

INTRODUCTION

About ⅓ of the general population in the US is inoculated with *S. aureus*, and the prevalence of MRSA colonization is 1.3%₁. A majority of ocular MRSA infections present as mild conjunctivitis or pre-septal cellulitis, with the worst prognosis seen in patients with keratitis₂. Most MRSA infections occur in older populations and are preceded by known risk factors, and despite the presence of an ocular infection, most are not considered sight-threatening. However, little is known regarding ocular MRSA infections that lead to failed transplants, and even less is known regarding scleral or gas permeable contact lens fitting in the setting of a previous bilateral MRSA infection.

CASE STUDY

A 44 year old male with a history of bilateral ocular MRSA infection that led to a failed PKP OD was referred for a contact lens evaluation. The patient presents with no systemic conditions and is on a regimen of Ofloxacin QID and Pred Forte QID OD as directed by a corneal specialist for the past year. The bilateral MRSA infection occurred in 2022 after an attempt to remove a foreign body, followed by the PKP that failed shortly after. The MRSA infection was treated at Will's Eye in PA. Following a bilateral scleral contact lens fitting, lens wear was discontinued OD due to the fragility of the failed PKP transplant, but scleral contact lens wear was initiated OS. The patient experienced a recurrent corneal ulcer in his left eye, the first incident being shortly after lens wear was initiated. A month later, a second ulcer occurred and healed after one month of treatment with Ofloxacin QID. The fit of the scleral lens was adequate. However, despite copious education, the patient did have poor contact lens habits and often overwore the lens for up to 18 hours a day. A third corneal ulcer event occurred, and a decision was made to discontinue scleral lens wear. The patient is now undergoing a gas permeable lens re-fit due to his high irregular astigmatism and the desire for increased oxygen permeability to the cornea.

		Power	BC/Sag	Diameter	Edge	Material
OS	Scleral	+0.50-0.50x020	7.96/4700	16.00	HSTP1/VSTD	Boston XO2
OS	RGP	-0.25 Sph	7.75	11.20	8.75/0.50 10.20/0.30 11.20/0.20	

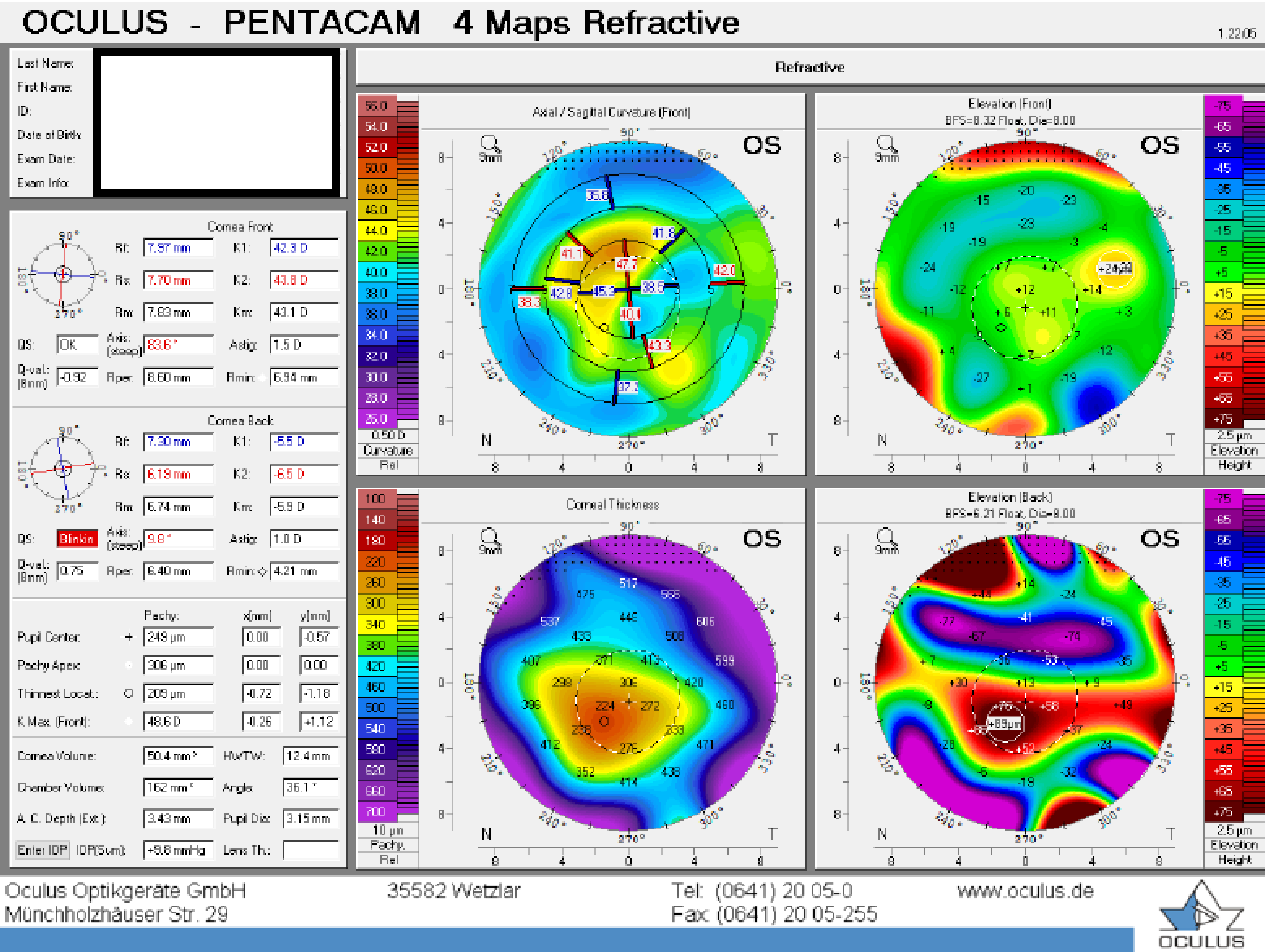


Figure 1: A Pentacam scan taken of the patient's left eye.

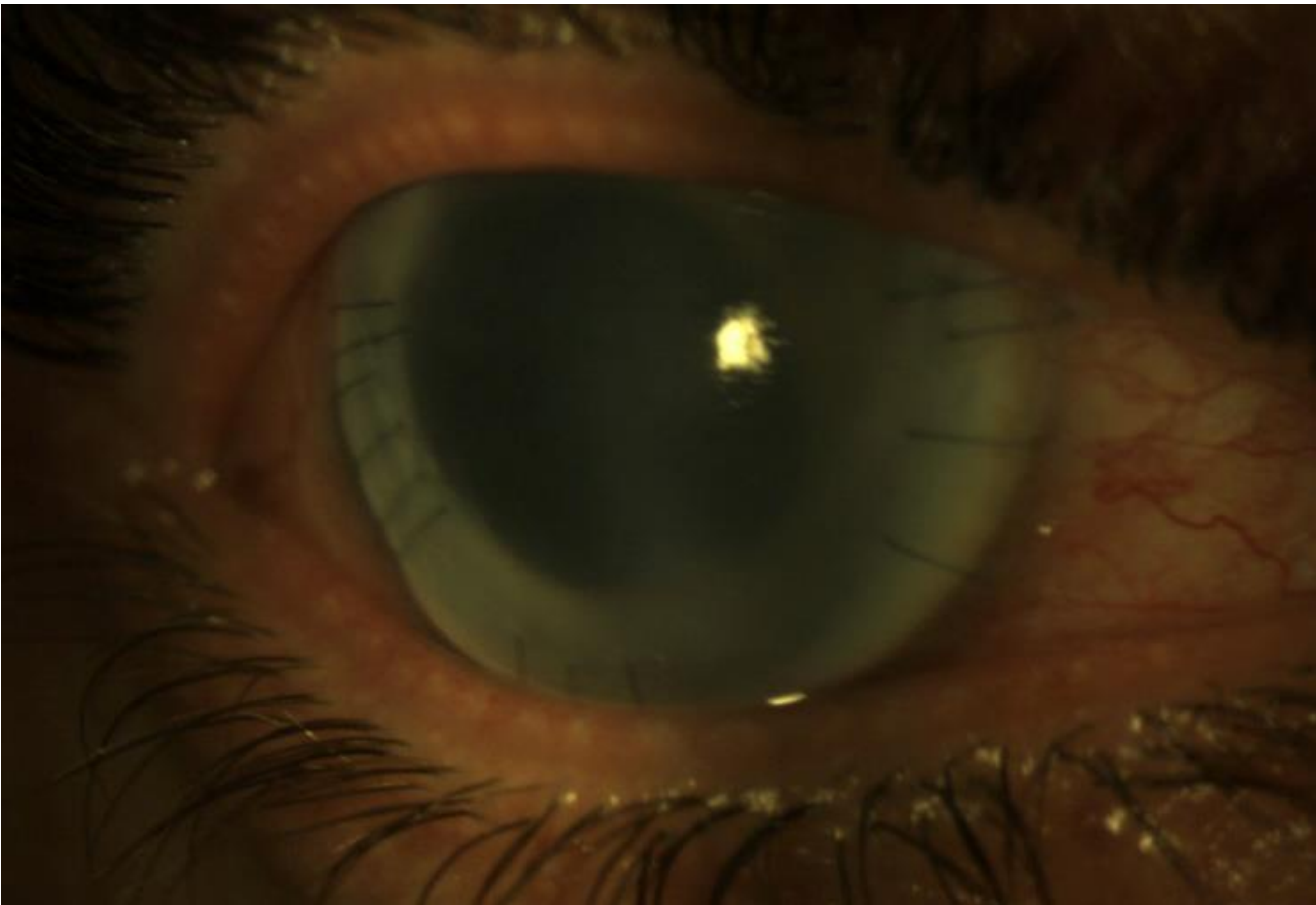


Figure 2: The patient's right eye post failed PKP.

DISCUSSION

Little is known about the recurrence of ocular MRSA and the reaction of MRSA in the context of a scleral contact lens fitting. For patients with MRSA keratitis, the presenting features of the ulcers were recorded according to an institution-wide clinical algorithm which mandates the collection of corneal cultures for lesions meeting any of the following criteria: $\geq 1+$ cells in the anterior chamber; ≥ 2 mm infiltrate and/or the presence of ≥ 2 satellite lesions; or infiltrate located ≤ 3 mm from the corneal center₃. However, a culture was not done of the recurring corneal ulcer, and instead scleral contact lens wear was discontinued on the assumption that chronic contact lens overwear was a main contributor to the pathophysiology of the ulcer. The patient is ineligible for soft lens wear due to his high irregular astigmatism and is underwent a gas-permeable contact lens fitting and reports adequate vision and comfort with the lens in their left eye.

CONCLUSIONS

Managing ocular MRSA requires vancomycin or chloramphenicol antibiotics with good evidence of efficacy noted across various clinics, however, little is known about the recurrence of ocular MRSA and the reaction of MRSA in the context of a scleral contact lens fitting. In the context of this patient, a previous MRSA infection could be considered a potential contraindication for scleral contact lens wear.

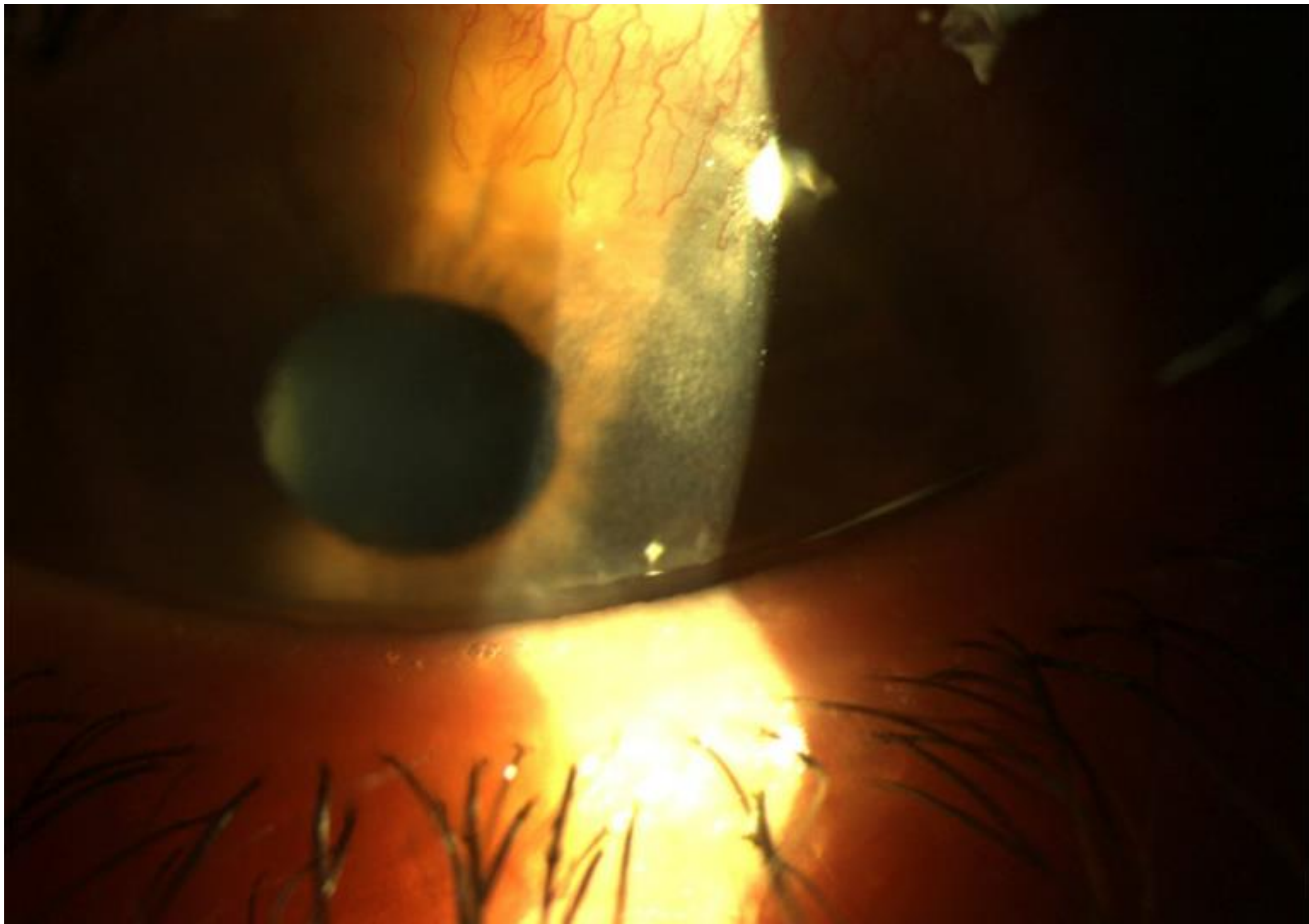


Figure 3: the patient's left eye with superior neovascularization and epithelial defects post recurring ulcer.

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