Nocardia farcinica keratitis in a contact lens wearer

Category(ies): Cornea

Contributor: Brittni A. Scruggs, MD, PhD

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A 43-year-old woman with poor contact lens hygiene presented with two weeks of redness, pain, photophobia, and decreased vision of the right eye (OD). Visual acuity was 20/60 OD, and her anterior segment examination is documented in Figures 1-3. She was started on two fortified topical antibiotics, topical amphotericin, oral valacyclovir, and a topical cycloplegic, and corneal cultures were collected. Confocal microscopy showed numerous activated keratocytes without definitive hyphae or amoebic cysts (Fig 4). Corneal cultures were positive for >100 colonies of Nocardia farcinica. Topical amikacin 10 mg/mL and oral trimethoprim-sulfamethoxazole were added to her regimen. Within two weeks, her symptoms resolved and vision improved to 20/15 OD. Her drops were slowly tapered over three months.

Nocardia keratitis (NK) is a rare cause of bacterial keratitis that mimics fungal infections and, as a result, is often diagnostically challenging. Nocardia are gram-positive, aerobic bacteria of the actinomycetes order that are found in microflora of soil, dust, decaying vegetation, etc (1). NK classically leads to a wreath-like arrangement of patchy, anterior stromal infiltrates in the setting of trauma, contact lens use, or LASIK (1, 2). The course of NK is usually slowly progressive; however, these infections are commonly recalcitrant unless Nocardia-specific treatment (e.g., amikacin and sulphonamides) is initiated early (1, 2). Topical corticosteroids should be avoided prior to adequate treatment of Nocardia (1).

Figure 1. Slit lamp photography of the right eye. This photograph demonstrates multifocal stromal infiltrates in the mid-periphery extending along the limbus. There is prominent ciliary flush, diffuse conjunctival injection, and a superior pannus.

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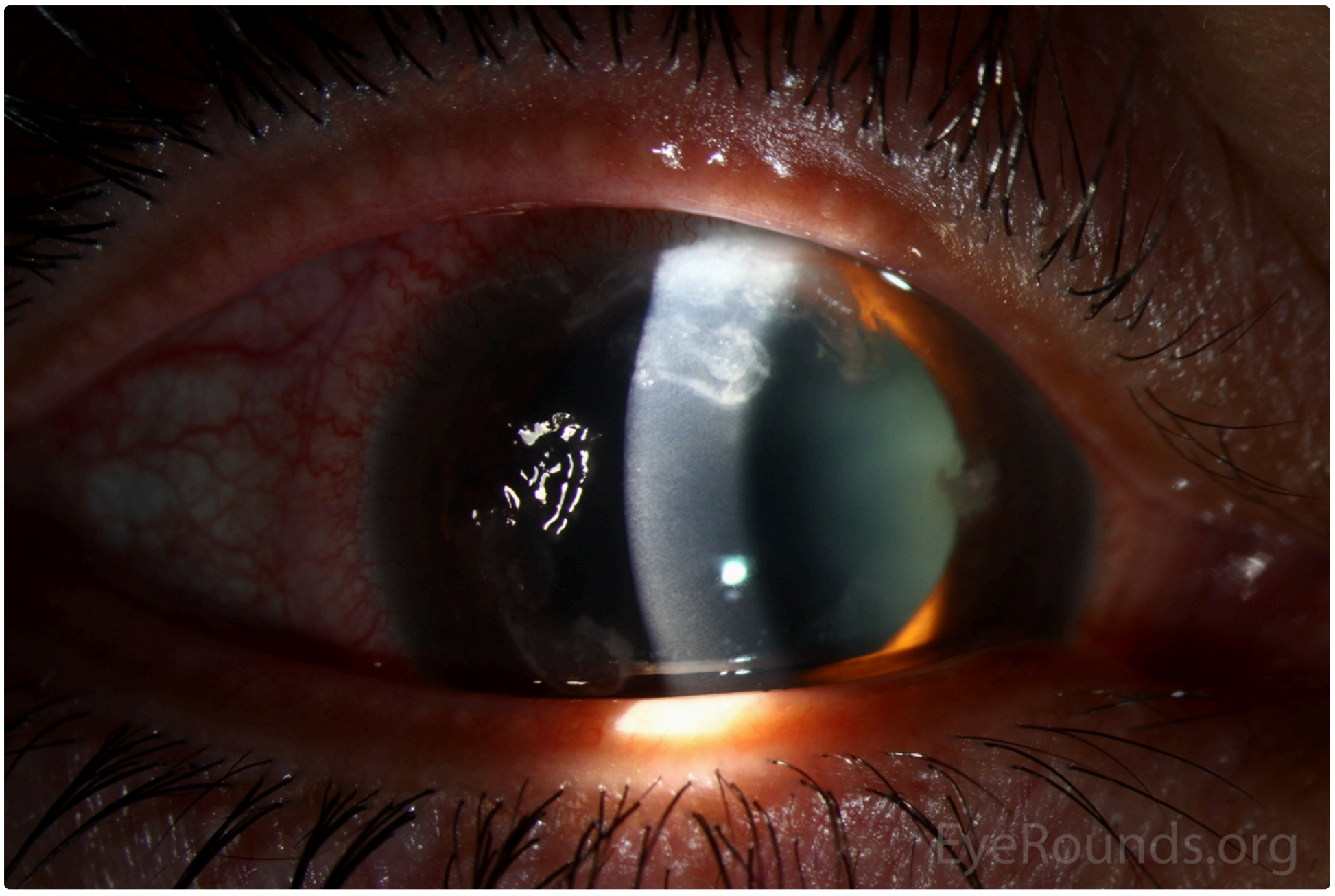

Figure 2. Slit lamp photography of the right eye. This photograph shows a moderate amount of white blood cell recruitment surrounding the stromal opacities in addition to small, branching-type lesions extending from the stromal opacities. Several satellite lesions are present

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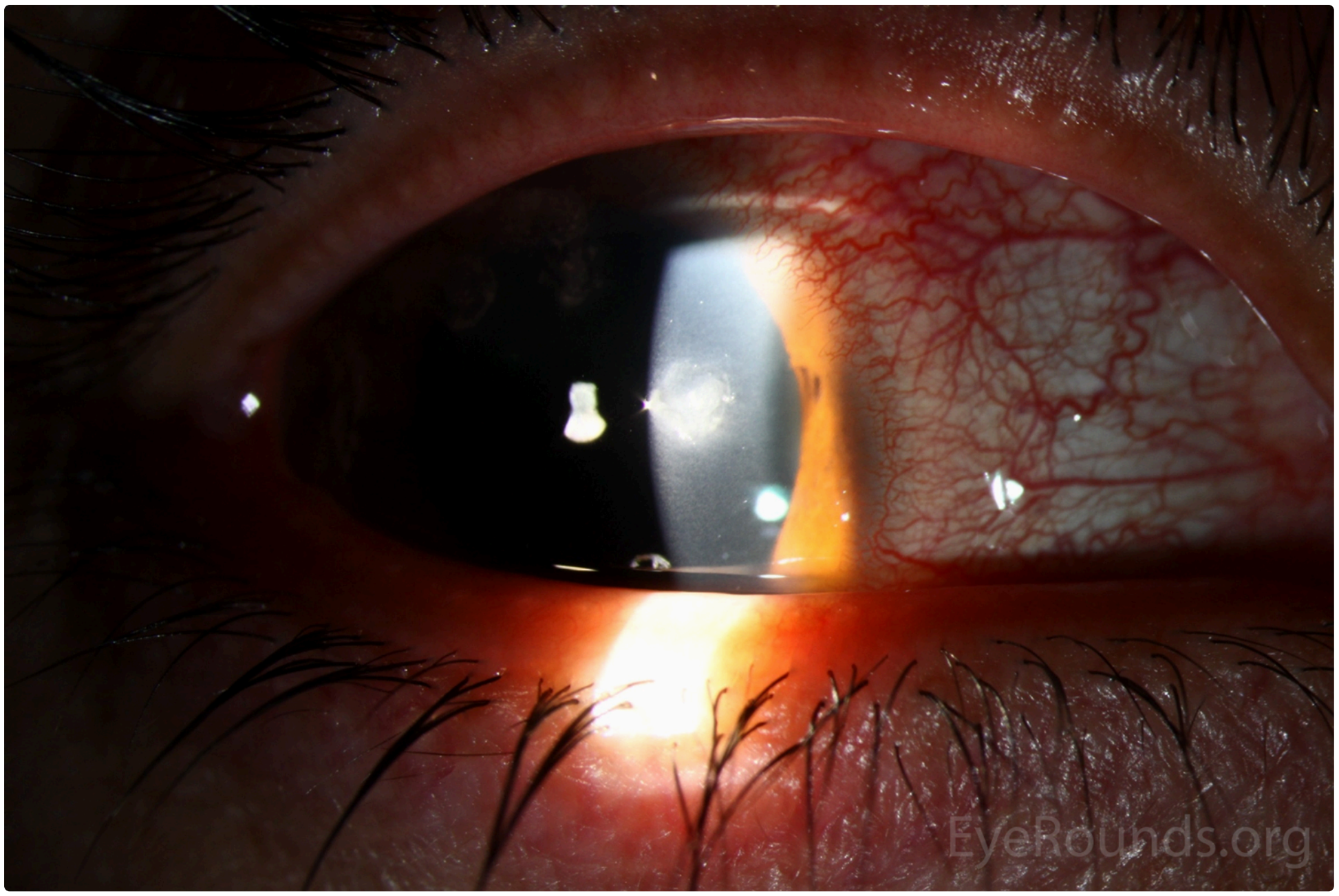

Figure 3. Slit lamp photography of the right eye. This photograph demonstrates a focal lesion in the nasal mid-periphery without feathery borders but with surrounding inflammation. Ciliary flush is evident with diffuse 2+ injection. There are complete epithelial defects overlying these lesions (not photographed).

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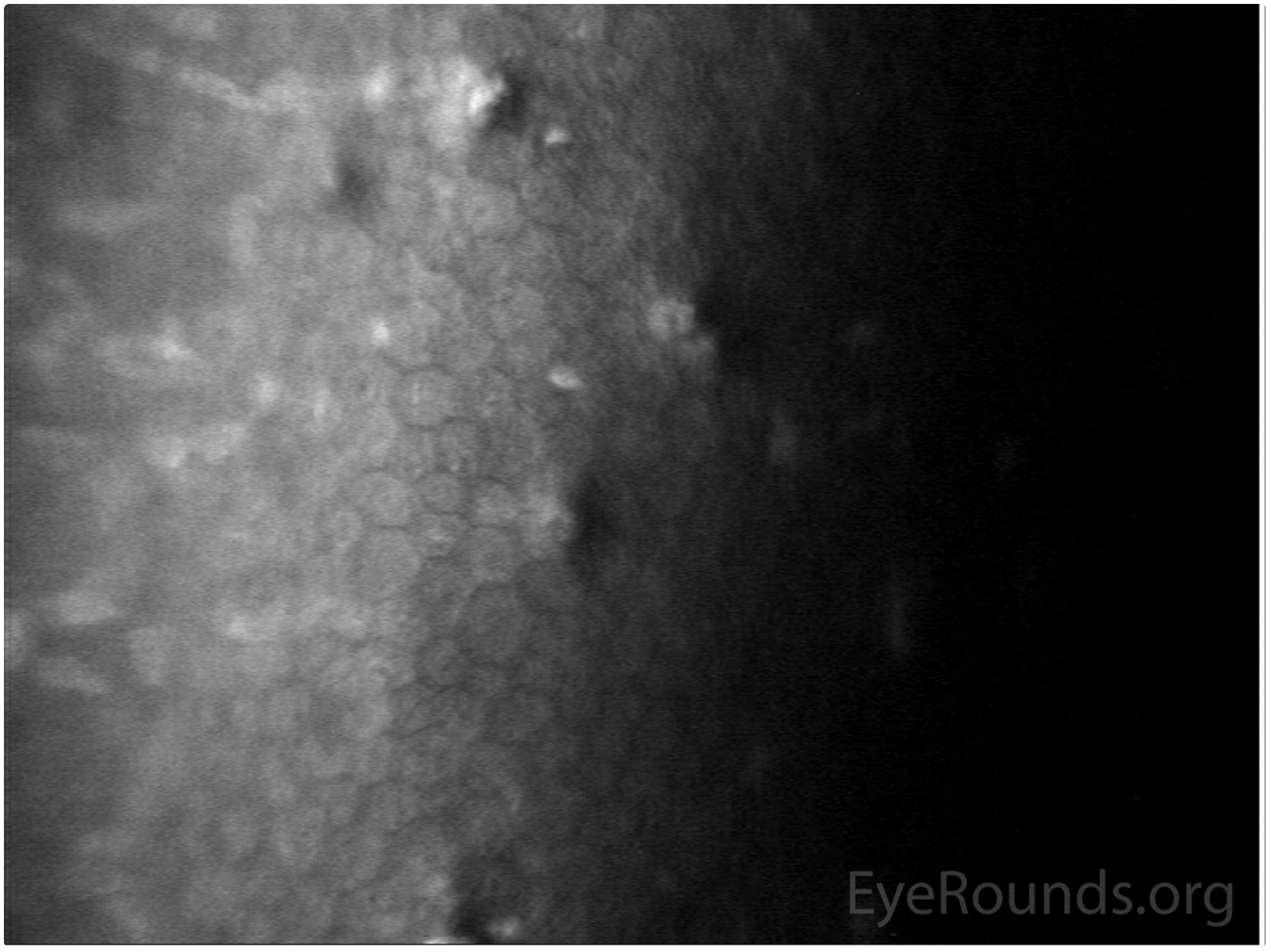

Figure 4a. Confocal microscopy: endothelium with evidence of mild polymegathism, which is a sign of corneal stress.

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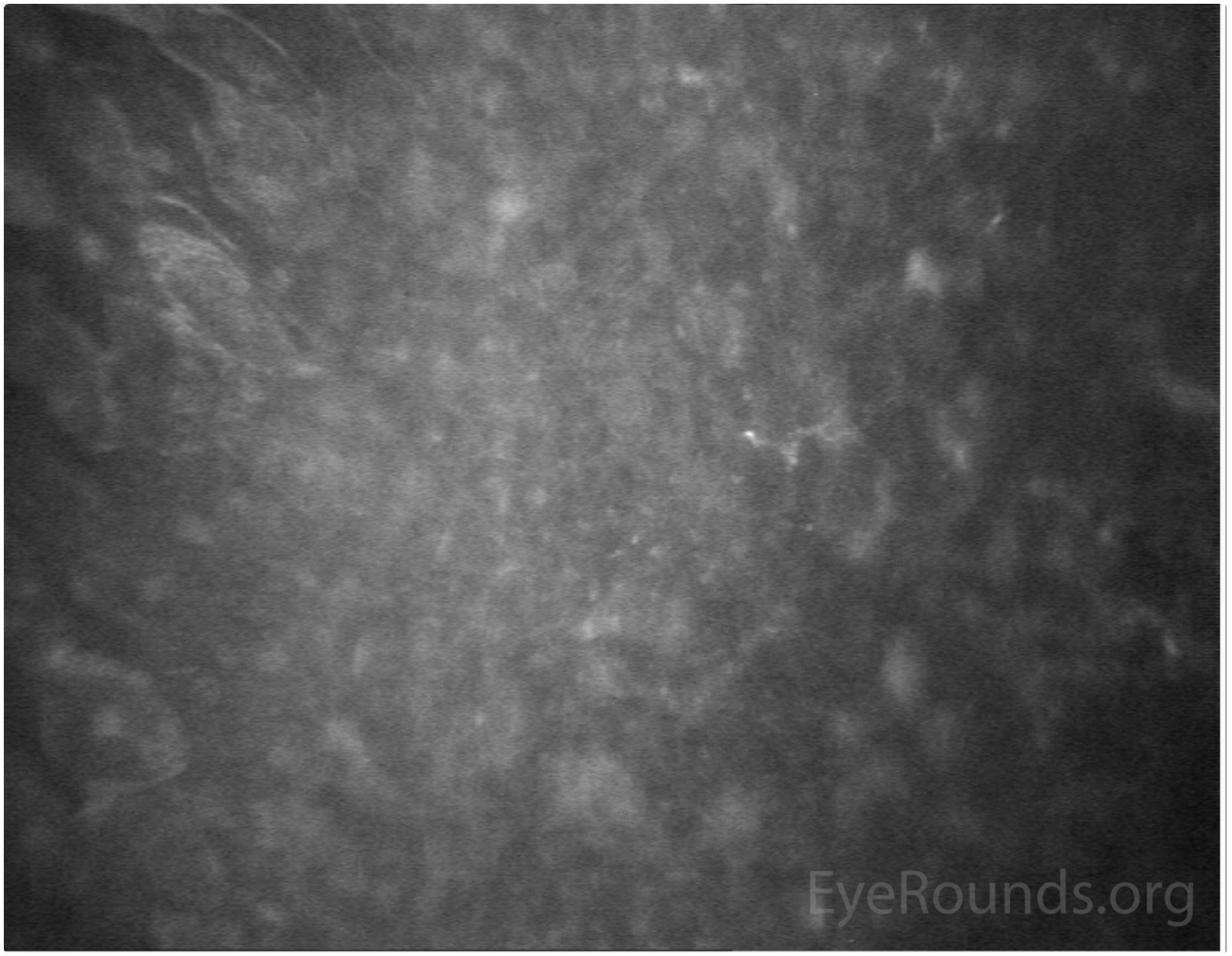

Figure 4b. Confocal microscopy: the stroma with no evidence of hyphae or amoebic cysts.

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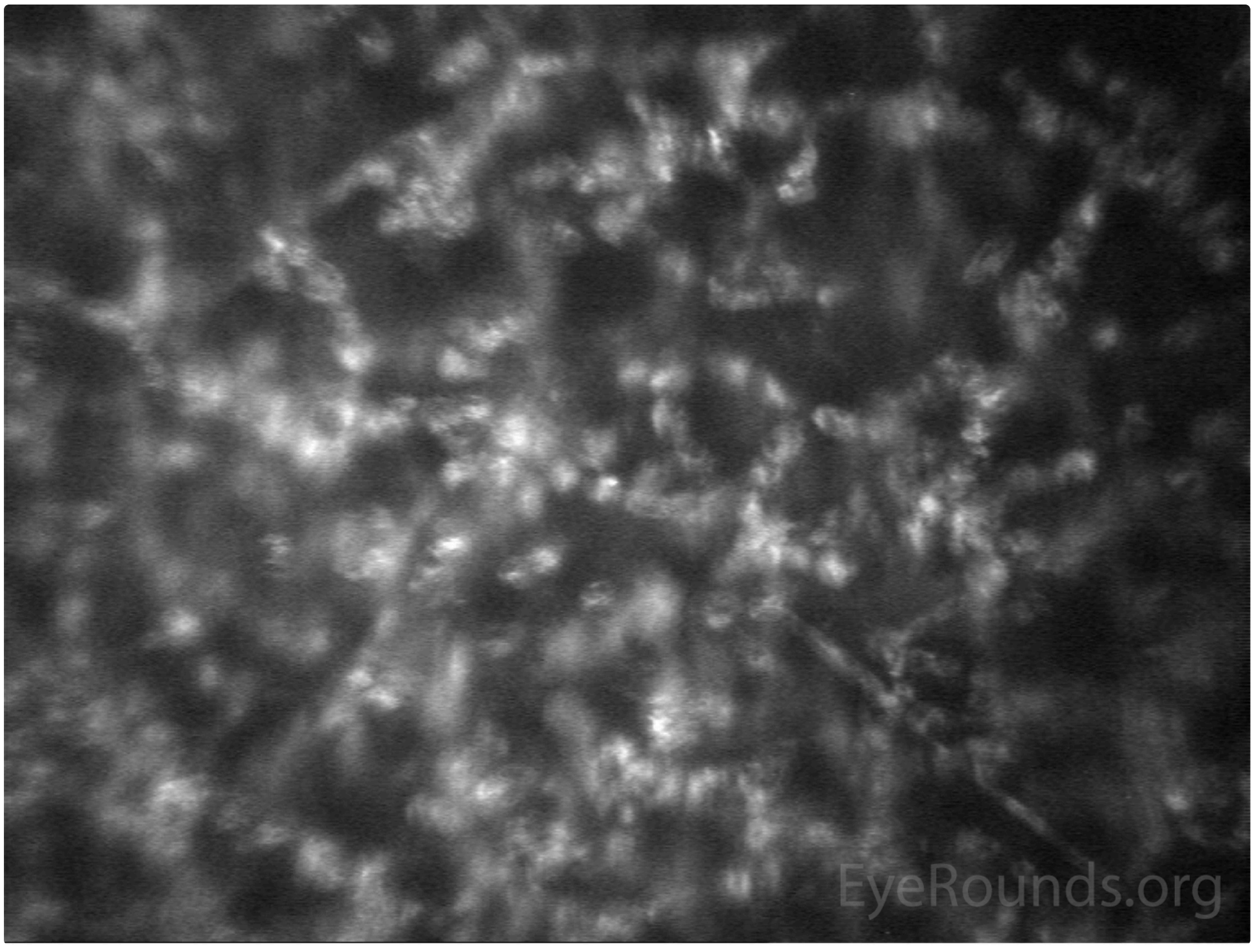

Figure 4c. Confocal microscopy: numerous activated keratocytes (bright figures), which are seen in diffuse keratitis.

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Nocardia Keratitis in a Contact Lens Wearer

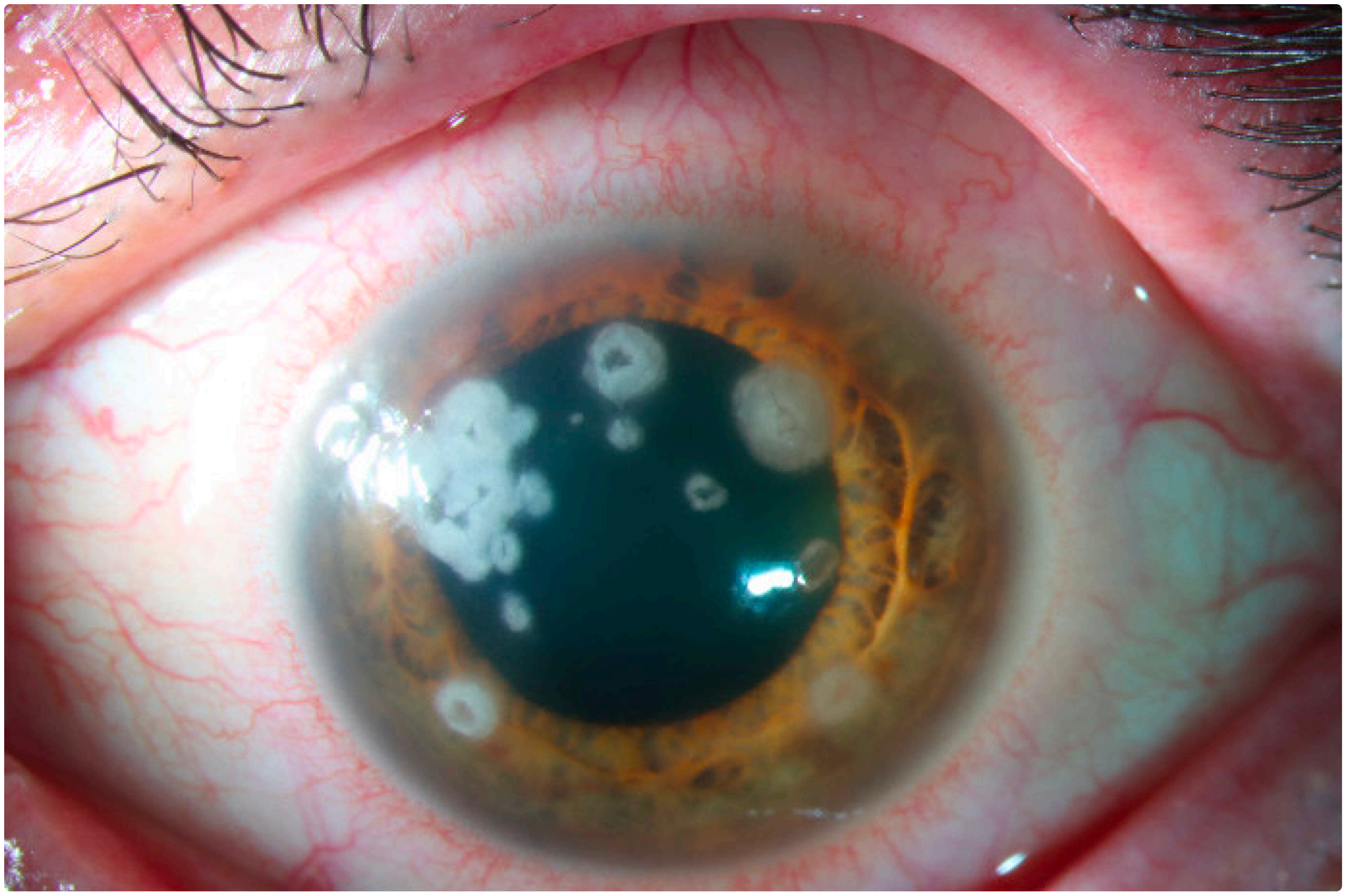
Category(ies): Cornea / External Eye Disease

Contributor: Ella J. Gehrke MD; Lupe Torres MD; Kanwal Singh Matharu MD

Photographer: Brooke Muth

Posted: 03/03/2025

A 52-year-old male with a 35+ year history of hard and soft contact lens wear, poor lens hygiene, including overnight wear and recent hot tub exposure, presented with decreased vision in the left eye and eye pain. On presentation, his visual acuity was 20/20 OD and 20/60 OS, with intraocular pressures of 15 and 13 mmHg, respectively. Slit-lamp examination revealed multifocal, wreath-like infiltrates consistent with microbial keratitis. Corneal cultures grew >100 colonies of Nocardia species. The patient was started on polyhexamethylene biguanide, erythromycin, and amikacin 2.5% for treatment of Nocardia keratitis.



Slit-lamp photograph of the left eye showing multifocal, wreath-like stromal infiltrates centrally and in the nasal periphery, with prominent ciliary flush and trace conjunctival injection.

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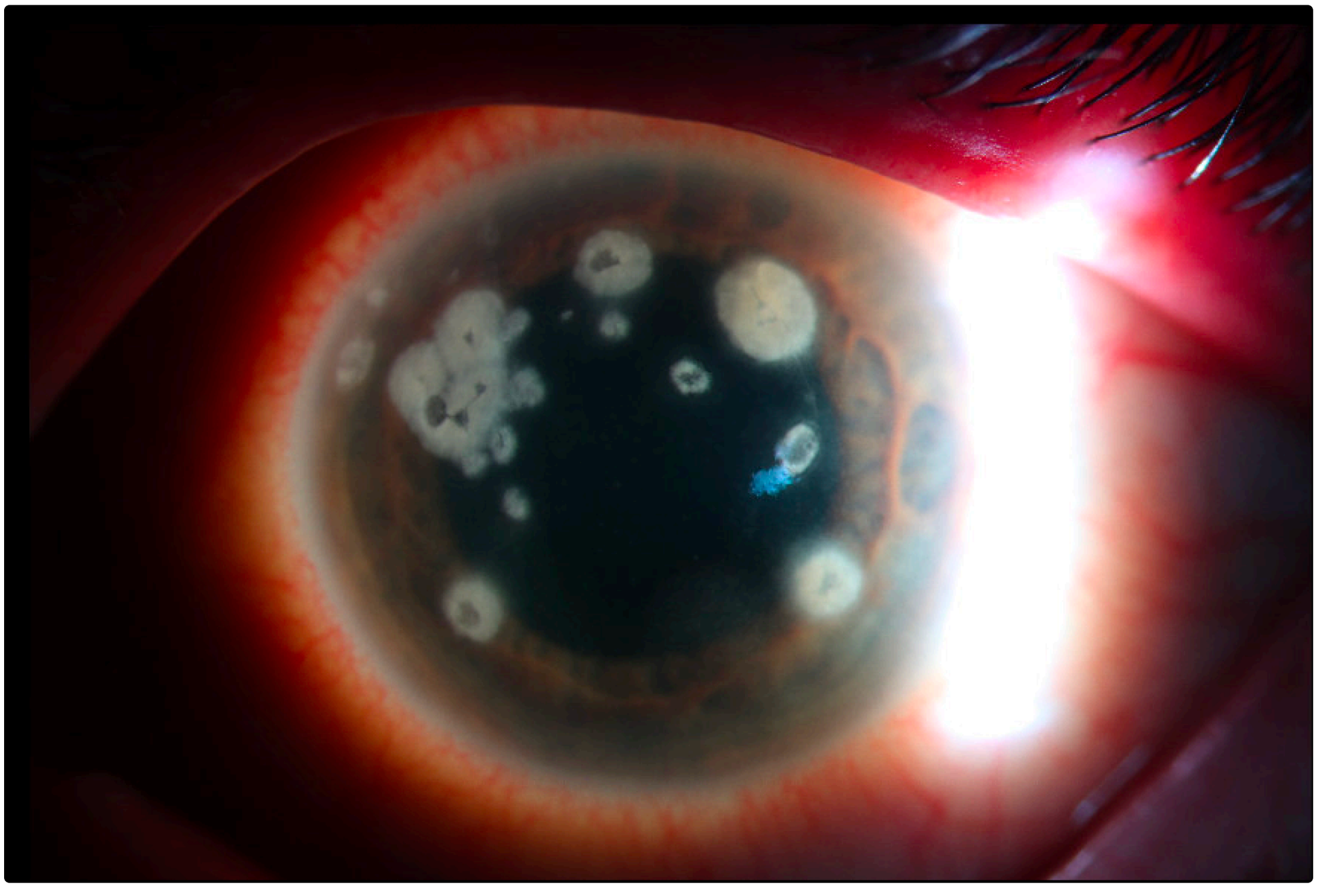

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