JAMA Ophthalmology Clinical Challenge

# Postoperative Inflammation After Anterior Segment Surgery

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**Figure 1.** Slitlamp photograph of right eye at presentation with prominent white retrocorneal plaque at the inferotemporal gyrus, peaking of the pupil, and temporal prominent scleral vessels with inferotemporal scleral thinning.

**A 71-year-old woman** without substantial medical history was referred for 2 months of progressive worsening of vision and pain in her right eye despite corticosteroid treatment following a recent excisional conjunctival biopsy with cryotherapy at an outside institution for suspected squamous cell carcinoma in situ. Pathology was reported to be negative for malignancy. The patient noted postoperative pain that was suspected to be postsurgical inflammatory scleritis and managed by an outside ophthalmologist with a combination of topical prednisolone, oral prednisone, and subtenon triamcinolone acetonide.

On presentation, the patient's Snellen visual acuity without correction was count fingers in the right eye and 20/50 in the left eye with a baseline of 20/100 in the right eye and 20/60 in the left eye. The anterior segment examination of the right eye revealed conjunctival hyperemia with prominent scleral vessels, greatest inferiorly. Scleral thinning was noted inferotemporally, as well as a temporal crescent of corneal stromal melt (**Figure 1**). A persistent depot of subtenon triamcinolone acetonide was noted inferotemporally. A retrocorneal white plaque was noted from clock positions 6:00 to 9:30 with 4+ cell and flare per Standardization of Uveitis Nomenclature classification. Posterior synechiae were present and the pupil was peaked inferotemporally. There was no view posteriorly and a B-scan ultrasonography revealed moderate vitreous opacities without retinal detachment, choroidal effusion, or Tenon space edema. The left eye was normal.

**WHAT WOULD YOU DO NEXT?**

**A.** Inject intravitreal methotrexate

**B.** Start topical interferon alpha-2b

**C.** Perform anterior chamber biopsy of retrocorneal plaque

**D.** Perform vitreous tap and injection of intravitreal vancomycin, ceftazidime, and voriconazole

CME Quiz at jamacmelookup.com

## Diagnosis

***Nocardia* scleritis with anterior chamber inflammation**

## What to Do Next

**C.** Perform anterior chamber biopsy of retrocorneal plaque

## Discussion

The patient's postoperative worsening and development of retrocorneal plaque following courses of topical, periocular, and oral corticosteroids by the referring eye care professionals were concerning for an infectious etiology. Given the substantial worsening with corticosteroid treatment and the characteristic retrocorneal plaque, infectious etiologies like *Nocardia* should be ruled out with anterior chamber biopsy (choice C). The appearance is atypical for vitreoretinal lymphoma and empirically injecting intravitreal methotrexate without tissue diagnosis is not recommended (choice A). The benign pathology report and retrocorneal plaque are atypical of ocular surface squamous neoplasia and topical interferon alpha-2b would be inappropriate (choice B). Anterior chamber culture is preferred with a predominant anterior chamber infiltrate and B-scan ultrasonography without substantial vitritis. If intravitreal injections were chosen as initial management, intravitreal amikacin should be included because of high suspicion for *Nocardia* (choice D).

An in-office anterior chamber tap was unsuccessful due to the retrocorneal plaque thickness. Surgical biopsy was performed with a 25-gauge vitrectomy cutter connected to a 5-mL syringe the following day. A 25-gauge needle and anterior chamber cannula were unsuccessful in aspirating the material intraoperatively. Intravitreal amikacin, vancomycin, ceftazidime, and voriconazole were administered and oral trimethoprim/sulfamethoxazole was started imme-

diately. Once biopsy results confirmed *Nocardia cyriacigeorgica*, topical amikacin (2.5%) and linezolid (0.2%) were started.

*Nocardia* accounts for 8% of reported cases of infectious scleritis and frequently remains an indolent infection.[1,2] It is rarely seen in patients with immunocompetence except in substantial ocular trauma wherein it presents with anterior segment inflammation, hypopyon, and anterior vitreous and surgical site exudates.[3] In this case, the potential for nosocomial introduction from surgical trauma and corticosteroid use necessitates consideration of *Nocardia*.[4] *Nocardia* may be mistaken for other bacterial or fungal pathogens due to the presence of anterior chamber exudates on the corneal epithelium.[5,6] Antibiotic choice must be considered as aggregate susceptibility testing recognizes *Nocardia* as highly susceptible to amikacin but resistant to vancomycin.[5] Patients typically require prolonged systemic and topical antibiotics for complete resolution.[7]

Visual prognosis is usually poor, but is linked to presenting visual acuity and duration of infection.[5,8,9] Superior visual outcomes in cases of *Nocardia* endophthalmitis are associated with male sex, presenting vision better than hand motions, presentation within 48 hours of symptoms onset, and initial intervention being vitrectomy instead of vitreous biopsy.[5]

Our case presents a patient with immunocompetence whose disease course worsened after corticosteroid use. The proliferation of *Nocardia* was perhaps associated with cryotherapy following conjunctival biopsy which is otherwise associated with improved outcomes.[10] *Nocardia* endophthalmitis is rare, but a retrocorneal plaque should raise clinical suspicion to ensure prompt treatment with sufficient antibiotic coverage and avoid long-term visual deficits or enucleation.

**Figure 2.** Slitlamp photograph of the right eye 4 months after treatment showing resolution of the retrocorneal plaque and conjunctival and scleral injection with stabilization of scleral thinning.

## Patient Outcome

The patient noted substantial resolution of pain and improvement in visual acuity with stabilization of scleral thinning and resolution of the retrocorneal plaque (**Figure 2**). Best-corrected Snellen visual acuity remains count fingers in the right eye due to a dense cataract.


### ARTICLE INFORMATION

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