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Case Report

Postoperative herpetic endophthalmitis—A case report

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ABSTRACT

We report a case of herpetic endophthalmitis following cataract surgery. A 65-year-old man underwent uneventful phacoemulsification and vision improved within the first few postoperative days. However, visual loss with an anterior chamber reaction of +++++ and a ++ vitreous cell were noted in the 4th postoperative week. Repeated intravitreal injection of vancomycin and ceftriaxone, pars plana vitrectomy and removal of the intraocular lens (IOL), and the capsular bag were performed sequentially but in vain. Bacterial, mycobacterial, and fungal culture of the IOL and capsular bag demonstrated negative findings. Pathological examination revealed no pathogen but a number of mononuclear cells and several multinuclear giant cells. Serology exam revealed positive herpes simplex virus immunoglobulin (Ig)M and IgG. The intraocular inflammation resolved soon after changing antibiotics to oral valacyclovir.

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1. Introduction

Surgery is one of the various stimulants that can reactivate herpes simplex virus (HSV) and cause new-onset ocular infection. Postoperative herpetic keratitis has been reported to complicate laser-assisted keratomileusis, penetrating or lamellar keratoplasty, and cataract surgery [1–3]. However, HSV has never been deemed as a possible etiology of postoperative endophthalmitis. We report a case of herpetic endophthalmitis following cataract surgery.

2. Case Report

A 65-year-old diabetic man underwent uneventful cataract surgery in his right eye. The best-corrected visual acuity improved from 20/400 to 20/60 within the first few postoperative days. However, during the 4th postoperative week, the best-corrected visual acuity deteriorated to 20/100 and an anterior chamber reaction of +++++ and ++ vitreous cells were noted. Intraocular pressure was within the normal range. No keratic

precipitate was noted during this course. Culture of the aqueous humor showed negative results for bacteria and fungus. The inflammation seemed to respond to intravitreal injection of vancomycin, topical norfloxacin, and betamethasone initially, but loss of response was noted 2 weeks later and further deterioration was noted at the 4-month follow-up. Pars plana vitrectomy with intravitreal injection of vancomycin and ceftriaxone were performed subsequently but in vain. Under the suspicion of propionibacterium acne or other slow-growing pathogens residing in the bag, the posterior chamber intraocular lens (PCIOL) and capsular bag were then removed 3 weeks after vitrectomy. The inflammation became worse with the development of hypopyon, even after repeated injections of vancomycin and ceftriaxone. Bacterial, mycobacterial, and fungal culture of the PCIOL and capsular bag demonstrated negative findings. Careful pathological examination of the bag content revealed no pathogen but a number of mononuclear cells and several multinuclear giant cells (Fig. 1). Serology study revealed positive HSV immunoglobulin (Ig)M and IgG. The intraocular inflammation resolved soon after changing antibiotics to oral valacyclovir. Valacyclovir was prescribed for 2 months. However, dendritic ulcerations and large bullae in the cornea developed 2 weeks after discontinuation of valacyclovir, which resolved with subsequent subepithelial haze after reuse of oral valacyclovir and topical application of acyclovir (Fig. 2).

Conflict of interest: none.

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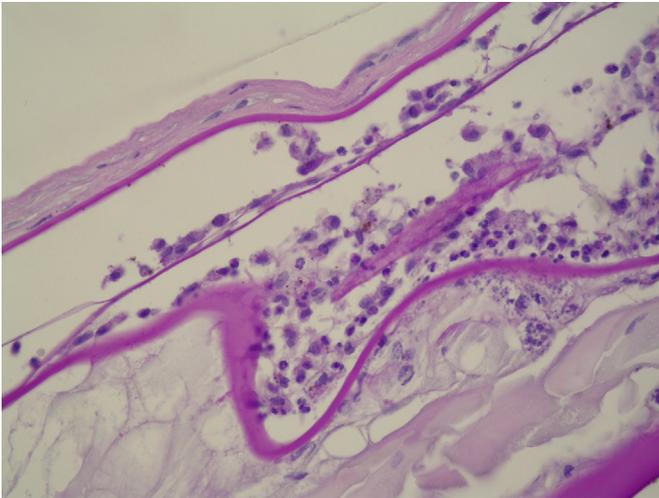


Fig. 1. Pathological examination of the extracted lens bag and its contents shows many mononuclear cells and several multinucleated giant cells (hematoxylin and eosin stain, 200 \times).

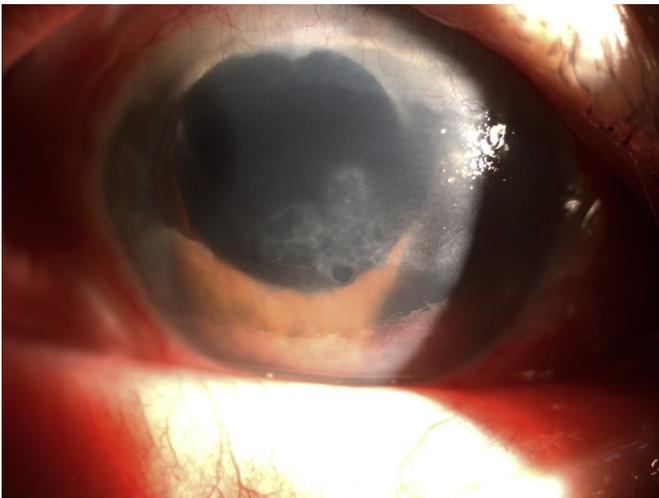


Fig. 2. Dendritic ulcerations and a large bullae in the cornea develop 2 weeks after discontinuation of oral valacyclovir, which was resolved with subsequent subepithelial haze after reuse of oral valacyclovir and topical application of acyclovir.

3. Discussion

Postoperative endophthalmitis is a serious complication of phacoemulsification. Early diagnosis and accurate treatment lead to better prognosis. However, the positive culture rate is never ideal.

Sheng et al [4] reported a 60.1% positive culture rate of intraocular samples from endophthalmitis after cataract surgery. In the ESCRS study of prophylaxis for endophthalmitis, nine out of 29 failed to yield a positive result in Gram stain, culture, or polymerase chain reaction [5]. The causes of the imperfect culture rate might include inadequate specimens, improper laboratory techniques, a small quantity or slow growth of pathogens, or a viral etiology as in our patient.

Both surgical trauma and diabetes mellitus (DM) are risk factors for HSV infection. DM is known to facilitate bacterial, mycotic, and viral infection. Postoperative HSV keratitis has been reported without preexisting HSV eye disease [6,7]. However, HSV has rarely been deemed a possible etiology of postoperative endophthalmitis. Our initial measurements did not cover the possibility of viral etiologies. We did not consider viral infection until we saw several multinucleated giant cells among numerous mononuclear cells under microscopic examination of the capsular bag tissue. The diagnosis of herpetic endophthalmitis was also supported by serological examination, the response to antiviral agents, and the occurrence of HSV dendritic keratitis after discontinuation of antiviral drugs. Although we finally came to a true diagnosis, the sequel of months of inflammation, toxicity of antibiotics, extraction of the PCIOL and the capsular bag, and dendritic keratitis reduced the quality of life of our patient.

HSV uveitis without corneal involvement is more frequent than previously thought. Absence of corneal involvement delays a correct diagnosis and worsens visual outcome [8]. HSV should be considered a possible cause of refractory postoperative endophthalmitis.

References

- [1] Levy J, Lapid-Gortzak R, Klemperer I, Lifshitz T. Herpes simplex virus keratitis after laser *in situ* keratomileusis. *J Refract Surg* 2005;21:400–2.
- [2] Rezende RA, Uchoa UB, Raber IM, Rapuano CJ, Laibson PR, Cohen EJ. New onset of herpes simplex virus epithelial keratitis after penetrating keratoplasty. *Am J Ophthalmol* 2004;137:415–9.
- [3] Barequet IS, Wasserzug Y. Herpes simplex keratitis after cataract surgery. *Cornea* 2007;26:615–7.
- [4] Sheng Y, Sun W, Gu Y, Lou J, Liu W. Endophthalmitis after cataract surgery in China, 1995–2009. *J Cataract Refract Surg* 2011;37:1715–22.
- [5] Barry P, Gardner S, Seal D, Gettinby G, Lees F, Peterson M, et al., ESCRS Endophthalmitis Study Group. Clinical observations associated with proven and unproven cases in the ESCRS study of prophylaxis of postoperative endophthalmitis after cataract surgery. *J Cataract Refract Surg* 2009;35:1523–31.
- [6] Patel NN, Teng CC, Sperber LT, Dodick JM. New-onset herpes simplex virus keratitis after cataract surgery. *Cornea* 2009;28:108–10.
- [7] Jhanji V, Ferdinands M, Sheorey H, Sharma N, Jardine D, Vajpayee RB, et al. Unusual clinical presentations of new-onset herpes simplex virus keratitis after cataract surgery. *Acta Ophthalmol* 2012;90:514–8.
- [8] Santos C. Herpes simplex uveitis. *Bol Asoc Med P R* 2004;96:71–4. 77–83.