CASE REPORT

Ophthalmic zoster sine herpete manifesting as conjunctivitis, eyelid ulcer, and lymphadenopathy: a case report

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Abstract

A 64-year-old man with a history of herpes zoster on his upper back presented with a small ulcer on the right lower eyelid and two lumps on the right upper neck as well as a 1-week history of redness and mild swelling of the right eye. Examination revealed follicular conjunctivitis with clear watery discharge, a 1.5 mm clear-based ulcer at the eyelid margin, and ipsilateral submandibular lymphadenopathy. There was no dermatomal vesicular skin rash, keratitis, uveitis, elevation in intraocular pressure, or posterior involvement. A conjunctival swab was positive for varicella-zoster virus, confirming the diagnosis of ophthalmic zoster sine herpete. The patient was treated with valacyclovir 1 g three times a day for 1 week. The conjunctival injection resolved on day 3, and the ulcer healed after 2 weeks. At the 6-month follow-up, the patient remained free from recurrence or long-term sequelae. Ophthalmic zoster sine herpete is an unusual form of herpes zoster ophthalmicus. Without the clues of cutaneous eruptions, diagnosis could be delayed, resulting in long-term ocular complications. Timely diagnosis and antiviral therapy are crucial for rapid resolution and preventing long-term sequelae.

Key words: Conjunctivitis; Herpes zoster ophthalmicus

Case presentation

In June 2024, a 64-year-old man presented to the Department of Ophthalmology, Queen Mary Hospital, Hong Kong, with a small ulcer on the right lower eyelid and two lumps on the right upper neck as well as a 1-week history of redness and mild swelling of the right eye. He reported no visual changes, pain, vesicles, or systemic symptoms such as fever, flu-like symptoms, or upper respiratory tract infections. He had no recent exposure to cats or dogs, nor had he travelled recently. As a physician himself, the patient had initiated 2 days of oral amoxicillin 1g twice a day but had no improvement. He had received the recombinant zoster vaccine more than 7 years earlier after two episodes of herpes zoster on his upper back. His ocular history was unremarkable.

On examination, his corrected visual acuity was 0.7 in the right eye and 0.8 in the left eye. Intraocular pressure was 15 and 14 mmHg, respectively. His pupils were equal and reactive to light, without relative afferent pupillary defect. There was no exophthalmos or limitations in extraocular movement. Slit-lamp examination revealed follicles on the lower (but not upper) palpebral conjunctiva, conjunctival injection (more severe inferiorly), and clear watery discharge (**Figure a**). The cornea was clear and negative for staining. Corneal sensation was preserved and symmetrical in both eyes. The anterior chamber was quiet with no keratic precipitate. The ulcer was 1.5 mm in diameter, with a shallow clean base. The right lower eyelid was mildly swollen with no frank erythema, tenderness, or madarosis. Periocular, facial, and perioral skin showed no vesicular dermatomal rash. Ipsilateral pre-auricular and submandibular lymph nodes were palpable and tender. Dilated fundus examination of the right eye showed a pink disc and normal macula, with no signs of vitritis, vasculitis, or retinitis. Left eye and ocular adnexa examinations were unremarkable.

The follicular conjunctivitis and tender lymphadenopathy suggested a viral infection, but the isolated eyelid ulcer was highly atypical. A conjunctival swab was taken for polymerase chain reaction studies for varicella-zoster virus (VZV), herpes simplex virus 1 and 2, adenovirus, and common respiratory viruses including coronavirus, influenza A and B, and parainfluenza virus 1 to 5. A conjunctival swab

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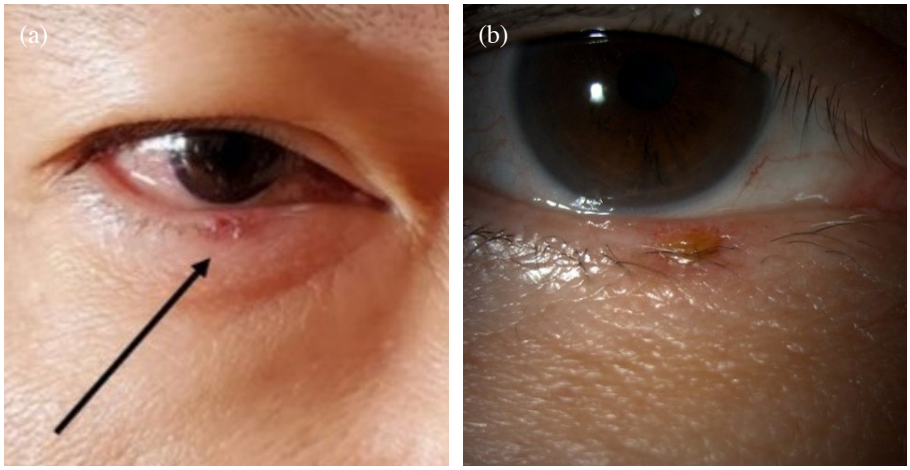


Figure. (a) Mild conjunctival injection with clear watery discharge and a small (1.5 mm) ulcer at the right lower eyelid margin (arrow). (b) Resolution of conjunctival injection and crusting of the right lower eyelid ulcer on day 3 of oral valacyclovir.

for Gram staining and bacterial culture was also obtained. Considering unilateral conjunctivitis and lymphadenopathy in Parinaud oculoglandular syndrome, blood test for Bartonella henselae antibodies was taken.

The conjunctival swab was positive for VZV, confirming the diagnosis of ocular zoster sine herpete (ZSH). The rest of the microbiological investigations were all negative.

The patient was started on a course of oral antiviral therapy, specifically valacyclovir 1 g three times a day for 1 week. The conjunctival injection resolved and the ulcer crusted on day 3 (**Figure b**). After 2 weeks, the lower eyelid ulcer completely healed, and the patient was asymptomatic. Corrected visual acuity was 0.8 in both eyes. There was no intraocular involvement throughout. At the 6-month follow-up, the patient remained free from long-term sequelae or recurrence.

Discussion

Ocular ZSH is an uncommon manifestation of herpes zoster ophthalmicus, characterised by a unilateral vesicular rash along the dermatomal distributions of the trigeminal nerve following reactivation of latent VZV. Ocular ZSH occurs in a small subset of patients with herpes zoster ophthalmicus who present with ophthalmic symptoms but without the characteristic cutaneous rash.[1] An isolated follicular conjunctival reaction and ulcer on the lower lid, sparing the upper lid, reflects herpes zoster reactivation along the maxillary branch of the trigeminal nerve. In contrast, primary VZV infection usually manifests as a more generalised conjunctival reaction and lid ulceration.

Early diagnosis and appropriate treatment of ocular ZSH is crucial to achieve good outcomes. Without antiviral therapy, ocular involvement occurs in approximately 50% of patients with herpes zoster ophthalmicus.[2] Although most cases of herpes zoster can be diagnosed clinically, diagnosing ocular ZSH without the clues of cutaneous eruptions is often difficult and delayed. A delay in treatment is associated with serious ocular complications, including keratitis, scleritis, uveitis, and glaucoma.[3] Timely diagnosis requires a high index of suspicion and rapid laboratory confirmation. Polymerase chain reaction for VZV DNA is the gold standard for diagnosis due to its short turn-around time and high sensitivity (95%) and specificity (100%).[4]

Oral antiviral therapy is recommended, preferably within 72 hours of symptom onset, to reduce disease progression, hasten recovery, and decrease the severity of acute pain.[5] Three guanosine analogues have been approved, including acyclovir (800 mg 5 times daily for 7 to 10 days), valacyclovir (1000 mg 3 times daily for 7 days), and famciclovir (500 mg 3 times daily for 7 days). Valacyclovir and famciclovir showed higher bioavailability and more consistent levels in the blood than acyclovir.[5] Our patient had a rapid complete recovery within 2 weeks, with no recurrence or long-term ocular sequelae.

Conclusion

Ophthalmic ZSH is an unusual form of herpes zoster ophthalmicus. Without the clues of cutaneous eruptions, diagnosis could be delayed, resulting in long-term ocular complications. Timely diagnosis and antiviral therapy are crucial for rapid resolution and preventing long-term sequelae.

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