

Presumed Acute Adenoviral Dacryoadenitis Associated with Epidemic Keratoconjunctivitis: A Case Report

Eva Tirkey, Shivcharan Lal Chandravanshi, Shashi Jain, Vinay Mishra

Department of Ophthalmology, Shyam Shah Medical College, Rewa, Madhya Pradesh, India

ABSTRACT

Acute dacryoadenitis is an uncommon ophthalmic disorder that involves inflammation of the lacrimal gland. It is caused by various bacteria, viruses, fungi, and parasites. The most frequently involved causative microorganisms are staphylococcus and mumps virus. In this case report a 16-year-old male child with acute dacryoadenitis associated with adenoviral epidemic keratoconjunctivitis is described. As far we are aware of, this is the first case of presumed adenovirus-induced acute dacryoadenitis associated with keratoconjunctivitis.

Keywords: Acute dacryoadenitis, adenoviral keratoconjunctivitis, epidemic keratoconjunctivitis, lacrimal gland, lymphadenopathy

INTRODUCTION

Dacryoadenitis is a rare ophthalmic disorder. It is caused by various bacteria, viruses, fungi, and parasites.^[1] The most frequently involved causative microorganisms are staphylococcus bacteria and mumps virus. In this case report, a 16-year-old immunocompetent male child with acute dacryoadenitis associated with adenoviral epidemic keratoconjunctivitis is described. As far we are aware of, this is the first case of adenovirus-induced acute dacryoadenitis associated with epidemic keratoconjunctivitis.

CASE REPORT

A 16-year-old boy presented to us complaining severe pain, watering, photophobia, redness, diminution of vision and drooping of upper eyelid in the right eye since 2 days. He was also having upper

respiratory tract infection for 5 days. In his family, brother and sister were also suffering from acute red eye and diagnosed adenoviral keratoconjunctivitis. We also diagnosed many patients with adenoviral keratoconjunctivitis in the last 2 months from the same area. Ocular examination of the right eye revealed mechanical ptosis due to upper eyelid edema, erythema, circumcorneal congestion, follicles in upper and lower conjunctival fornices, chemosis and painful and enlarged palpebral lobe of lacrimal gland [Figure 1]. Corneal sensation decreased in all four quadrants in both the eyes. Anterior chamber showed normal findings. Visual acuity was 6/24 in the right eye and 6/6 in the left eye. About 3 mm × 2 mm size epithelial defect was present, which had a geographical configuration at 6'O clock position, 2–3 mm inside the limbus. Multiple subepithelial infiltrates were present in the whole cornea. Fluorescein staining showed superficial punctate staining of upper 3/4th part of the cornea. Bed of the geographical ulcer stains about 3 mm × 2 mm with fluorescein. The left eye also showed multiple white subepithelial infiltrations. Regurgitation on pressure over lacrimal sac area was negative. Pupillary reaction, extraocular muscle movements, intraocular pressure and dilated fundus examination in both eyes were normal. Bilateral tender preauricular lymphadenopathy was noted. Giemsa stain showed predominantly mononuclear cells in the conjunctival

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Address for correspondence

Dr. Shivcharan Lal Chandravanshi, Department of Ophthalmology, Shyam Shah Medical College, Gandhi Memorial Hospital, Rewa - 486 001, Madhya Pradesh, India. E-mail: dr_scl@rediffmail.com

smear in both eyes. A computerized tomography scan of the right orbit revealed diffuse enlargement of lacrimal gland [Figure 2]. The chest X-ray and abdominal ultrasound were normal. Laboratory investigations such as complete blood count, erythrocyte sedimentation rate, conjunctival swab cultures, bacterial and fungal blood cultures were unremarkable. ELISA for HIV was nonreactive. Serum immunoglobulins IgG and IgM for herpes, cytomegalo, and Epstein-Barr virus were within normal range. Serologic studies for adenovirus antibody IgG were 0.85 IV (negative) and IgM was 1.19 IV (positive). The child was treated with topical cyclopentolate 1% 3 times a day and carboxymethyl cellulose 0.5%, 2 h and ibuprofen 400 mg 4 times a day for 5 days along with pantoprazole 40 mg once a day for 5 days. He responded well and was discharged from the hospital on 7th day on topical cyclosporine-A 1% 4 times a day and carboxymethyl cellulose 0.5% eye drop 4 times a day. At 16th week follow-up both of his cornea were clear, and his visual acuity returned to 6/6. Slit lamp examination showed normal appearance of lacrimal glands with no signs of dry eye [Figure 3].

DISCUSSION

Dacryoadenitis is an inflammation of lacrimal gland. It is classified as acute and chronic dacryoadenitis on the basis of chronicity. Acute dacryoadenitis is usually unilateral, painful and have a rapid onset. Chronic dacryoadenitis can be bilateral, painless condition with long duration of onset. Acute dacryoadenitis is an uncommon disease and usually caused by infectious agents.^[1] Incidence of acute dacryoadenitis is one in 10,000–15,000 cases.^[2] Mumps virus and Epstein-Barr virus are most frequent cause for viral dacryoadenitis.^[3] Other viruses involved in dacryoadenitis are herpes simplex virus, infectious mononucleosis virus, cytomegalovirus, human immune deficiency virus and herpes zoster virus.^[1-4] We assume that our patient was suffering from pharyngoconjunctival fever as he had upper respiratory tract infection (pharyngitis and rhinorrhea) and preauricular lymphadenopathy simultaneously. The acute viral illness proceeds with a primary lesion of respiratory tract, eye, and lymph node.^[5] Dacryoadenitis may be caused by direct invasion of adenovirus of the lacrimal gland or by secondary involvement due to inflammation extending from the keratoconjunctival lesions.

Adenoviral infection in the human eye can cause nonspecific conjunctivitis, follicular conjunctivitis, pharyngoconjunctival fever, epidemic keratoconjunctivitis, and chronic/relapsing adenoviral conjunctivitis.^[5,6] The diagnosis of adenoviral epidemic keratoconjunctivitis in present case based is on typical clinical signs such as positive family history,

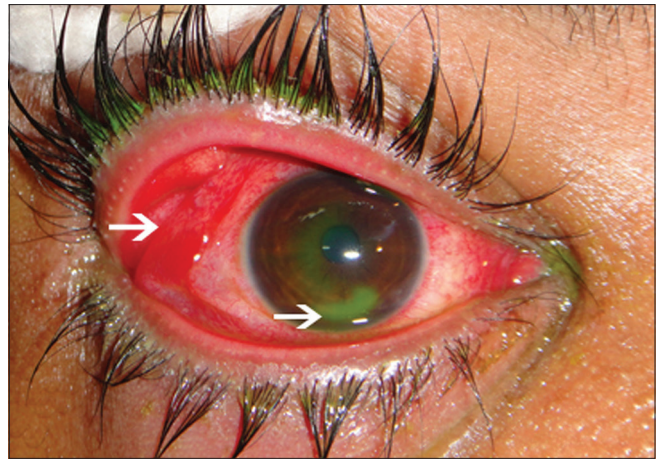


Figure 1: Slit lamp photograph of cornea showing adenoviral dacryoadenitis and corneal ulcer on fluorescein staining

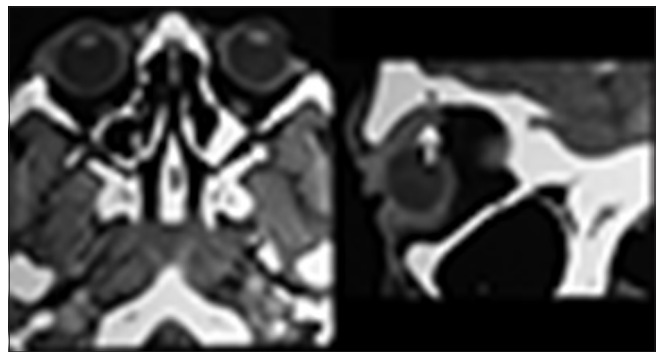


Figure 2: Computerized tomography scans of orbit showing diffuse enlargement of the right lacrimal gland

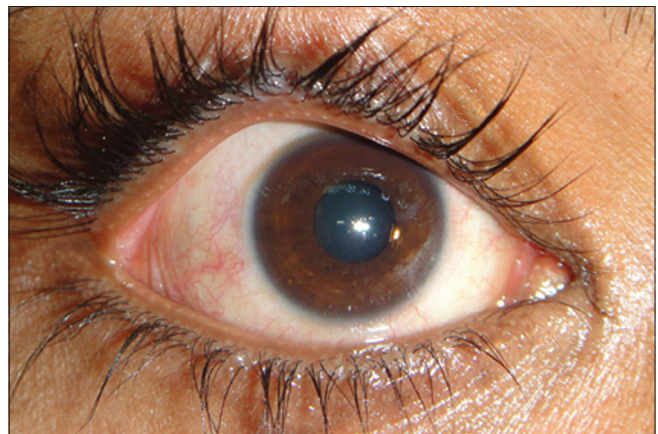


Figure 3: Posttreatment clinical photograph showing complete resolution of signs of dacryoadenitis and corneal lesions

simultaneous community involvement, bilateral subepithelial white infiltrations, conjunctival follicles, tender preauricular lymphadenopathy, higher level of serum adenoviral antibodies IgM and presence of inclusion bodies in conjunctival smear. Epidemic keratoconjunctivitis is caused by adenovirus serovars 8, 19, and 37.^[7] Serological typing and polymerase chain reaction for adenoviral were not available in

our case, which is a limitation of our case report. Various laboratory tests such as viral culture, fluorescent antibody test, enzyme immune assay, hemagglutination test, complement fixation test and polymerase chain reaction for adenovirus were required for confirmation.^[6] Epidemic keratoconjunctivitis is a self-limiting disorder, and no anti-viral drug is effective. Treatment is mainly symptomatic.^[8] Topical cyclosporine-A 0.1% may be required in nonresolving subepithelial corneal infiltrations.^[9]

Adenoviral infection should be considered agent in the differential diagnosis of acute dacryoadenitis. To avoid treatment delay, acute dacryoadenitis should be kept in mind as a possible manifestation of adenoviral ocular infection during treatment of epidemic adenoviral keratoconjunctivitis.

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