



# THE UTILIZATION OF ROSE K2 POST GRAFT (™) LENSES IN THE MANAGEMENT OF CORNEAL ECTASIA AFTER PENETRATING KERATOPLASTY

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## INTRODUCTION

Very few cases of managing corneal ectasia after penetrating keratoplasty (PK) for blunt ocular trauma have been documented. This case highlights the successful use and fit of Rose K2 Post Graft(™) lenses in a patient with corneal ectasia following posterior penetrating keratoplasty who previously failed with scleral lenses.

## BACKGROUND

Recurrent ectasia in penetrating grafts was previously reported as a rare occurrence; however recent studies suggest the incidence is usually bilateral and as high as 11% (1). Recurrent ectasia is usually diagnosed on average two decades after penetrating keratoplasty (PK) (2). Patients will suffer from varying degrees of disability including glare, halos, diplopia, reduced visual acuity, and ghosting (3). Treatment options include spectacle or contact lens correction, or in some cases repeated penetrating keratoplasty.

## CASE REPORT

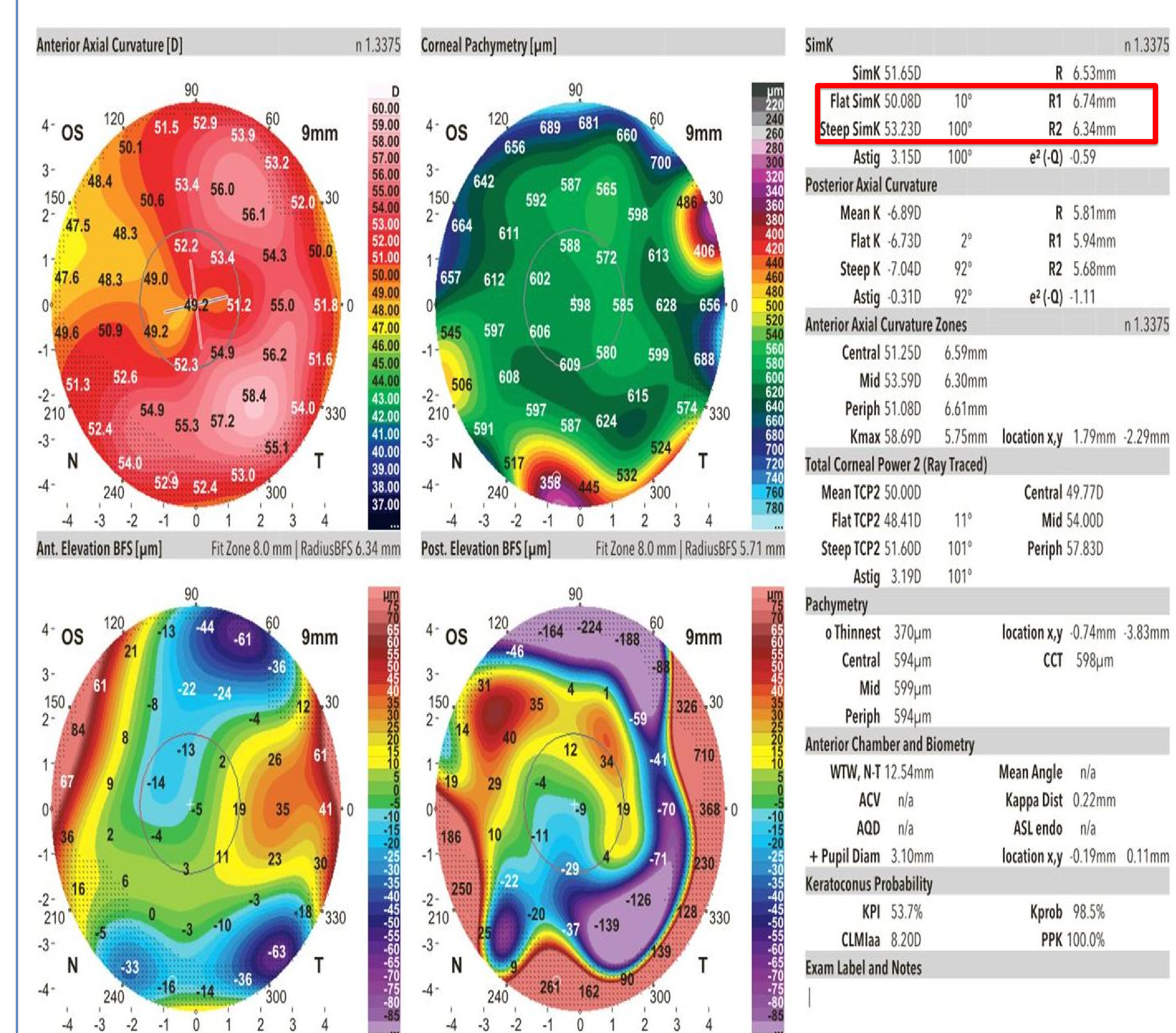
**Patient Demographics:** 78 year old Hispanic male presents for a contact lens re-fitting in his left eye, after previously being unsuccessfully fit with Xcel Atlantis™ (mini-scleral) lenses.  
**Chief Complaint:** Blurred and double vision in his left eye only  
**Ocular History:** The patient had undergone a posterior penetrating keratoplasty (PK) in his left eye in 1987, secondary to blunt ocular trauma at the age of 19.  
**Medical History:** Unremarkable  
**Allergies:** No known drug allergies

## CLINICAL EXAM

	OD	OS
ENTERING VISUAL ACUITY WITHOUT CORRECTION (SNELLEN)	20/30	Counting Fingers at 2 Feet, Pinholed to 20/250
AUTO-REFRACTION	+0.50-1.25x080	-10.25-6.75x175
KERATOMETRY	Average Corneal Thickness	FLAT K = 49.62D STEEP K = 53.50
PUPILS	Equal, Round, Reactive to light, No Afferent Pupillary Defect	Equal, Round, Reactive to light, No Afferent Pupillary Defect
EOMS	Full OU	
ANTERIOR SEGMENT	See Table 2	See Table 2
POSTERIOR SEGMENT	CUP/DISC: 0.30, no edema, no pallor, no thinning  Macula: normal macula, no subretinal fluid, no hemorrhage  No holes, tears, or detachments 360 degrees	CUP/DISC: 0.30, no edema, no pallor, no thinning  Macula: normal macula, no subretinal fluid, no hemorrhage  No holes, tears or detachments 360 degrees

## TABLE 2: ANTERIOR SEGMENT

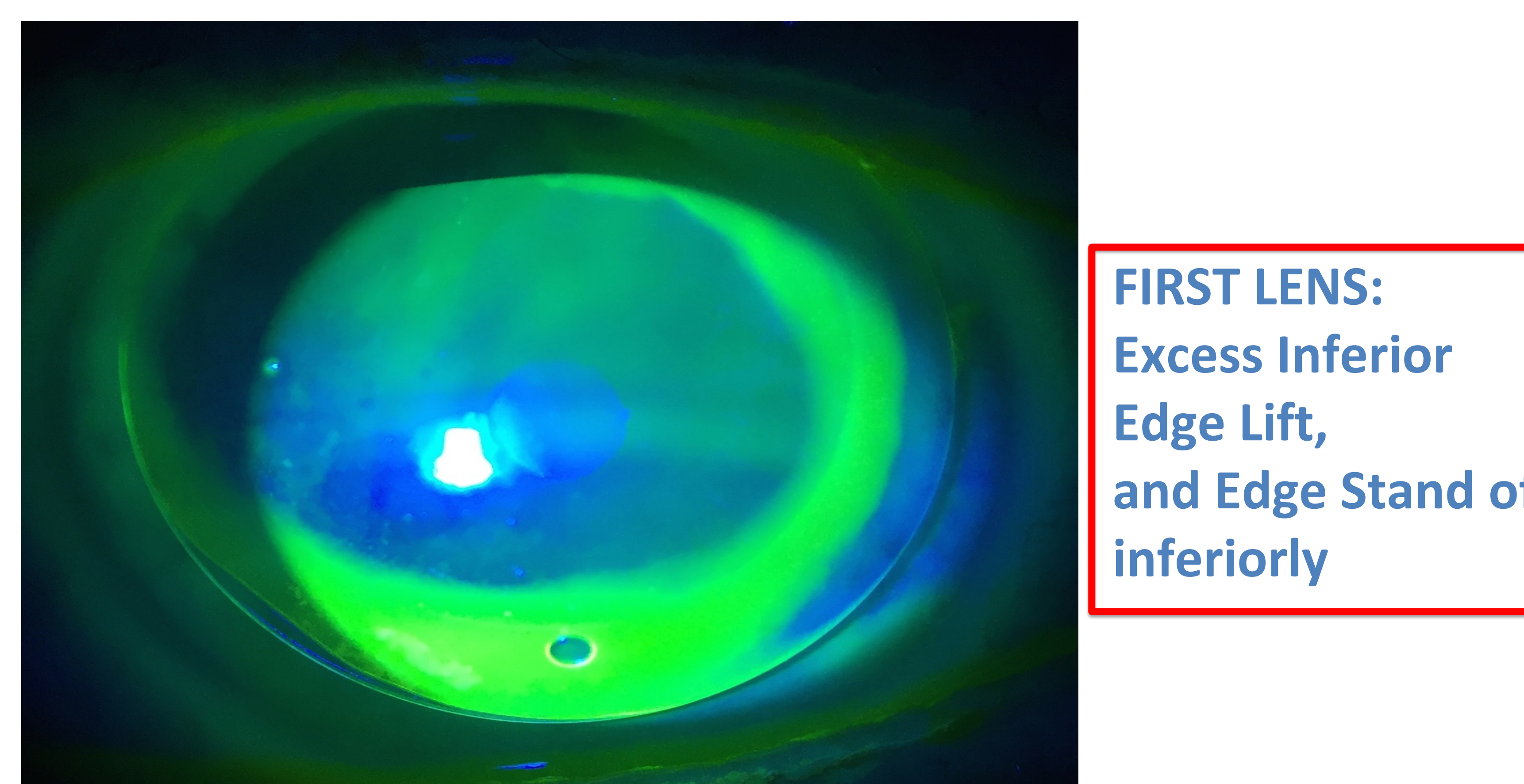
	OD	OS
LIDS, LASHES, CONJUNCTIVA	UNREMARKABLE	UNREMARKABLE
CORNEA	UNREMARKABLE	CLEAR PKP GRAFT with inferior ectasia and grade 3+ guttata in the graft
IRIS	WITHIN NORMAL LIMITS	WITHIN NORMAL LIMITS
LENS	PCIOL centered	PCIOL with Grade 1 PCO (temporal)



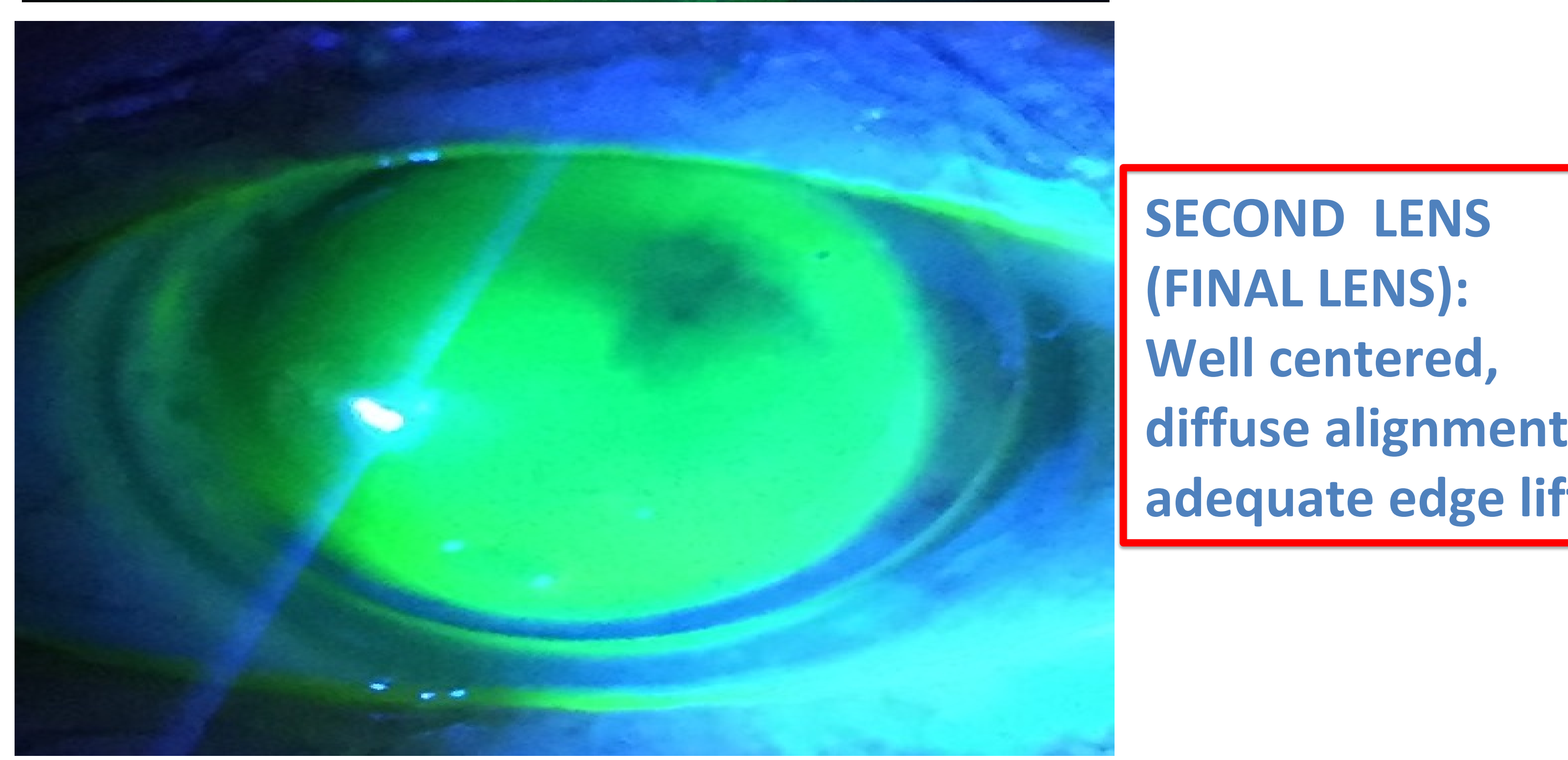
## FIT PARAMETERS

OS	1 <sup>st</sup> LENS	2 <sup>ND</sup> LENS (FINAL LENS)
BASE CURVE	6.2mm, standard peripheral curve	6.1 mm with 1 steep edge, grade 3 ACT
DIAMETER	10.4 mm	10.4mm
POWER	-18.00sph	-13.25sph
VISUAL ACUITY (SNELLEN)	With Over-refraction of +5.00 BCVA: 20/70	20/70
FIT	Well centered; however slightly excessive edge lift and edge stand off inferiorly	Well centered, Diffuse alignment, Adequate edge lift

## TREATMENT AND MANAGEMENT



**FIRST LENS:**  
Excess Inferior Edge Lift, and Edge Stand off inferiorly



**SECOND LENS (FINAL LENS):**  
Well centered, diffuse alignment, adequate edge lift

## DISCUSSION

Corneal ectasia is a progressive, degenerative, and noninflammatory thinning disorder of the cornea(5). As the stromal collagen matrix becomes compromised, the corneal shape is altered resulting in protrusion. The etiology of corneal ectasia can include genetic factors, mechanical factors, enzyme abnormalities, or post-refractive ectasia after LASIK and PRK. Rigid gas permeable lenses have delayed the need for surgery in these patients in approximately 80% to 90.9% of these patients (4). Contact lenses represent the treatment of choice for most patients; however in patients who become contact lens intolerant, or have advanced disease progression with central corneal scarring, surgical intervention is necessary, preferably with deep anterior lamellar keratoplasty (DALK) or penetrating keratoplasty. Recent studies have showed a keratoplasty rate of 11.8% after an 8 year period of follow up and 18.% over a 20 year period(5). In our case, Rose K2 post graft (™) lenses provided a successful fit for our patient and helped alleviate his double vision and improve his BCVA to 20/70.

## CONCLUSION

Close monitoring and co-management with a corneal specialist is important in these patients to check for signs of corneal graft rejection and prevent secondary corneal complications from contact lens use. As the patient's vision improved with the contact lens, a repeat penetrating keratoplasty is not necessary at this time. This patient is being monitored every six months to ensure comfort and proper fit of his new lens.

## REFERENCES

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