RLES AI® IRREGULAR CORNEA REPORT
COMPLEX CASE: FROM WARPAGE TO SURGERY — DEMO

REFRACTIVE LASER EYE SURGERY – ARTIFICIAL INTELLIGENCE ASSISTED

DEMO REPORT — FICTITIOUS PATIENT

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1 · THE CASE — A 'KERATOCONUS' THAT WAS A LENS IMPRINT

DEMO PATIENT E (fictitious) · 27 · soft-lens wearer who sleeps in her lenses. First topography: inferotemporal steepening, SIf 1.62, inter-zone cylinder spread 1.4 D, axis rotation 14°, apex-to-neighbour gap 9 D — 5 of Rule 13's nine indicators positive → IRREGULAR. On these maps the patient could be mislabelled keratoconus and rejected — or worse, ablated on a non-permanent surface. The right answer is neither: stabilise the surface, re-measure, then plan.

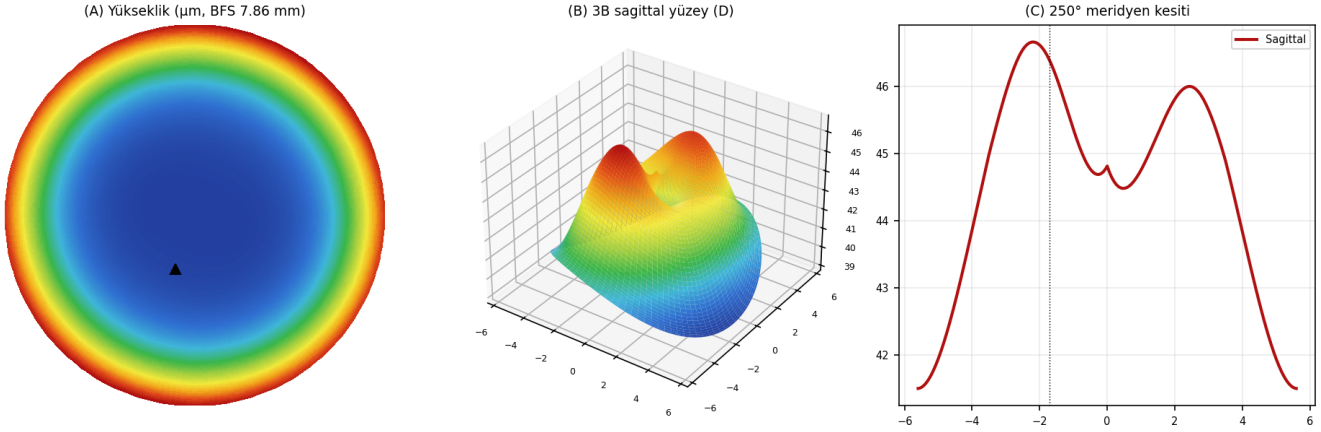

Figure 1 — Surface reconstruction of the FIRST measurement (Rule 13 standard visual): (A) elevation map · (B) 3-D surface — a decentred inferotemporal mound · (C) 250° meridian section. This visual is a reconstruction from the device map, not raw device output. 1 D ≈ 10 µm.

REKONSTRÜKSİYON DİPNOTU

Bu görsel, cihaz çıktısındaki sayısal değerlerden türetilmiş bir rekonstrüksiyondur; ham cihaz çıktısı değildir. 1 D ≈ 10 µm.

1b · ALL NINE INDICATORS — WITH FIRST-SCAN VALUES

Indicator (threshold)	Value	Positive?
|SIf| (≥1.4 D)	1.62 D	✓
Ø3–Ø7 cylinder spread (≥0.75)	1.40 D	✓
Inter-zone axis rotation (≥10°)	14°	✓
Apex − Sim-K gap (≥2.5 D)	3.1 D	✓
Apex − neighbour lowest K (≥5 D)	9 D	✓
RMS/A device flag	none	—
LSA (≥1.0 D)	0.7 D	—

Indicator (threshold)	Value	Positive?
Serial pachymetry drop (≥15 µm)	no prior scan	not assessable — NOT assumed normal
Autoref cylinder repeat (≥0.25)	0.12 D	—

2 · THE STABILISATION PROTOCOL & SECOND MEASUREMENT

Indicator	1st scan	Day 15	Band
Rule 13 positive indicators	5/9 — IRREGULAR	0/9 — CLEAR	resolved
SIf	1.62 D	0.9 D	normal
Thinnest pachymetry	512 µm	536 µm	+24 µm — lens oedema resolved
Two consecutive concordant scans	—	✓ (12. ve 15. gün)	✓

The criterion is TOPOGRAPHIC STABILITY, not a fixed interval: lenses stopped, unpreserved tears given, and the day-12 and day-15 scans came back concordant. The posterior surface was normal throughout — one of the key findings separating warpage from keratoconus.

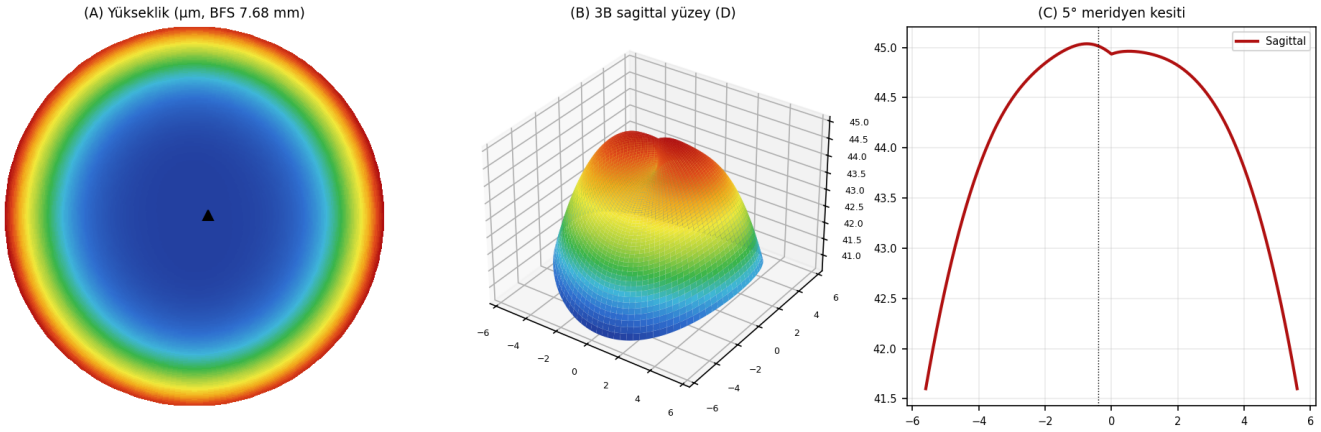

Figure 2 — THE SAME EYE, DAY 15: the reconstruction has normalised — the decentred mound is gone, a regular 0.90 D bow-tie remains. Read side by side with Figure 1: shape change without tissue loss is the proof that this was WARPAGE, not keratoconus.

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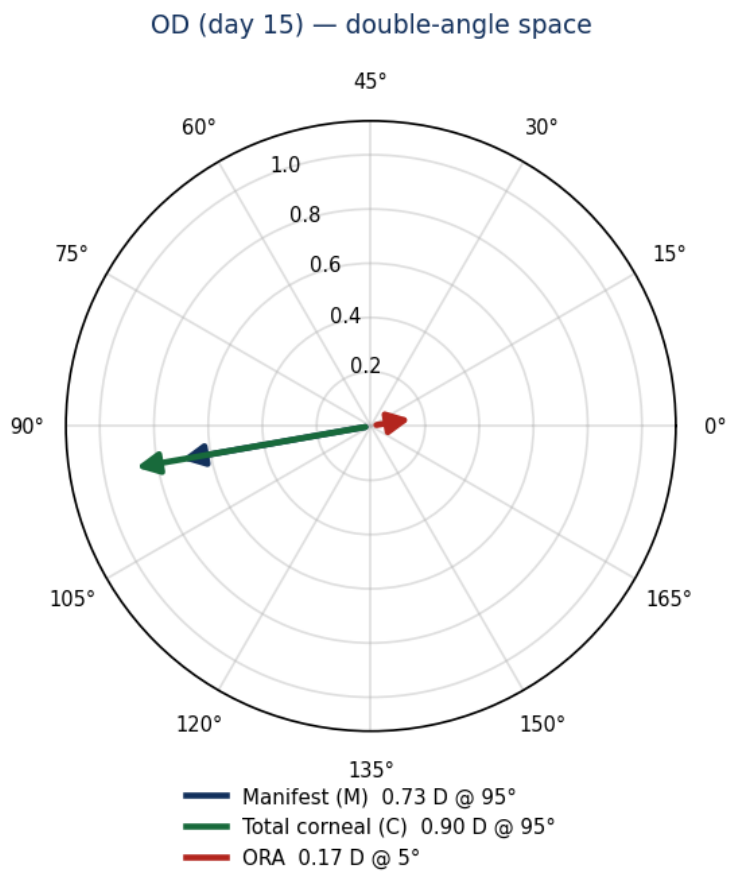

Figure 3 — Rule 16 Alpins vector diagram (on the STABLE day-15 data): ORA 0.17 D — GREEN; the cylinder is corneal and the plan vector-consistent. On the first (warped) map this calculation would be meaningless — vector analysis is only run on a stable surface.

3 · NOW PLANNABLE — THE SURGICAL PLAN

Parameter	Plan
Procedure	Q-LASIK — on the STABLE day-15 values (−2.75 −0.75 ×95)
Tissue budget	pachy 536 · flap 100 · OZ 6.5 · ablation 53 µm → RSB 383 ✓ · RCT 483 ✓ · PTA 28.5% ✓
Condition	no lens wear until the morning of surgery; the plan is locked to the day-15 map

CONCLUSION

A patient the first map would have rejected (or wrongly ablated) is surgery-ready after 15 days of stabilisation, with a plan that passes every floor. The decision rests with the surgeon (Rule 11).

SURGEON'S SIGNATURE & AI VERIFICATION

This report is clinical decision support; the plan is finalised by surgeon approval. Signature: _____ Date: _____