

Keratouveitis of the Right Eye Secondary to Herpes Zoster Ophthalmicus: A Case ReportAureliza Syfa Salsabila¹, Kantika Prinandita², Meriana Rasyid¹¹Faculty of Medicine, Universitas Tarumanagara, Indonesia²Departement of Ophthalmology, Rumah Sakit Umum Daerah Ciawi, Indonesia**ABSTRACT**

Herpes zoster ophthalmicus (HZO) is a reactivation of the varicella-zoster virus involving the ophthalmic branch of the trigeminal nerve that may cause severe ocular complications, including keratouveitis, potentially resulting in permanent visual impairment. This case highlights the clinical challenge of managing active HZO-associated keratouveitis in the presence of coexisting bilateral senile cataracts, in which treatment prioritization is essential to optimize visual outcomes. A 52-year-old man presented with pain, redness, photophobia, and decreased vision in the right eye for 10 days before hospital admission. Ophthalmologic examination revealed decreased visual acuity in the right eye, with counting fingers at 0.5 m, eyelid edema, conjunctival hyperemia, discharge, conjunctival and ciliary injection, corneal haze with infiltrates, and keratic precipitates, while bilateral lens opacities consistent with senile cataracts were also identified. Dermatological examination demonstrated multiple vesicular lesions distributed along the ophthalmic branch of the trigeminal nerve with a positive Hutchinson sign. The patient was diagnosed with right-eye keratouveitis secondary to HZO accompanied by bilateral senile cataracts and was treated with oral acyclovir, topical acyclovir 3% ophthalmic ointment, topical levofloxacin, topical prednisolone acetate, and cyclopentolate. At the one-week follow-up, the patient showed reduced ocular pain, improvement in right-eye visual acuity from counting fingers at 0.5 m to counting fingers at 3 m, and resolution of ocular tenderness. However, conjunctival hyperemia, mild corneal opacity with residual scarring, and bilateral lens opacities persisted, indicating partial clinical improvement despite ongoing ocular involvement. This case emphasizes the importance of early diagnosis, prompt antiviral therapy, careful ophthalmologic monitoring, and prioritization of active ocular inflammation management before cataract intervention to minimize complications and preserve visual function.

Keywords: Herpes zoster ophthalmicus, keratouveitis, cataract, antiviral therapy, visual impairment

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INTRODUCTION

Herpes zoster ophthalmicus (HZO) is one manifestation of varicella-zoster virus reactivation involving the ophthalmic branch of the trigeminal nerve. This condition is an important infection in

ophthalmology because it may involve ocular structures, such as the cornea, conjunctiva, and uvea, with the potential to cause decreased visual acuity and even blindness if not managed appropriately. HZO generally occurs in individuals with decreased immunity, particularly older adults, and is characterized by a vesicular rash in the dermatomal distribution of the trigeminal nerve accompanied by characteristic neuropathic pain (Riordan-Eva & Whitcher, 2018).

In addition to HZO, senile cataract is one of the most common causes of decreased visual acuity in older adults. Senile cataract occurs due to a degenerative process in the ocular lens that causes progressive opacity, thereby interfering with the transmission of light to the retina. Changes in lens protein structure, oxidative stress, and long-term exposure to ultraviolet radiation are factors that contribute to the pathogenesis of cataract (WHO, 2007).

This case is important because it demonstrates the coexistence of an acute infectious ocular disease, keratouveitis secondary to HZO, and a chronic degenerative condition, bilateral senile cataracts, both of which contributed to visual impairment. The coexistence of these conditions presents a clinical challenge because active HZO-related ocular inflammation should be adequately controlled before cataract surgery can be considered. This case highlights the importance of careful clinical assessment, appropriate treatment prioritization, and close ophthalmologic monitoring to prevent irreversible ocular complications and optimize visual outcomes. It also emphasizes that accurate differentiation between active infectious inflammation and coexisting degenerative ocular disease is essential for determining the appropriate sequence of management and avoiding unnecessary or premature surgical intervention.

Therefore, this case report aims to describe the clinical presentation, diagnostic findings, management, and prognosis of keratouveitis secondary to HZO in a patient with bilateral senile cataracts, while highlighting the clinical challenges in treatment prioritization and the importance of early recognition of concurrent ocular pathologies that may influence therapeutic decision-making (Ilyas, 2010).

METHODS

This case report describes a 52-year-old male patient diagnosed with right-eye keratouveitis secondary to herpes zoster ophthalmicus (HZO), accompanied by bilateral senile cataracts. Data were obtained through history taking, ophthalmologic examination, dermatologic examination, and review of the patient's medical records. The diagnosis was established based on clinical findings, including ocular manifestations and characteristic vesicular skin lesions distributed along the ophthalmic branch of the trigeminal nerve. The patient received systemic antiviral therapy, topical antiviral therapy, topical antibiotics, topical corticosteroids, and cycloplegic agents. Clinical findings, management, and outcomes were analyzed descriptively and compared with the relevant literature. Patient confidentiality was maintained by anonymizing all identifiable personal information. Verbal informed consent for publication of the case and accompanying clinical photographs was obtained from the patient prior to manuscript preparation.

RESULTS

A 52-year-old male patient presented with pain and redness in the right eye for 10 days before hospital admission. The complaint was accompanied by swelling, photophobia, and decreased vision. General examination showed that the patient appeared moderately ill and was fully conscious. Vital signs were relatively stable, with a blood pressure of 110/90 mmHg, a pulse rate of 84 beats per minute, a respiratory rate of 20 breaths per minute, and a body temperature of 36.6°C.

Ocular physical examination on January 3, 2025, showed abnormalities in the right eye (OD), including decreased visual acuity of counting fingers at 0.5 m, eyelid edema accompanied by tenderness and hyperemia, and conjunctival hyperemia, discharge, and conjunctival and ciliary

injection. The sclera appeared red. The cornea appeared slightly cloudy, with infiltrates and keratic precipitates. The lens appeared slightly cloudy, with a positive shadow test (Figure 1).

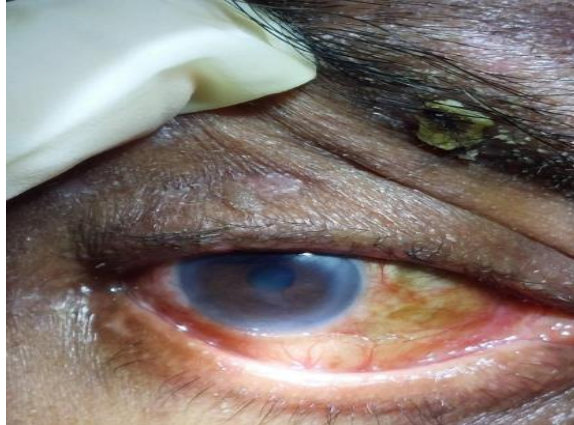


Figure 1. Right eye (OD)

In the left eye, the lens appeared slightly cloudy, with a positive shadow test (Figure 2).



Figure 2. Left eye (OS)

Dermatological examination revealed regional lesion distribution on the right side, involving the frontal, facial, orbital, and nasal regions. The lesions were multiple, irregular in shape, and varied in size from miliary to nummular. The lesion borders appeared indistinct, and the lesions were dry. The efflorescence consisted of grouped vesicles and plaques with coarse scales, accompanied by pustular crusts. A positive Hutchinson's sign was observed, characterized by vesicular lesions involving the nasal region.



Figure 3. Close-up facial photograph focusing on the right eye (OD)

The patient was diagnosed with right-eye keratouveitis (oculus dexter/OD) secondary to herpes zoster ophthalmicus (HZO), accompanied by bilateral senile cataracts (oculi uterque/OU). The patient was treated with systemic antiviral therapy consisting of oral acyclovir 800 mg five times daily, topical antiviral therapy using acyclovir 3% ophthalmic ointment five times daily, topical corticosteroid therapy with prednisolone acetate ophthalmic suspension five times daily, prophylactic topical antibiotic therapy using levofloxacin ophthalmic solution five times daily, and cycloplegic therapy with cyclopentolate ophthalmic solution three times daily. These therapies were administered to suppress viral replication, control ocular inflammation, prevent secondary bacterial infection, alleviate ocular pain, and reduce the risk of ocular complications.

At the follow-up examination on January 10, 2025, the patient reported reduced ocular pain; however, blurred vision, conjunctival redness, ocular itching, and residual crusted lesions around the right periorbital and nasal regions persisted. Ophthalmologic examination demonstrated improvement in right-eye visual acuity from counting fingers at 0.5 m to counting fingers at 3 m, resolution of ocular tenderness, and reduced corneal inflammation, although conjunctival hyperemia, mild corneal opacity with residual corneal sensitivity changes and scarring, a shallow anterior chamber, and lens opacity remained. Intraocular pressure remained within the normal range (11.2 mmHg in the right eye and 16.9 mmHg in the left eye).

The patient received oral acyclovir (800 mg five times daily), topical acyclovir 3% ophthalmic ointment (five times daily), prednisolone acetate ophthalmic suspension (five times daily), levofloxacin ophthalmic solution (five times daily), and cyclopentolate ophthalmic solution (three times daily) during the initial treatment period from January 3 to January 10, 2025, followed by scheduled ophthalmologic re-evaluation.

The patient's prognosis was good *ad vitam*. The *ad functionam* prognosis was good for both eyes, reflecting partial clinical improvement following treatment in the right eye, although persistent visual impairment remained due to active keratouveitis and coexisting bilateral senile cataracts. The *ad sanationam* prognosis for the right eye remained *dubia ad malam* because of intraocular involvement and the potential risk of residual corneal scarring and permanent visual impairment, whereas the prognosis for the left eye was good. Therefore, prompt treatment and close ophthalmologic follow-up remain essential to minimize complications, including corneal scarring, secondary glaucoma, and permanent visual loss.

DISCUSSION

Herpes zoster ophthalmicus is a reactivation of the varicella-zoster virus that remains latent in the trigeminal nerve ganglion, particularly in the ophthalmic branch (V1), which is responsible for sensory innervation of the forehead, eye, and nose. Viral reactivation is generally triggered by decreased immunity, whether due to advanced age, systemic disease, or stress, causing the virus to become active again and spread along the nerve fibers to the skin and ocular structures (Ilyas, 2010).

Involvement of the ophthalmic branch is characterized by vesicular lesions distributed along the V1 dermatome, accompanied by severe pain and Hutchinson's sign (defined as the presence of vesicular lesions on the tip, side, or root of the nose, indicating involvement of the nasociliary branch of the ophthalmic division [V1] of the trigeminal nerve in herpes zoster ophthalmicus). In this case, abnormalities in the right eye, including conjunctival hyperemia, ocular discharge, conjunctival and ciliary injection, and mild corneal haze with corneal infiltrates and keratic precipitates, indicated involvement of the anterior segment structures, namely the cornea and uvea, thereby supporting the diagnosis of keratouveitis. This condition represents one of the serious complications of herpes zoster ophthalmicus (HZO), which may result in decreased visual acuity and even blindness if not managed adequately (Kanski & Bowling, 2023).

Management in this patient was consistent with the theory, namely the administration of systemic antiviral therapy in the form of acyclovir 800 mg five times daily, which aims to inhibit varicella-zoster virus replication. This therapy is most effective when administered within the first 72 hours after the onset of lesions. Although this patient presented approximately 10 days after the onset of symptoms, systemic antiviral therapy remained indicated because active ocular involvement, including keratouveitis, was still present. In patients with ongoing ocular inflammation, antiviral treatment may still provide clinical benefit by limiting continued viral replication, reducing inflammatory activity, preventing further ocular complications, and supporting recovery when combined with appropriate topical therapy. In addition, topical therapy in the form of antivirals, antibiotics, and corticosteroids was administered to reduce inflammation and prevent secondary infection. The administration of cycloplegics was also appropriate to reduce ciliary muscle spasm and pain caused by uveitis. This combination therapy aims to control infection, reduce inflammation, and prevent further complications (American Academy of Ophthalmology, 2023).

In addition to HZO, the patient also had senile cataracts in both eyes. Senile cataract is a degenerative process characterized by lens opacity due to changes in lens proteins, oxidation, and long-term exposure to ultraviolet radiation. Examination revealed slightly cloudy lenses in both eyes, which is consistent with the features of an early-stage to immature cataract. This condition also contributed to the patient's decreased visual acuity. However, cataract management in this case was not yet the main priority because an active infectious and inflammatory process was still present in the right eye (Sitorus *et al.*, 2017).

The patient's prognosis varies depending on the aspect being assessed. The prognosis is good *ad vitam* because the condition is not life-threatening. The *ad functionam* prognosis is considered good in both eyes, given the improvement in right-eye visual acuity following treatment. However, the *ad sanationam* prognosis in the right eye tends to be *dubia ad malam*, considering the involvement of the cornea and uvea, which poses a risk of permanent visual impairment. Therefore, prompt, appropriate, and adequate management is essential to prevent further complications, such as corneal scarring, secondary glaucoma, and postherpetic neuralgia (Liesegang, 2008).

CONCLUSION

In this case, right-eye involvement was observed, including decreased visual acuity, conjunctival hyperemia, discharge, conjunctival and ciliary injection, and corneal opacity with infiltrates and keratic precipitates, indicating an inflammatory process involving the cornea and uvea. This condition carries a risk of permanent visual impairment if not properly managed.

The management provided, including systemic antivirals, topical antivirals, antibiotics, corticosteroids, and cycloplegics, was consistent with the recommended management of HZO. Systemic and topical antiviral therapy was administered to suppress viral replication, topical corticosteroids were used to control ocular inflammation associated with keratouveitis, prophylactic topical antibiotics were prescribed to reduce the risk of secondary bacterial infection in the compromised ocular surface, and cycloplegic agents were administered to relieve ciliary muscle spasm and ocular pain. In addition, bilateral senile cataracts also contributed to the patient's decreased visual acuity; however, cataract management was appropriately deferred until the active ocular infection and inflammation had been adequately controlled.

The patient's overall prognosis was good *ad vitam*. The *ad functionam* prognosis was considered good in both eyes, reflecting the improvement in right-eye visual acuity from counting fingers at 0.5 m to counting fingers at 3 m following treatment. However, the *ad sanationam* prognosis for the right eye remained *dubia ad malam* because of residual corneal scarring and intraocular involvement, which may increase the risk of permanent visual impairment. Therefore, prompt treatment, regular ophthalmologic follow-up, and timely management of the coexisting cataract after resolution of active inflammation are essential to optimize visual outcomes.

RECOMMENDATION

Early ophthalmologic assessment is essential in patients with suspected herpes zoster ophthalmicus to enable prompt diagnosis and timely initiation of antiviral therapy, thereby reducing the risk of ocular complications and permanent visual impairment. Patients should be encouraged to adhere to the prescribed antiviral and topical treatment regimen and attend scheduled follow-up visits to evaluate clinical response and detect potential complications. During corticosteroid therapy, regular monitoring of intraocular pressure is recommended to identify steroid-induced ocular hypertension or glaucoma. In patients with coexisting senile cataracts, cataract surgery should be considered only after complete resolution of active ocular infection and inflammation to optimize visual outcomes and minimize postoperative complications.

REFERENCES

- American Academy of Ophthalmology. (2023). *Basic and clinical science course (BCSC): Section 8—External disease and cornea*. American Academy of Ophthalmology.
- Ilyas, S. (2010). *Ilmu penyakit mata* (4th ed.). Fakultas Kedokteran Universitas Indonesia.
- Kanski, J. J., & Bowling, B. (2023). *Kanski's clinical ophthalmology: A systematic approach* (9th ed.). Elsevier.
- Liesegang, T. J. (2008). Herpes zoster ophthalmicus: Natural history, risk factors, clinical presentation, and morbidity. *Ophthalmology*, 115(2 Suppl.), S3–S12. <https://doi.org/10.1016/j.optha.2007.10.009>
- Riordan-Eva, P., & Whitcher, J. P. (2018). *Vaughan & Asbury's general ophthalmology* (19th ed.). McGraw-Hill Education.

- Salsabila *et al.* (2026): Keratouveitis of the Right Eye Secondary to Herpes Zoster Ophthalmicus: A Case Report
- Sitorus, R. S., Sitompul, R., & Widyawati, S. (2017). *Buku ajar oftalmologi*. Fakultas Kedokteran Universitas Indonesia.
- World Health Organization. (2007). *Global initiative for the elimination of avoidable blindness: Action plan 2006–2011*. World Health Organization.