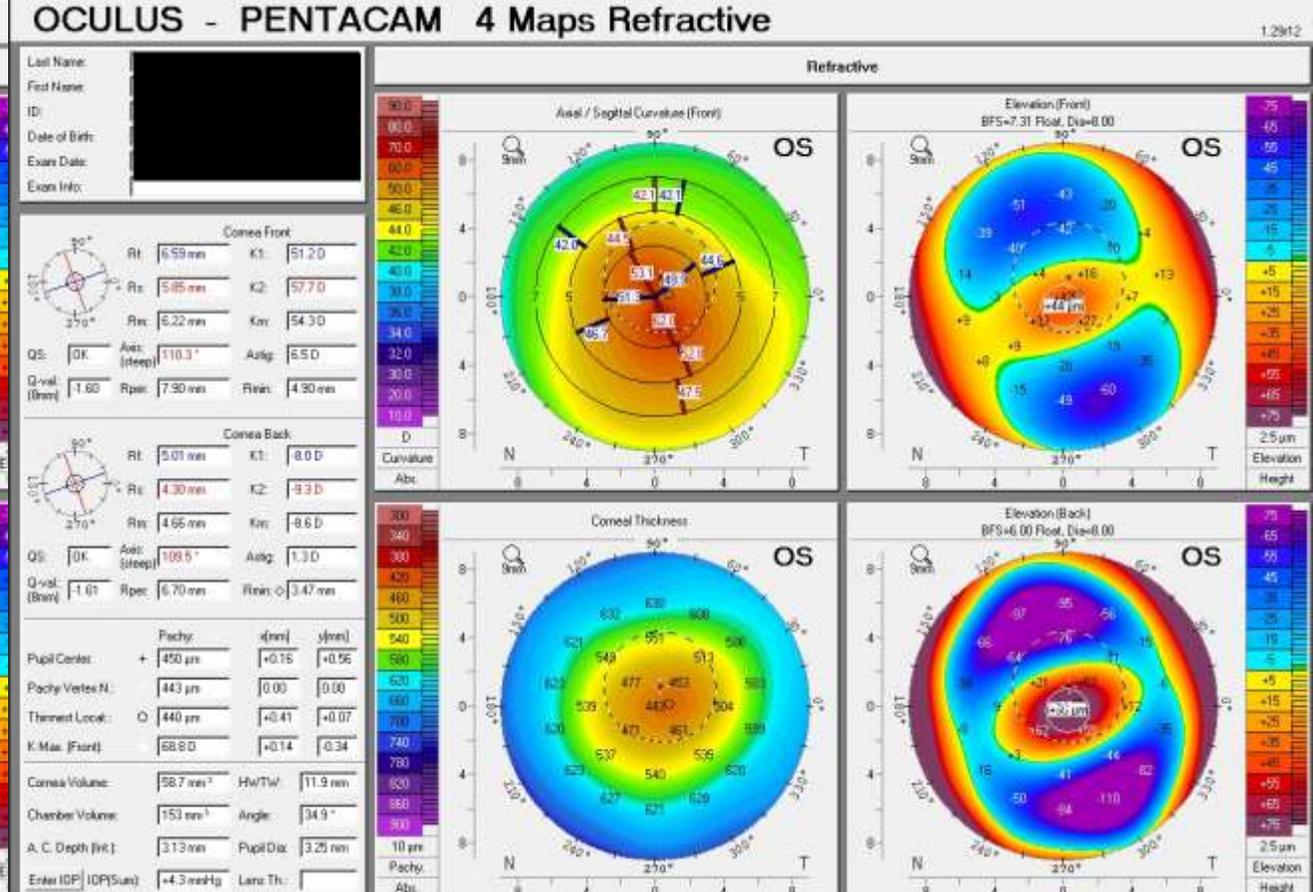
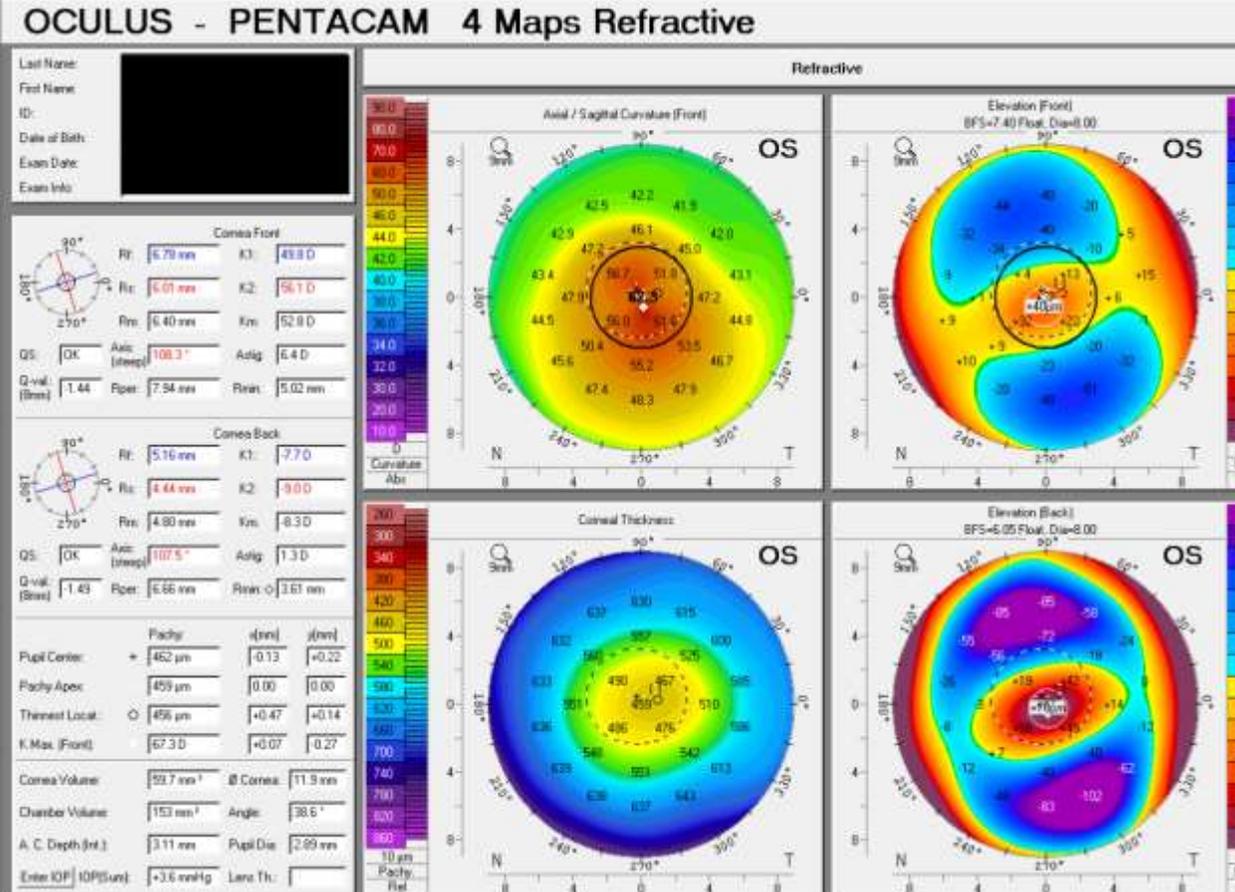
Mr Ali Mearza
Consultant Ophthalmologist
OCL Vision



History

- Date of visit June 2025
- 49 yr old female
- Known KC L>R since 2023 (seen at OCL) – no sx at that visit
- Progression noted LE since last visit 2 years ago
- Eye rubber
- Non tol to RGPs, Specs don't work
- GH – good – no Meds
- No other symptoms

		Distance VA			
Right eye		Unaided		Unaided	Left eye
		0.20		0.82	
<hr/>					
Right eye		Autorefraction			Left eye
(SE: -2.63)	-0.25 / -4.75 x 136			-6.75 / -8.50 x 21	(SE: -11.00)
<hr/>					
Right eye			Subjective Dist.		Left eye
(SE: -0.75)	+0.50 / -2.50 x 102	0.06		+1.50 / -6.75 x 100	0.72 (SE: -1.88)
<hr/>					
P.Hole: no improvement					
		Subjective Near			
		Add +1.25	N6	Add +1.25	N24



2023

Kmax 67.3D
 K2 56.1D
 CCT 456

Right eye
 (SE: -0.13) +0.25 / -0.75 x 80 0.00 **Subjective Dist.** +1.50 / -6.75 x 120
 Add +0.75 N5 **Subjective Near** Add +0.75

Left eye
 0.58 (SE: -1.88)

2025

Kmax 68.8D
 K2 57.7D
 CCT 440

Right eye
 (SE: -0.75) +0.50 / -2.50 x 102 0.06 **Subjective Dist.** +1.50 / -6.75 x 100
 Add +1.25 N6 **Subjective Near** Add +1.25 N24

Left eye
 0.72 (SE: -1.88)
 P.Hole: no improvement



Plan

Comments

Marked keratoconus in the left eye with intolerance of contact lenses. Today, we discussed the option of the left Xenia corneal collagen implant to improve the corneal shape and provide more support in the left eye. This would be a step prior to corneal transplantation and certainly worth proceeding with given that this is much less invasive and the implant can be removed if needed. The procedure involves the creation of a pocket within the cornea with a laser and then insertion of the implant thereafter and this is done with local anaesthetic eye drops. We'll be in touch to confirm the arrangements for you in the near future and please do get in touch should you have any further queries or questions in the meantime.

What is XENIA?

XENIA is a **corneal implant** made of natural corneal collagen of animal (porcine) origin.

The XENIA material, natural corneal collagen, has been successfully validated by Mother Nature – with **a follow-up of more than 450 million years** with excellent results.^[1]

The XENIA material undergoes a special process to remove foreign cells including antigens. This special process is called **decellularization**.

It has been routinely used for more than 30 years in cardiology (artificial heart valves/bioprostheses) and has helped countless patients with heart problems who needed heart valve replacement.

XENIA is like “the real thing”: it is made from **natural corneal collagen**, just like traditional corneal transplants used in millions of successful corneal procedures for more than 100 years.

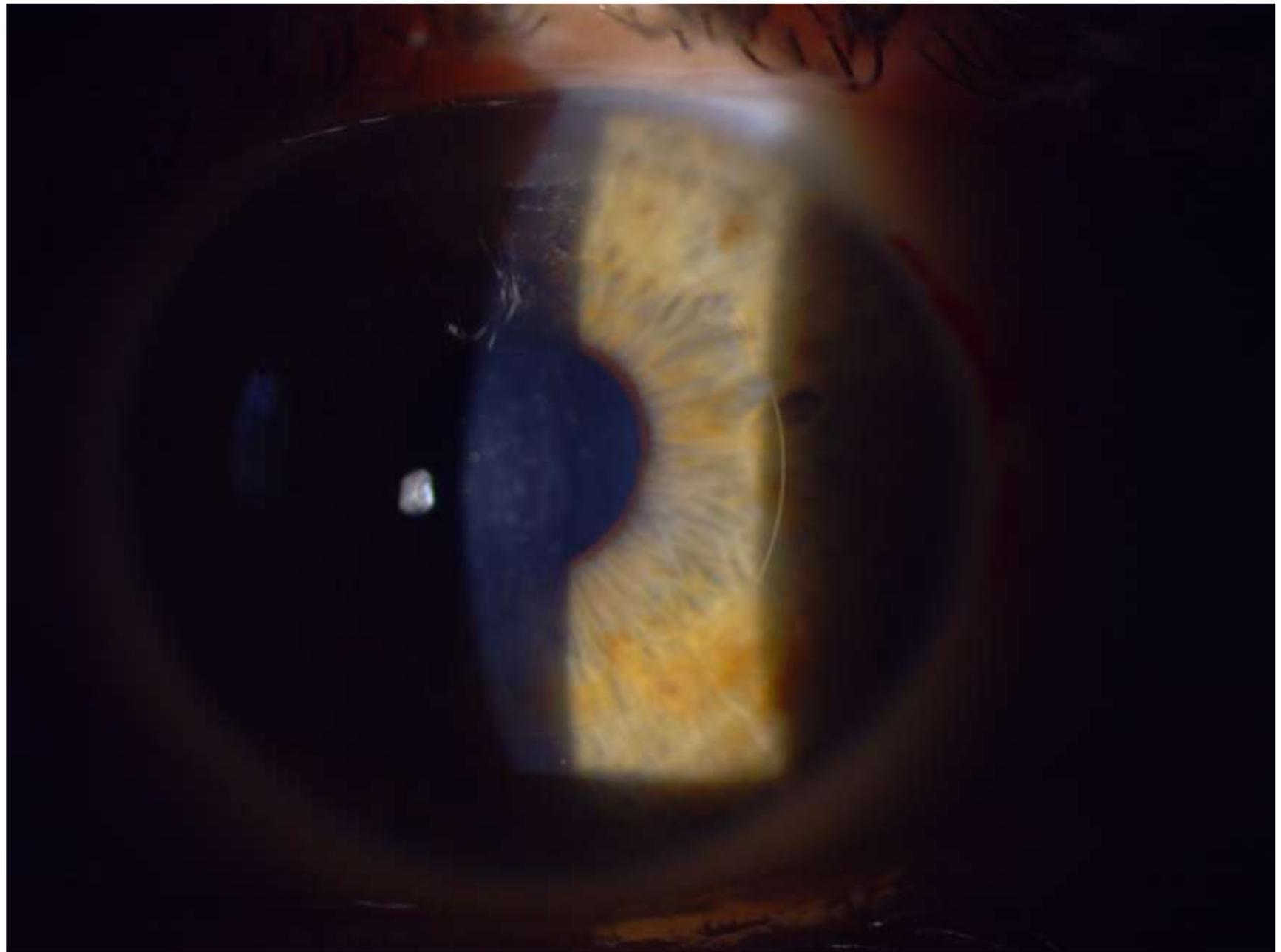
XENIA is in fact “even better than the real thing”: a human transplant still contains corneal cells from the donor (e.g. keratocytes), while the XENIA material is completely devoid of foreign cells and, hence much more **tolerable**.

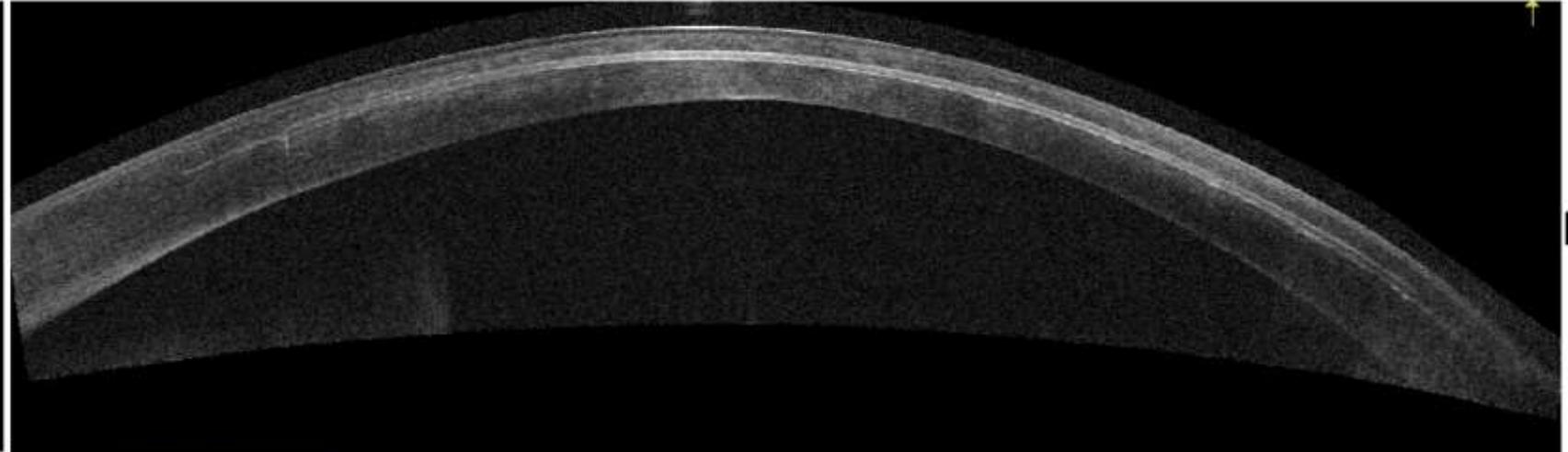
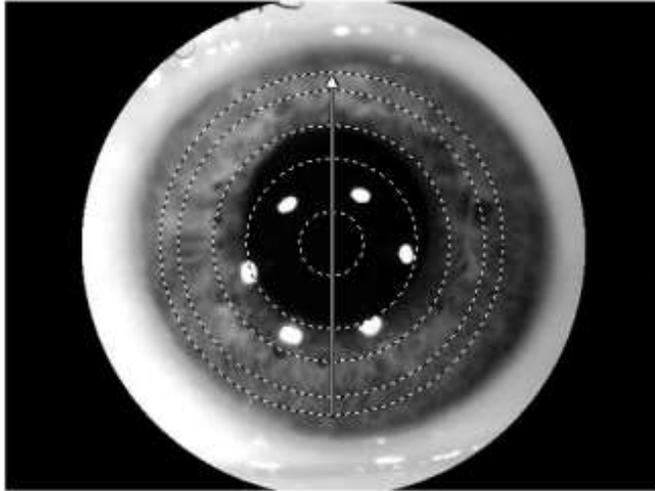
XENIA is a **custom-made** product that is available only on a physician's prescription and is exclusively manufactured for the individual patient.

The XENIA Corneal Implant is MDR-approved as a custom-made device, and in full compliance with the Regulation (EU) 2017/745.

7 Days Post

Distance VA		
	Pinhole	Left eye
	0.54	
Autorefraction		Left eye
	-2.00 / -4.25 x 51	(SE: -4.13)
Subjective Dist.		Left eye
	-3.00 / -4.50 x 36	0.54 (SE: -5.25)





Pachymetry
Pachymetry statistics within central 5 mm

SN-I(2-5mm):	-63	S-I(2-5mm):	-51
Min:	493	Location Y:	208
Min-Median:	-61	Min-Max:	-128

Min thickness at(-0.458mm, 0.208mm) indicated as *

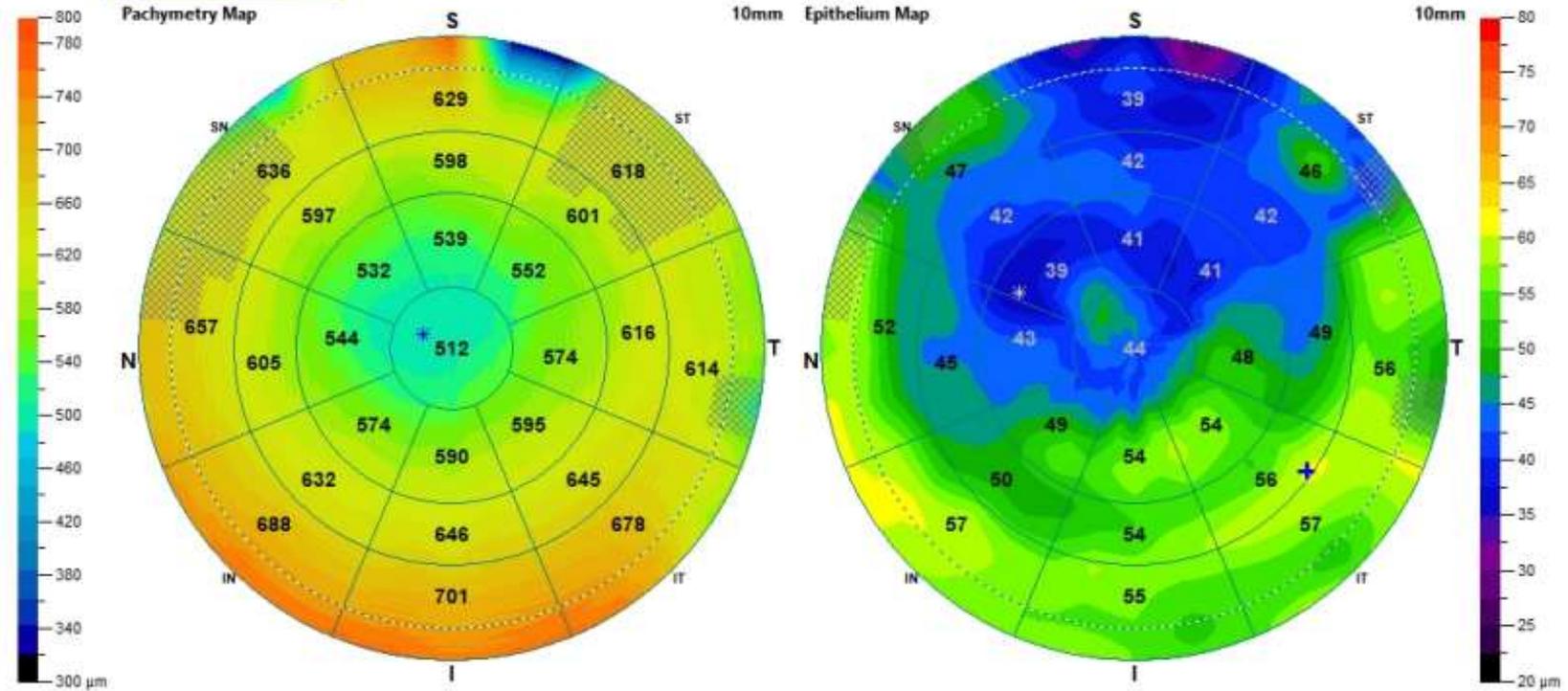
Epithelium
Epithelium statistics within central 7 mm

S (2-7mm):	41	I (2-7mm):	54
Min:	36	Max:	60
Std Dev:	5.8	Min-Max:	-24

Min/Max thickness indicated as */+

Map Diameters
2.0 / 5.0 / 7.0 / 9.0 / 10.0 mm

Highlight Tool Stroma Map



PRE SX

Kmax 68.8D
K2 57.7D
CCT 440

POST SX – 7 days

Kmax 53.5D
K2 50.6D
CCT 499

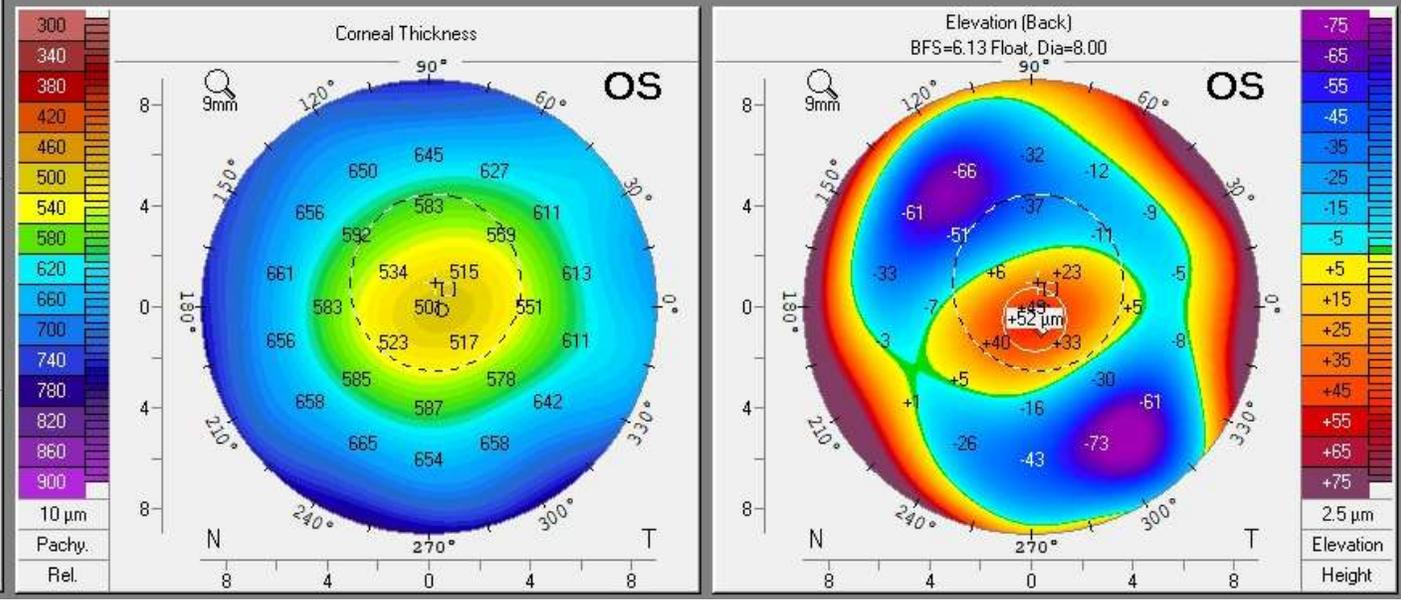
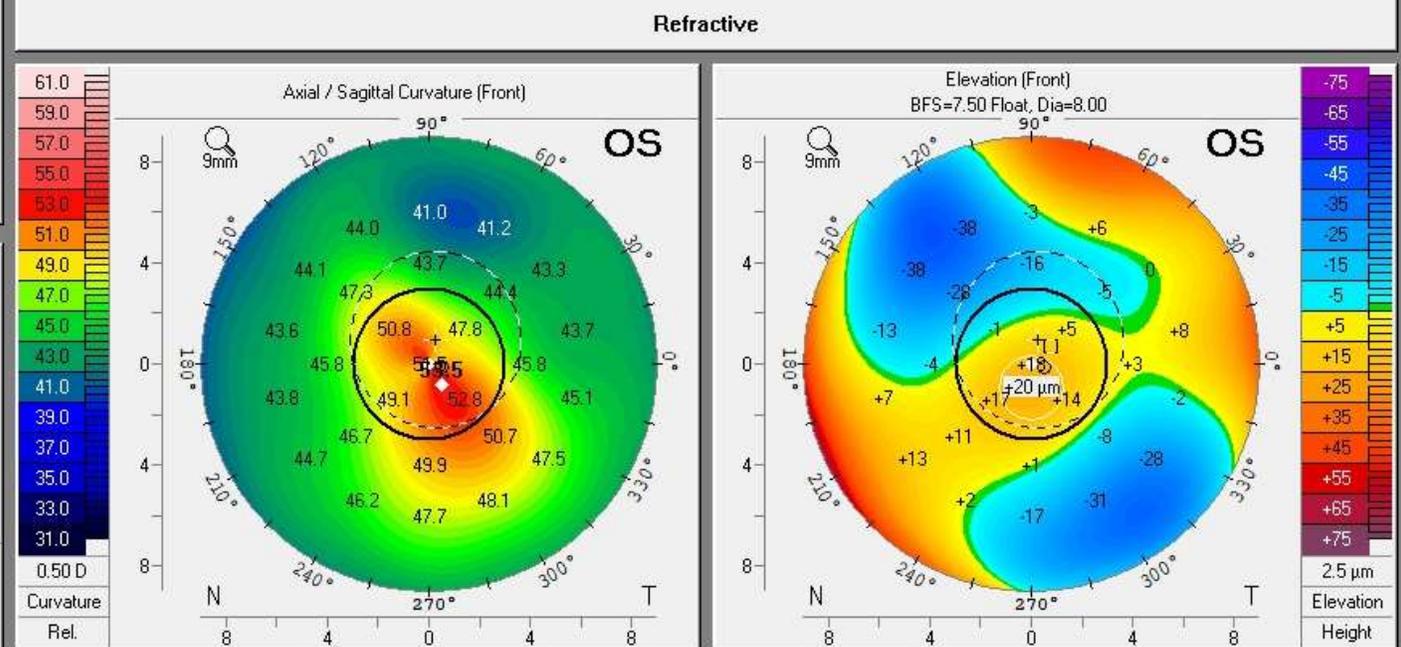
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First Name: [Redacted]
ID: [Redacted]
Date of Birth: [Redacted]
Exam Date: [Redacted]
Exam Info: [Redacted]

Cornea Front			
Rf:	7.17 mm	K1:	47.1 D
Rs:	6.67 mm	K2:	50.6 D
Rm:	6.92 mm	Km:	48.8 D
QS:	<input checked="" type="checkbox"/> OK	Axis: (steep)	125.9 °
Q-val: (8mm)	-0.81	Rper:	7.80 mm
		Rmin:	6.31 mm
Astig: 3.5 D			

Cornea Back			
Rf:	5.46 mm	K1:	-7.3 D
Rs:	4.94 mm	K2:	-8.1 D
Rm:	5.20 mm	Km:	-7.7 D
QS:	<input checked="" type="checkbox"/> OK	Axis: (steep)	115.5 °
Q-val: (8mm)	-1.21	Rper:	6.66 mm
		Rmin:	4.22 mm
Astig: 0.8 D			

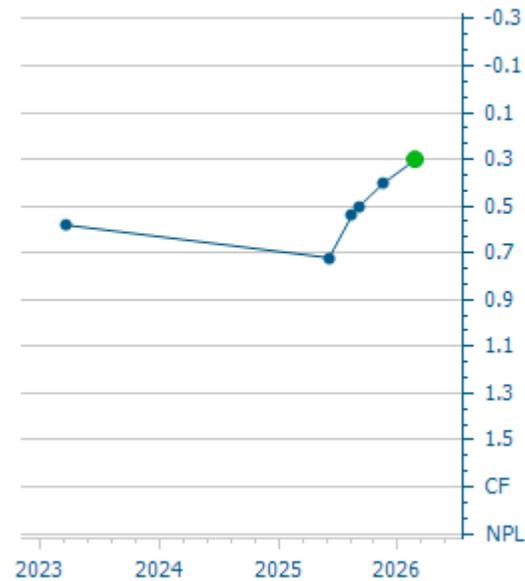
	Pachy:	x[mm]	y[mm]
Pupil Center:	+ 508 μm	+0.14	+0.47
Pachy Vertex N.:	- 501 μm	0.00	0.00
Thinnest Locat.:	○ 499 μm	+0.27	-0.07
K Max. (Front):	● 53.5 D	+0.27	-0.40

Cornea Volume:	61.1 mm ³	HWTW:	11.9 mm
Chamber Volume:	158 mm ³	Angle:	36.4 °
A. C. Depth (Int.):	3.03 mm	Pupil Dia:	3.43 mm
Enter IOP IOP(Sum):	+2.0 mmHg	Lens Th.:	



	K max	K2	CCT	RX	
Pre	68.8	57.7	440	+1.50 / -6.75 x 100	0.72
7 days post	53.5	50.6	499	-3.00 / -4.50 x 36	0.54
1/12 post	52.2	50.6	478	-3.00 / -4.50 x 36	0.50
3/12 post	51.5	49.4	496	-3.00 / -4.50 x 30	0.40
6/12 post	51.7	49.6	496	-3.25 / -4.00 x 30	0.30

Left 0.30 Refraction



Last Name: [Redacted]
 First Name: [Redacted]
 ID: [Redacted]
 Date of Birth: [Redacted]
 Exam Date: [Redacted]
 Exam Info: [Redacted]

Cornea Front

R: 6.53 mm K1: 51.2 D
 R: 5.05 mm K2: 57.7 D
 R: 6.22 mm Kavg: 54.3 D

OS: OK Axis (steep): 110.3° Avg: 6.5 D

Q-val: 1.60 Rpec: 7.00 mm Rmin: 4.90 mm

Cornea Back

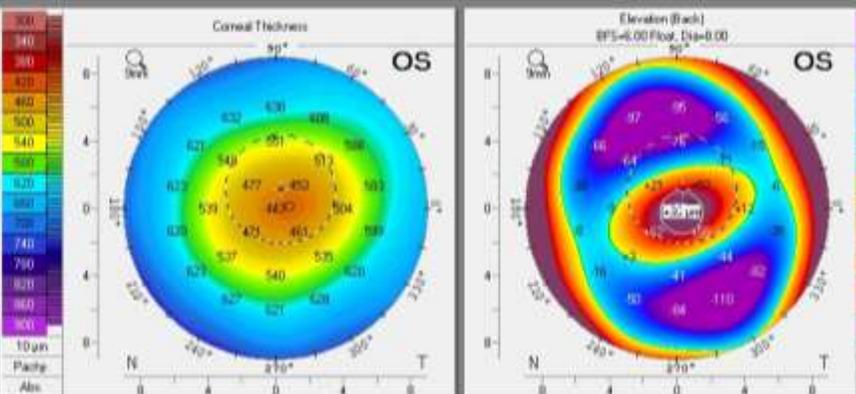
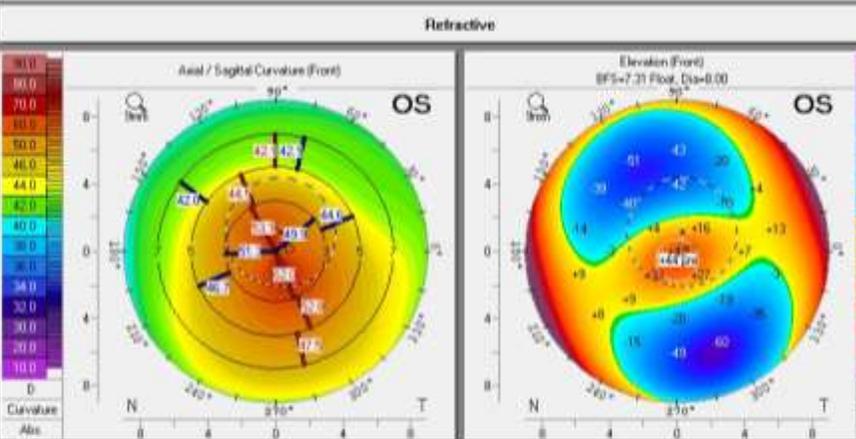
R: 5.01 mm K1: 60.0 D
 R: 4.30 mm K2: 9.3 D
 R: 4.66 mm Kavg: 8.6 D

OS: OK Axis (steep): 108.5° Avg: 1.3 D

Q-val: 1.81 Rpec: 6.70 mm Rmin: 3.47 mm

Pachy: 4(mm) 4(µm)
 Pupil Center: + 400 µm +0.16 +0.96
 Pachy Vertex N: 443 µm 0.00 0.00
 Thinnest Local: 440 µm +0.41 +0.07
 K Max (Front): 68.0 D +0.14 -0.34

Cornea Volume: 58.7 mm³ HWTW: 11.9 mm
 Chamber Volume: 153 mm³ Angle: 34.5°
 A.C. Depth (Int.): 3.13 mm Pupil Dia: 3.25 mm
 Enter IOP: 10(5)um +4.3 mmHg Lens Th: [Redacted]



Last Name: [Redacted]
 First Name: [Redacted]
 ID: [Redacted]
 Date of Birth: [Redacted]
 Exam Date: [Redacted]
 Exam Info: [Redacted]

Cornea Front

R: 7.31 mm K1: 46.2 D
 R: 6.80 mm K2: 49.6 D
 R: 7.05 mm Kavg: 47.8 D

OS: OK Axis (steep): 125.8° Avg: 3.5 D

Q-val: 0.70 Rpec: 7.80 mm Rmin: 6.53 mm

Cornea Back

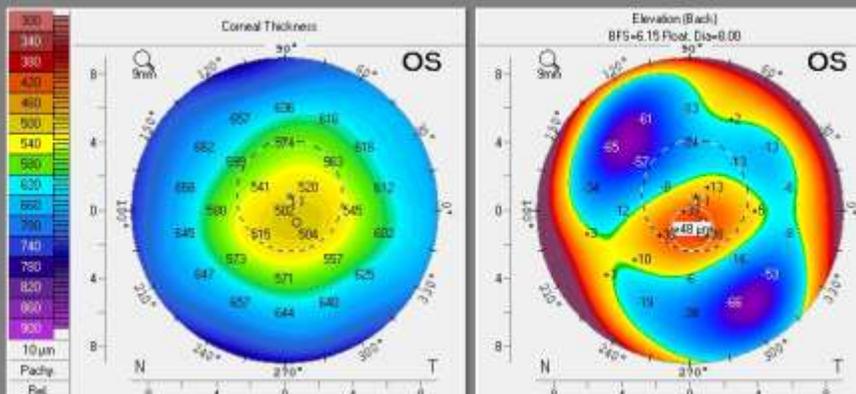
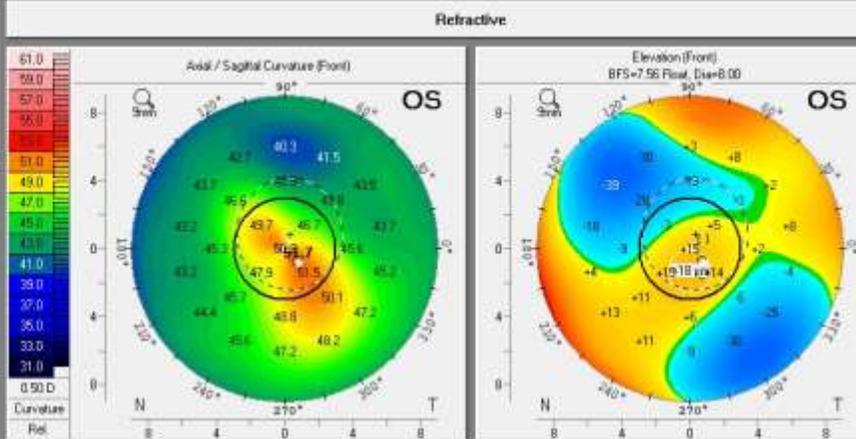
R: 5.57 mm K1: 7.2 D
 R: 5.15 mm K2: 7.0 D
 R: 5.36 mm Kavg: 7.5 D

OS: OK Axis (steep): 123.7° Avg: 0.6 D

Q-val: 1.09 Rpec: 6.68 mm Rmin: 4.40 mm

Pachy: 4(mm) 4(µm)
 Pupil Center: + 512 µm +0.15 +0.43
 Pachy Vertex N: 502 µm 0.00 0.00
 Thinnest Local: 496 µm +0.33 0.33
 K Max (Front): 51.7 D +0.40 -0.40

Cornea Volume: 60.7 mm³ HWTW: 11.9 mm
 Chamber Volume: 151 mm³ Angle: 35.9°
 A.C. Depth (Int.): 2.98 mm Pupil Dia: 3.19 mm
 Enter IOP: 10(5)um +1.5 mmHg Lens Th: [Redacted]



Pre TX 2025

Kmax 68.8D
 K2 57.7D
 CCT 440

Right eye
 (SE: -0.75) +0.50 / -2.50 x 102 0.06 **Subjective Dist.** +1.50 / -6.75 x 100

Left eye
 0.72 (SE: -1.88)
 P.Hole: no improvement

Add +1.25 N6 **Subjective Near** Add +1.25 N24

6/12 Post TX

Kmax 51.7D
 K2 49.6D
 CCT 496

Left eye
Subjective Dist. -3.25 / -4.00 x 30 0.30 (SE: -5.25)

Subjective Near Add +1.50 N10

KC Discussion Points for GOC Peer Review

Progression & Monitoring

1. What defines documented KC progression requiring referral?
2. How often do you monitor KC patients and what parameters?
3. Why is eye rubbing cessation the most critical intervention?

CXL Fundamentals

4. What is CXL's primary goal - stabilisation or vision improvement?
5. What are the minimum requirements for CXL? (CCT, age, progression)
6. What realistic outcomes should patients expect from CXL?

Treatment Options

7. When would you choose: RGP/sclerals vs CXL vs ICRS vs transplant?

Understanding Xenia

9. How does Xenia differ from CXL in mechanism and goals?
10. What does "additive procedure" mean?
11. What is the difference between Xenia and Keranatural procedure?

This Case Analysis

12. Why Xenia instead of standard CXL or ICRS+CXL?
13. 17D flattening - typical or exceptional?

Clinical Management

15. What are the key complications? (stromal melt rate?)
16. Post-op monitoring timeline and red flags?
17. Can patients wear CLs after Xenia?