



A Case of Chronic Postoperative Endophthalmitis Following DSAEK

Nathan Wise¹, Redion Petrela MD¹, Mark Breazzano MD^{1,2}, Robert Weisenthal MD^{1,3}, Robert Swan MD¹
1 Department of Ophthalmology & Visual Sciences, SUNY Upstate Medical University, 2 Retina-Vitreous Surgeons of Central New York, 3 Central New York Eye Care

Introduction

Chronic postoperative endophthalmitis (CPE) is a delayed intraocular infectious process that occurs more than six weeks after ocular surgery. CPE can be an elusive diagnosis as its presentation commonly masquerades autoimmune uveitis.¹ Urgent diagnosis and treatment of CPE is therefore essential to prevent severe vision loss.

This case presents a corneal transplant patient with an initial presentation suggestive of anterior uveitis with possible graft rejection. He was found to have *Staphylococcus Epidermidis* Endophthalmitis following AC fluid cultures and was treated with intravitreal and topical vancomycin.

Case Presentation

- 78M with history of failed DSAEK in 2013. After 1 week he received a second DSAEK which lasted him 10 years. He received a third DSAEK 8/2023.
- Patient presented 11/2023 with loss of vision for 2 weeks. He was treated for suspected rejection with difluprednate 8x/day and referred to uveitis clinic due to concern for viral/systemic etiology.
- Initial exam notable for BCVA OD: 20/600 OS: 20/20, and keratic precipitates involving both the host and graft endothelium (Fig. 1A, B). Given mutton-fat appearance and distribution of KP, viral etiology initially suspected but AC tap negative.
- Patient's condition worsened despite treatment. Two weeks following initial presentation he displayed signs of endophthalmitis including 3+ cell, dense vitritis, and a 0.5mm hypopyon (Fig 2 A, B).
- AC culture grew vancomycin sensitive *S. Epidermidis*. He was treated with 5 total intravitreal vancomycin injections over the course of 4 weeks, accompanied by daily fortified vancomycin, Difluprednate, and Erythromycin ointment. Recovery complicated by PCO for which he underwent YAG capsulotomy. Final visual acuity was 20/200 OD, likely due to vitreous debris seen on most recent follow up exam (4A).

Clinical Images

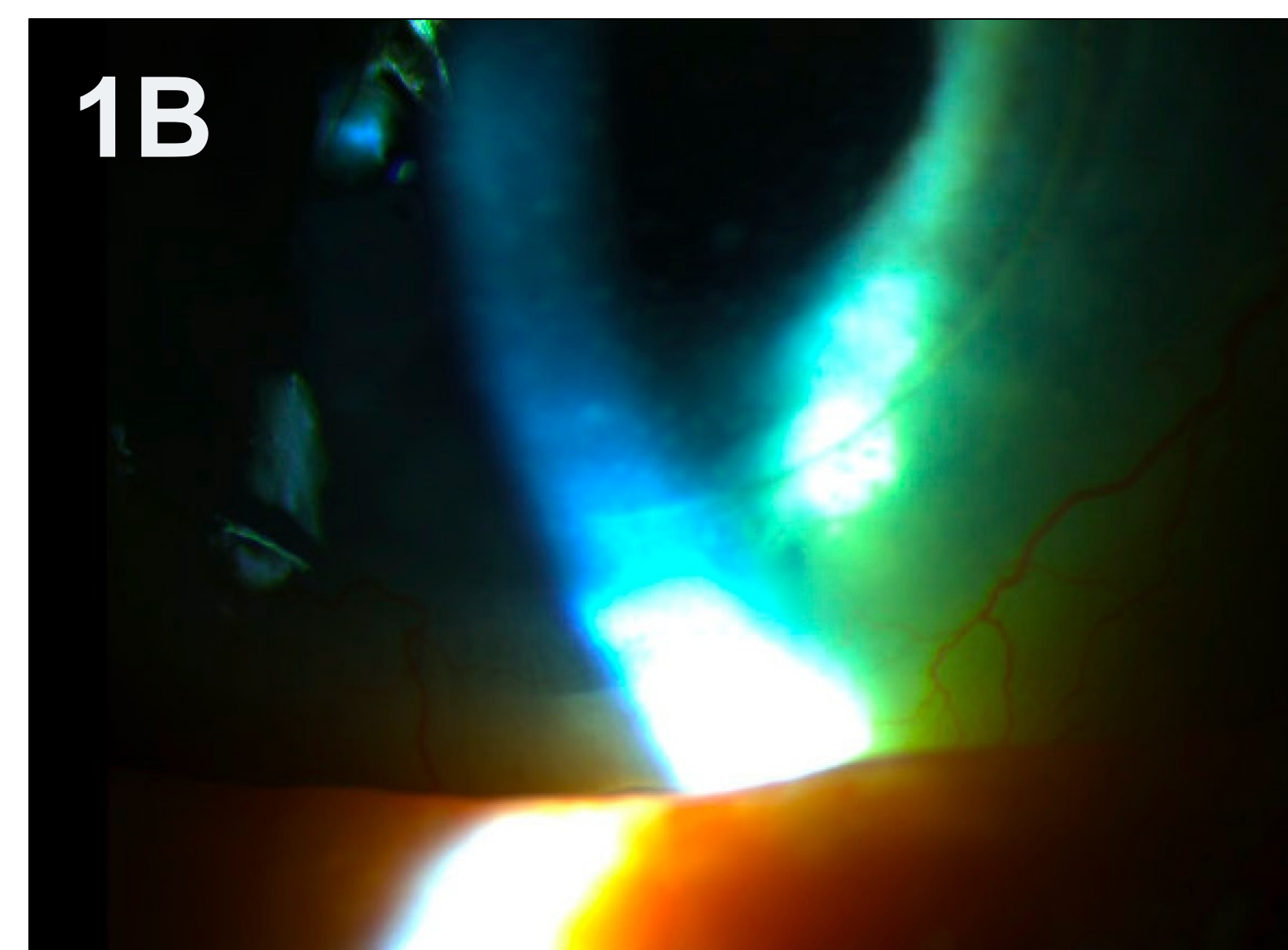
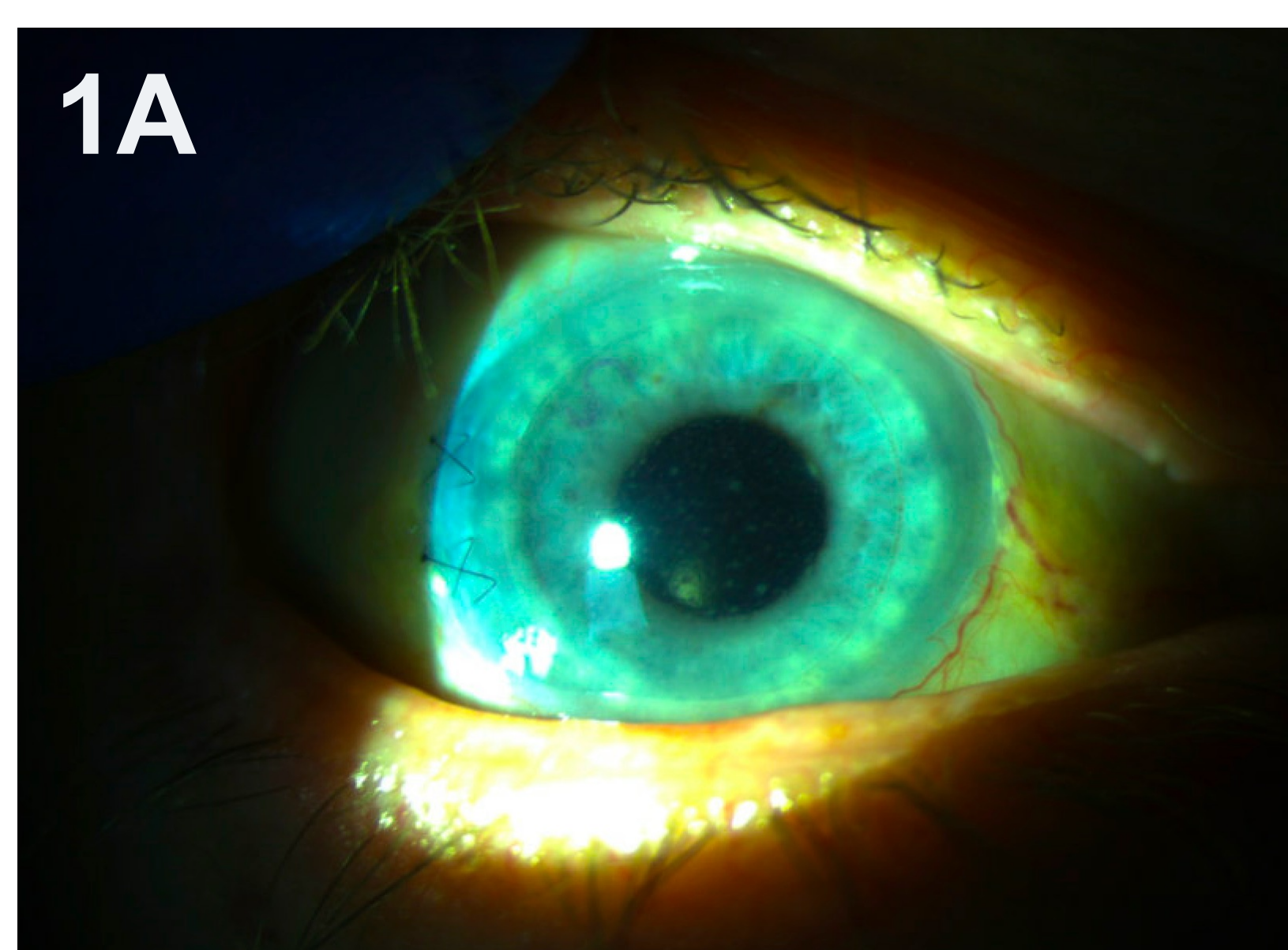


Figure 1A: Gross view of presenting right eye
Figure 1B: Slit lamp exam displaying KP accumulation on host and graft cornea

Ocuflox TID, Durezol QID, Valtrex 1g PO BID

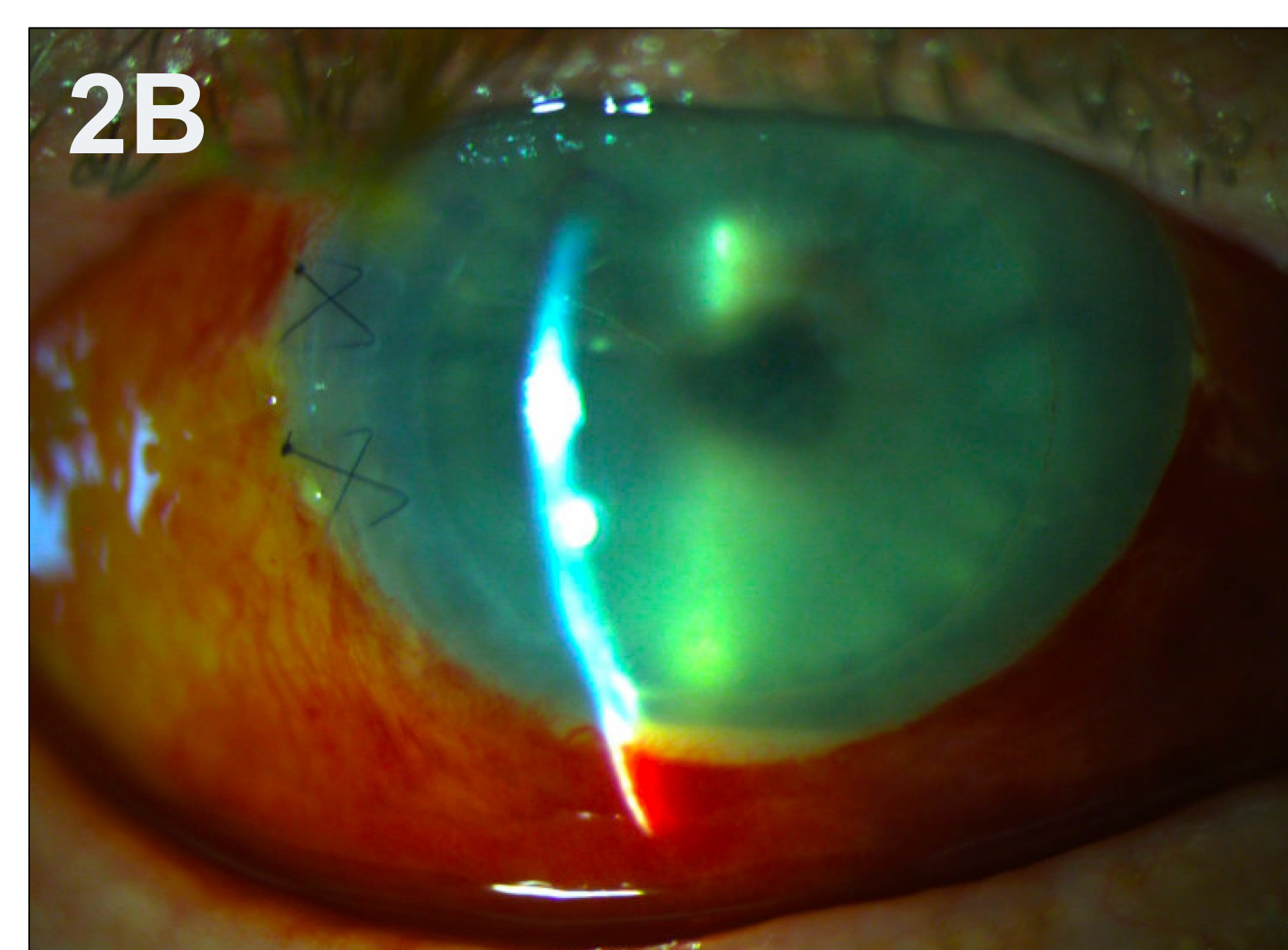
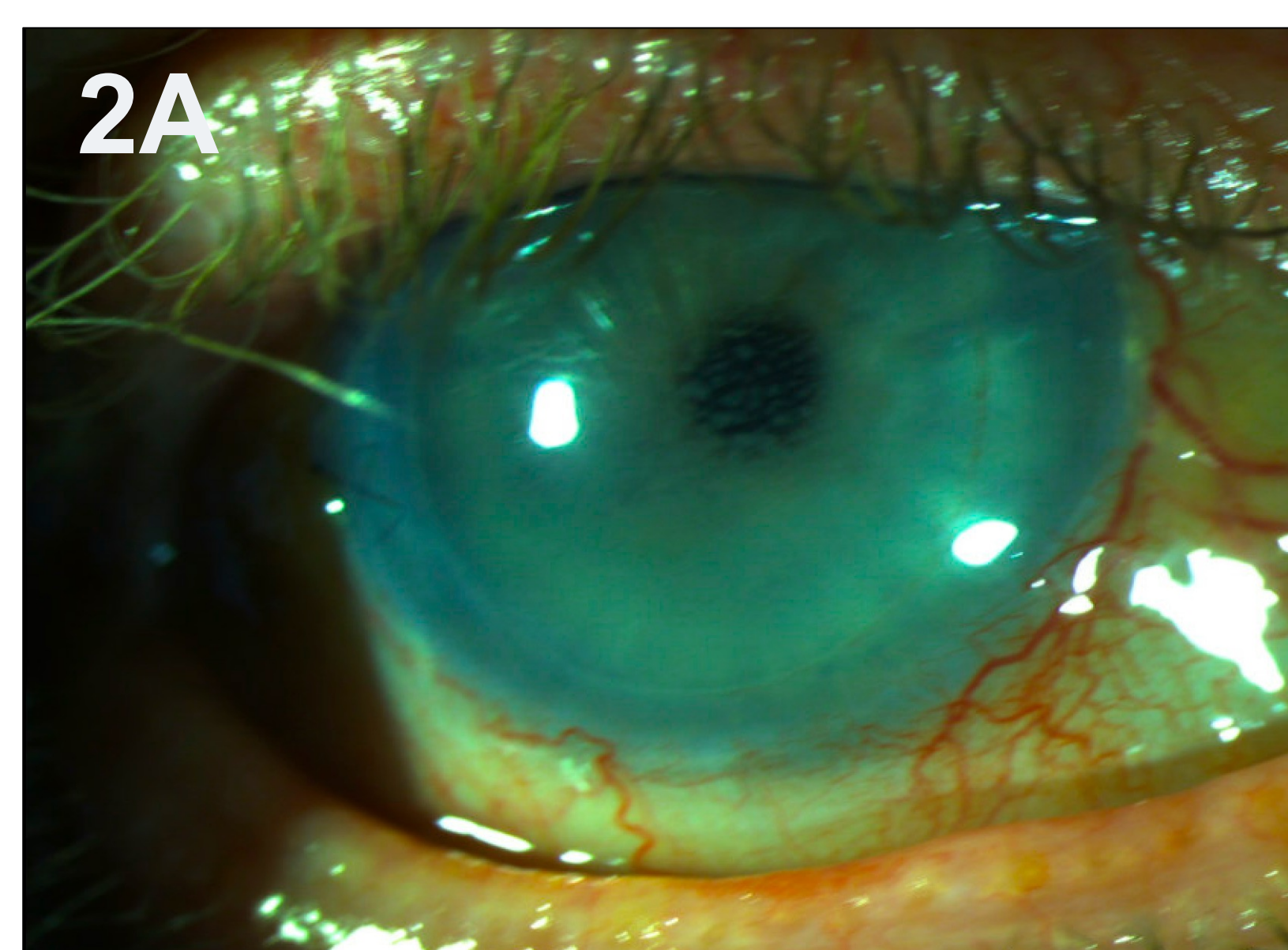


Figure 2A: 2-week follow-up gross view showing increased KP despite initial treatment
Figure 2B: Gross view the next day showing developed endophthalmitis with 0.5mm Hypopyon

Started Intravitreal Vancomycin

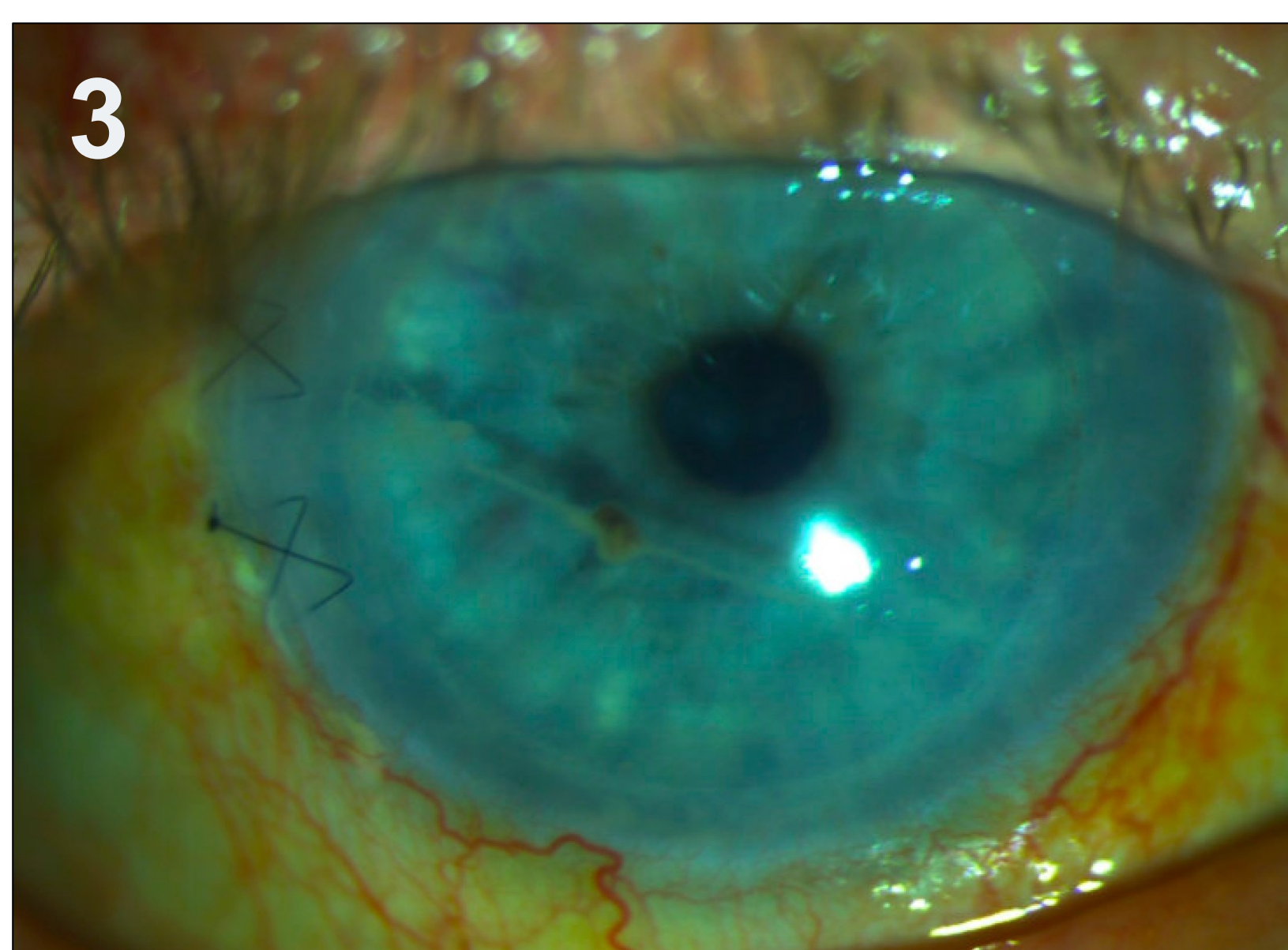


Figure 3: 7 days following intravitreal injection. Improvement in KP, injection and corneal haze

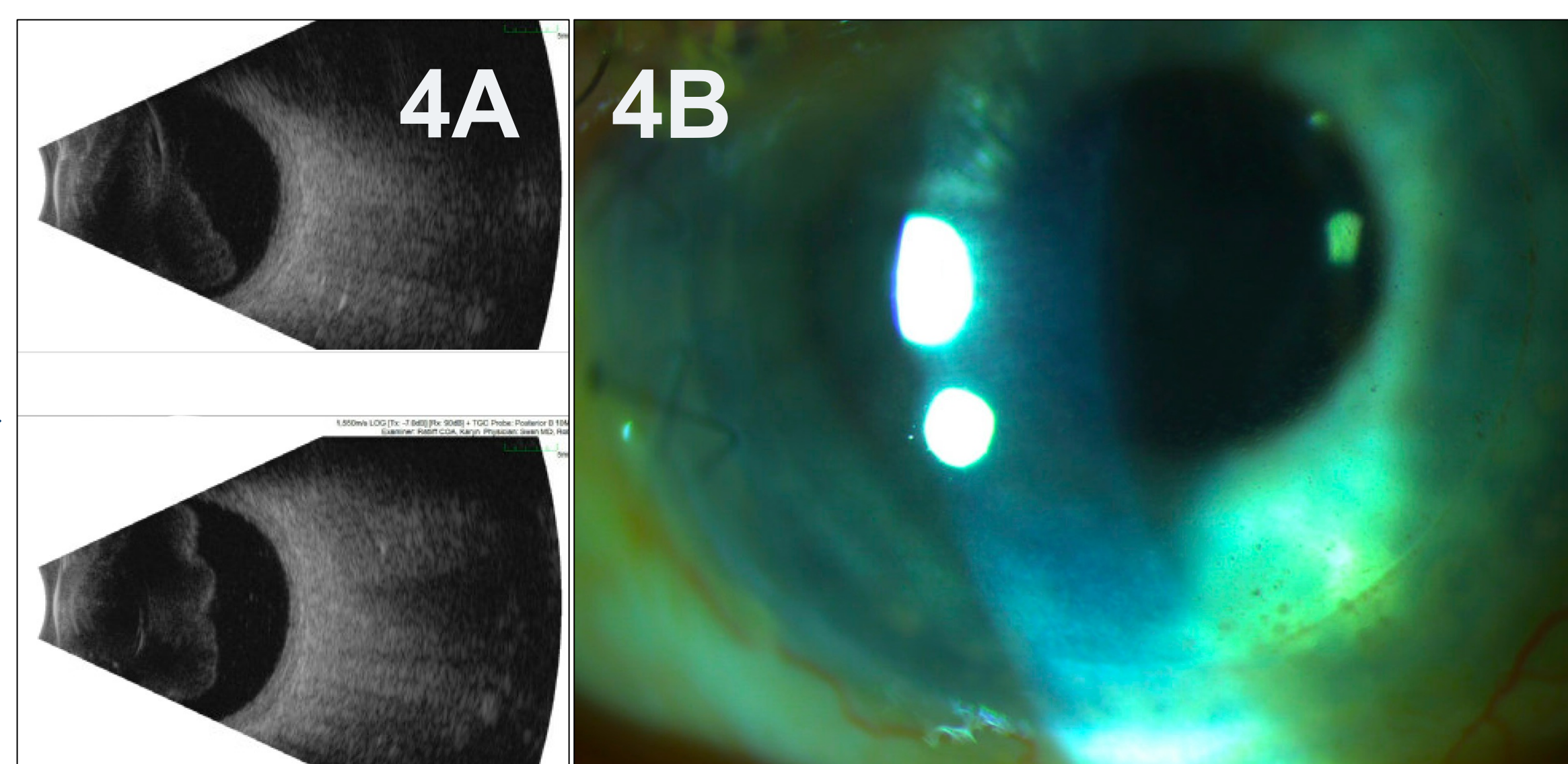


Figure 4A: B-scan displaying dense vitreous
Figure 4B: Clear improvement following 2 doses of intravitreal Vancomycin

Discussion

Endophthalmitis following endothelial corneal transplant is a rare phenomenon with some institutions reporting an incidence as low as 0.2%.²

Chronic postoperative endophthalmitis typically presents as low-grade uveitis 2-3 months following surgery. Common features include decreased vision, white blood cells in the anterior chamber, and large precipitates on the cornea and intraocular lens.³ Vitritis can range from mild to dense and diffuse, especially in cases of *Staphylococcus epidermidis*.¹

Due to its resemblance to uveitis, many cases of delayed-onset endophthalmitis are initially treated with corticosteroids. While this may improve symptoms initially, the infection only worsens whenever steroids are tapered or removed completely.³ Additionally, the low virulence nature of the common offending microorganisms make isolation difficult, further delaying effective antimicrobial treatment.⁴

Treatment modalities generally range from intracocular antibiotic injections (IOAB) alone to IOAB combined with pars plana vitrectomy (PPV), partial capsulectomy, and/or total capsulectomy with IOL removal and exchange depending on the extent of infection and recurrence.¹

Alternatively, treatment for chronic fungal endophthalmitis, which may present in a similar time frame, typically includes PPV, followed by aggressive intraocular and a systemic antifungals. Further surgical treatment to remove intraocular implants may be required during persistent infections and prognosis is generally unfavorable.⁵

Chronic endophthalmitis has a generally favorable visual outcome with 46% of cases reporting 20/40 or better while 54% of cases report varying degrees of visual impairment.¹

References

1. Maalouf F, Abdulaal M, Hamam RN. Chronic postoperative endophthalmitis: a review of clinical characteristics, microbiology, treatment strategies, and outcomes. *Int J Inflamm*. 2012;2012:313248. doi: 10.1155/2012/313248. Epub 2012 Feb 22. PMID: 22550607; PMCID: PMC3328945.
2. Borkar DS, Wibbelsman TD, Buch PM, Rapuano SB, Obeid A, Ho AC, Hsu J, Regillo CD, Ayres BD, Hammersmith KM, Nagra PK, Raber IM, Rapuano CJ, Syed ZA. Endophthalmitis Rates and Clinical Outcomes Following Penetrating and Endothelial Keratoplasty. *Am J Ophthalmol*. 2019 Sep;205:82-90. doi: 10.1016/j.ajo.2019.05.004. Epub 2019 May 10. PMID: 31082349.
3. Fox GM, Joondeph BC, Flynn HW, Pflugfelder SC, Roussel TJ. Delayed-onset pseudophakic endophthalmitis. *American Journal of Ophthalmology*. 1991;111(2):163-173.
4. Ercan ZE, Akkoyun I, Güngör SG, Yılmaz G. A diagnostic dilemma in a patient with delayed onset endophthalmitis. *Saudi J Ophthalmol*. 2019 Jan-Mar;33(1):99-101. doi: 10.1016/j.sjopt.2018.06.004. Epub 2018 Jul 9. PMID: 30930672; PMCID: PMC6424715.
5. Danielescu C, Stanca HT, Iorga RE, Darabus DM, Potop V. The Diagnosis and Treatment of Fungal Endophthalmitis: An Update. *Diagnostics (Basel)*. 2022 Mar 10;12(3):679. doi: 10.3390/diagnostics12030679. PMID: 35328231; PMCID: PMC8947249.



This study was funded in part by unrestricted grants from Research to Prevent Blindness, Inc. New York, New York and Lions District 20-Y1, Syracuse, New York. No other significant financial interests or relationships to disclosure

