Case Report

Bilateral dacryoadenitis

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ABSTRACT

Acute dacryoadenitis is an uncommon condition that involves inflammation of the lacrimal gland. In rare instances, dacryoadenitis may be bilateral. A delay in proper treatment of an otherwise simple case of dacryoadenitis may lead to significant soft tissue morbidity such as cellulitis, lacrimal gland abscess, or orbital abscess. We report the case of a 24-year-old male who presented to the emergency department with acute bilateral dacryoadenitis. The patient's symptoms did not respond to oral antibiotics and he subsequently required admission for intravenous antibiotics. During his hospitalization the patient had diagnostic testing to try to determine the etiology for his symptoms. The unique aspects of managing a case of bilateral dacryoadenitis as well as treatment recommendations are discussed in this case report.

Key Words: Dacryoadenitis, eye diseases, lacrimal apparatus diseases

INTRODUCTION

Dacryoadenitis is a rare disorder that is caused by an obstruction occurring anywhere between the conjunctiva and the lacrimal ductules. When it occurs acutely, it is usually due to infection. If improperly treated, dacryoadenitis can result in orbital abscess or cellulitis. As a result, patients should be monitored very closely and IV antibiotics should be administered if worsening is noted. We present a case report on an extremely rare condition, bilateral dacryoadenitis, which required treatment with IV antibiotics. The diagnostic and therapeutic approaches that should be considered in cases of dacryoadenitis are discussed in this case report.

CASE REPORT

A 24-year-old male presented to the emergency department (ED) with complaints of bilateral eye pain, redness, and photosensitivity for two days. The patient had been evaluated at another hospital the previous day where he was treated with ciprofloxacin eye drops and neomycin/polymyxinB/hydrocortisone ophthalmic suspension. The patient denied any improvement in symptoms.

On physical examination the patient was febrile with a temperature of 102.8°F. His orbital examination revealed chemosis, injected sclera, edema of the upper and lower lids, and yellow discharge bilaterally [Figures 1 and 2]. Extraocular muscle movement was restricted in all directions. Visual acuity was 20/50 bilaterally. Visual field testing was not possible secondary to upper and lower lid edema. Pupils were equally round and reactive to light. Eye pressures by tonometry were within the normal range. Lymphadenopathy was present in both the cervical and submandibular regions.

Laboratory analysis revealed an elevated white blood cell count of 13,800 K/UL. A computed tomography (CT) scan of the orbits was performed which showed bilateral enlargement and inflammation of the lacrimal glands without evidence of orbital cellulitis [Figures 3 and 4]. After evaluation by an ophthalmology physician the patient was discharged home on ofloxacin eye drops and oral amoxicillin/clavulanic acid. The patient was instructed to discontinue his previous antibiotics and to follow up for reassessment.

The patient was reevaluated 4 days later and his symptoms had worsened. It was recommended that the patient be admitted for intravenous antibiotics as well as further diagnostic assessment to better determine the etiology for his symptoms. Blood cultures drawn from the patient's ED visit 4 days prior had no growth. Eye culture results could not be located. A repeat CT scan of the orbits showed no progression to orbital cellulitis.

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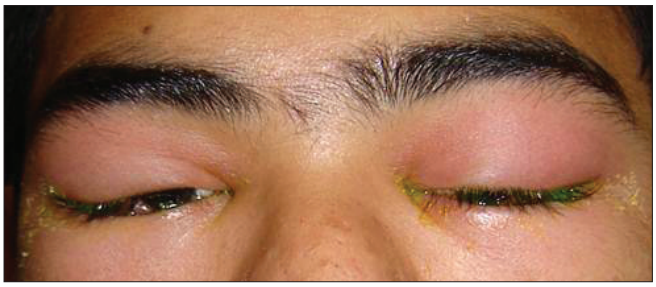

Figure 1: Erythema and edema are greatest over the lateral one-third of the upper eyelids (photo was taken after the application of flouroscein and with the patient's written permission)

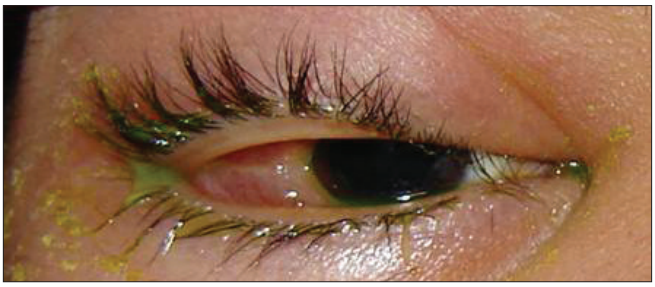

Figure 2: Chemosis and injection of the sclera are present (photo was taken after the application of flouroscein and with the patient's written permission)

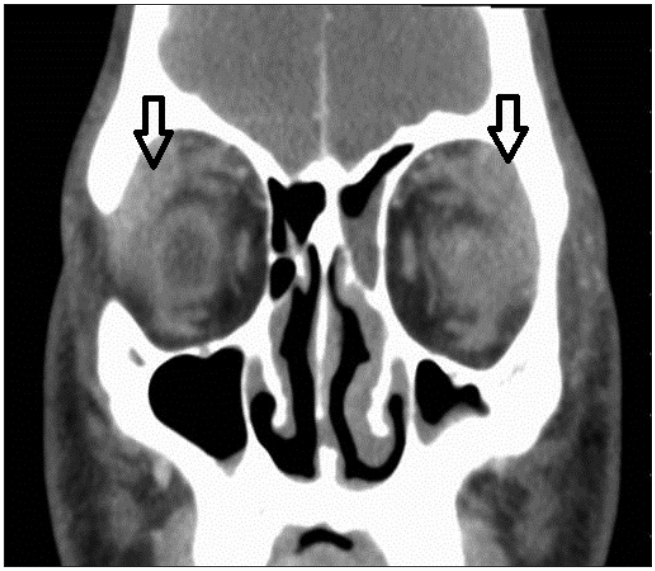

Figure 3: Coronal CT image showing bilateral lacrimal gland inflammation (arrows)

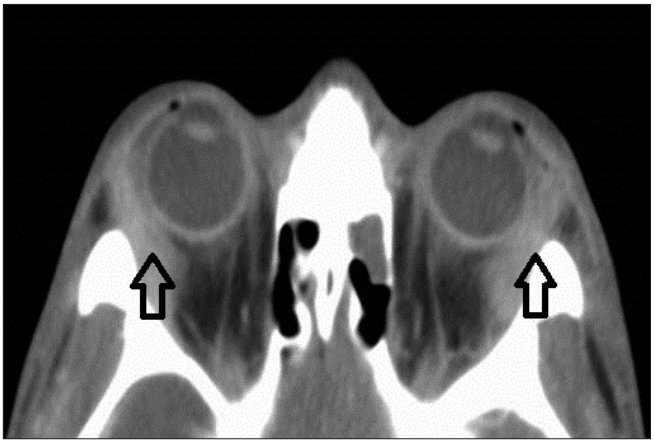

Figure 4: Axial CT image showing bilateral lacrimal gland inflammation (arrows)

Rapid plasma reagin, cytomegalovirus immunoglobulin M antibody, measles antibody, and blood cultures were all negative. The patient's cytomegalovirus immunoglobulin G antibody and mumps immunoglobulin G antibody tests were positive suggesting previous but not active infection. The patient's monospot test was negative; however his Epstein Barr Virus viral capsid antigen immunoglobulin G was positive in a 1:640 ratio suggesting previous exposure but no acute infection. Thyroid-stimulating hormone, thyroid stimulating immunoglobulin, neutrophil cytoplasmic antibody, rheumatoid factor, antinuclear antibody, angiotensin- converting enzyme levels, and a chest radiograph were also performed to determine if the patient's inflammation was secondary to an autoimmune process. These tests were all negative. The patient's symptoms were felt to be secondary to a bacterial infection so he was treated with intravenous vancomycin and piperacillin/tazobactam. He was successfully discharged home on hospital day 3 with oral trimethoprim/sulfamethoxazole and ofloxacin ophthalmic drops.

DISCUSSION

Dacryoadenitis occurs in only one in 10,000 ophthalmic cases and may be acute, subacute, or chronic.[1] It is most common in children and young adults but may been seen in all age groups.[2] Patients generally present with redness, tenderness, warmth, and swelling of the lateral third of the upper eyelid.[2] A mucopurulent discharge, localized conjunctival injection, and chemosis may also be present.[2] Impaired vision, limited ocular movement, and pain with movement suggest an orbital cellulitis. CT can be used to determine if there is involvement of the orbital tissues.[2]

Dacryoadenitis may be caused by an obstruction occurring anywhere between the conjunctiva and the lacrimal ductules. When it occurs acutely, it is usually due to infection, with viral etiologies such as mumps, measles, influenza, mononucleosis, herpes, and cytomegalovirus occurring most commonly.[1,2] The most common bacterial pathogen is *Staphylococcus aureus*.[3] Infections may also be caused by *Streptococcus pyogenes*, *Haemophilus influenza*, *Neisseria gonorrhea*, *Chlamydia trachomatis*, and *Treponema pallidum*.[1,2,4] Fungal and parasitic infections are rare.[3] Infection may spread to the lacrimal gland hematogenously, transneuronally, from the conjunctiva or via traumatic injury.[2] Other causes of dacryoadenitis include neoplasms such as lymphoma[2] and lacrimal gland tumors.[5]

In rare cases, patients may present with bilateral dacryoadenitis. These patients should be evaluated for an infectious process but also screened carefully for systemic diseases and autoimmune

disorders such as sarcoidosis, Wegener's granulomatosis, Grave's disease, and Sjogren's syndrome.[5,6]

Severe cases of dacryoadenitis should initially be treated with a broad spectrum intravenous antibiotic such as cefazolin or ticarcillin/clavulanate which covers gram positive and gram negative organisms. Antibiotic selection can later be tailored to culture results. In areas in which methicillin-resistant *S aureus* (MRSA) is present, vancomycin is recommended.[3] Medications such as dicloxacillin, cephalexin, and cefadroxil are appropriate for oral treatment.[3] Patients with suspected MRSA should receive oral treatment with sulfamethoxazole-trimethoprim, clindamycin, or linezolid.[3] Viral infections can be managed symptomatically with warm compresses and oral non-steroidal anti-inflammatory medications. Inflammatory disorders will require treatment of the underlying systemic condition. If symptoms continue for more than 2 weeks, a lacrimal gland biopsy should be considered.[6] If improperly treated, dacryoadenitis can result in lacrimal gland or orbital abscess, orbital cellulitis, lid ptosis, and adhesions.[2] Patients should be followed up very closely and IV antibiotics should be administered if worsening is noted. Continued diagnostic testing is mandatory in patients who remain symptomatic.

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