

A Case of Acute Dacryoadenitis Associated with Herpes Zoster Ophthalmicus

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Background: Acute dacryoadenitis is an uncommon disease.

Case: We present what we believe to be the first reported case of herpes zoster ophthalmicus with the onset of acute dacryoadenitis.

Observations: A 30-year-old man complained of severe ocular pain and hyperemia in his right eye. Magnetic resonance imaging (MRI) demonstrated enlargement of the right lacrimal gland and acute dacryoadenitis was diagnosed. Two days after treatment with systemic antibiotics he developed iridocyclitis and skin lesions confined to the first division of the trigeminal nerve; therefore, herpes zoster ophthalmicus was diagnosed. Treatment with acyclovir immediately resolved the ocular pain and swelling of the upper eyelid. MRI conducted in the 4 months after the initial examination showed there was no longer enlargement of the right lacrimal gland.

Conclusion: Clinicians should be aware that varicella-zoster virus may cause acute dacryoadenitis. *Jpn J Ophthalmol* 2003;47:107–109 © 2003 Japanese Ophthalmological Society

Key Words: Dacryoadenitis, herpes zoster ophthalmicus, lacrimal gland, varicella-zoster virus.

Introduction

Acute dacryoadenitis is a relatively rare disease, for which mumps virus, measles virus, Epstein-Barr virus, influenza virus, and bacterial infection have been listed as causes.^{1–3} It has been described that varicella-zoster virus can also cause acute dacryoadenitis.^{1,2} However, to our knowledge, there is no such case in the literature. We report, perhaps for the first time, a case of herpes zoster ophthalmicus with the onset of acute dacryoadenitis.

Case Report

A 30-year-old Japanese man experienced severe ocular pain and hyperemia in his right eye for 4 days. An ophthalmic examination on May 27, 2000, showed only conjunctival injection and swelling of the upper eyelid. Visual acuity was 20/20 in both eyes. The results of ocular examinations were otherwise normal. Topical steroid and oral nonsteroidal anti-inflammatory drug (NSAID) therapy was started under the diagnosis of scleritis, but his ocular pain was not ameliorated. Magnetic resonance imaging (MRI) on May 29 showed remarkable enlargement of the right lacrimal gland (Figures 1A, 1B). Systemic antibiotic therapy was started under the diagnosis of acute bacterial dacryoadenitis, but the ocular pain and swelling of the upper eyelid were not resolved. After 2 days of treatment with antibiotics the patient developed skin lesions confined to the first division of the

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Figure 1. Coronal (A) and axial (B) fat-suppressed contrast-enhanced T1-weighted magnetic resonance images showing swelling and abnormal enhancement of the right lacrimal gland (arrows). (B) Abnormal enhancement also is present in the upper eyelid and anterior segment of the eye, indicative of iridocyclitis (arrow heads).

trigeminal nerve and iridocyclitis (Figure 2). Therefore, herpes zoster ophthalmicus was diagnosed.

Systemic antibiotic therapy was discontinued and intravenous acyclovir (5 mg/day, 3 times a day) was begun, with the use of topical steroid and acyclovir ointment. After 4 days of treatment with acyclovir, the severe ocular pain and swelling of his upper eyelid was resolved. Serologic studies on May 31 disclosed varicella-zoster virus IgG was 4600 at IU/mL (EIA: enzyme immunoassay), and varicella-zoster virus IgM was the 4.5, the cutoff index, indicative of reactivation of the latter virus. In contrast, Epstein-Barr viral capsid antigen IgG was 1:160, Epstein-Barr viral capsid antigen IgM; <10, and Epstein-Barr viral nuclear antigen IgG; 1:20 (FA: fluorescent antibody method), evidence of latent infection by Epstein-Barr virus. Intravenous acyclovir was administered for 7 days. Iridocyclitis disappeared over a 3-month period



Figure 2. The patient developed the cutaneous eruptions of herpes zoster ophthalmicus involving the first division of the trigeminal nerve after acute dacryoadenitis was diagnosed. Note the conjunctival injection in his right eye.

with the application of topical steroid and acyclovir ointment 4 times daily. Four months after the initial medical examination, MRI showed there was no longer enlargement of the right lacrimal gland. His visual acuity has remained 20/20; no other complications such as keratitis and glaucoma have been found during the follow-up period. So far, no dry eye syndrome has been observed in the right eye of this patient.

Discussion

Herpes zoster occurs usually in healthy adults, and increasingly in immunocompromised persons.^{4,5} This patient was a young and healthy adult and his hematologic profile indicated no signs of immunosuppression.

Various ocular complications caused by varicella-zoster virus are known: keratitis, conjunctivitis, episcleritis, scleritis, iridocyclitis, glaucoma, retinitis, optic neuritis, and extraocular muscle palsy.^{4,5} In contrast, acute dacryoadenitis is not well known as a complication of varicella-zoster virus. However, it is reported that varicella-zoster virus can cause acute dacryoadenitis, although the inflammation can be obscured by the skin eruption.^{1,2} Generally, orbital computerized tomographic (CT) scanning and MRI are not conducted in a patient with herpes zoster ophthalmicus. In this case, the ocular lesion preceded the skin eruption. At first, there was a misdiagnosis of scleritis. However, steroid and NSAID therapy did not relieve the patient's ocular pain, leading to the MRI examination and the diagnosis of acute dacryoadenitis. The literature mentions that the lacrimal branch of the trigeminal nerve is not as commonly affected as the other branches.⁴ However,

it could be that CT scans and MRI could demonstrate a swelling of the lacrimal gland in more cases of herpes zoster ophthalmicus than we can imagine; ie, it is possible that this is not a rare complication, but an overlooked complication.

Dacryoadenitis occurs in both infectious and noninfectious diseases. Acute dacryoadenitis is usually associated with viral infection such as mumps, measles, and infectious mononucleosis, as well as herpes zoster ophthalmicus.^{1,2} Bacterial dacryoadenitis occurs with a history of trauma and/or of a conjunctival infection.¹ Acute dacryoadenitis also occurs in sarcoidosis, polyarteritis nodosa, and Wegener's granulomatosis.¹ The diagnosis of acute dacryoadenitis is based on the clinical manifestations of pain, redness, a sensation of fullness and swelling of the outer aspect of the upper eyelid, and diagnostic imaging such as CT scans and MRI.^{1,3} The palpebral, orbital, or both, lobes of the lacrimal gland can be involved in dacryoadenitis.¹ In this case, swelling of the lacrimal gland was considered to be present mainly in the orbital part rather than in the palpebral part, because no swelling of the

gland was observed via the conjunctival sac when the right eyeball was directed downward and medially.

To our knowledge, this is the first report of a case of dacryoadenitis associated with varicella-zoster virus. Acute dacryoadenitis associated with varicella-zoster virus should be considered when conjunctival injection of unknown origin is seen in a patient with severe unilateral ocular pain.

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