

# Lacrimal Gland Abscess Secondary to Acute Dacryoadenitis in a Child: A Case Report

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## Abstract

Lacrimal gland abscess is a rare orbital infection. We report a case of orbital cellulitis secondary to lacrimal gland abscess due to acute dacryoadenitis in a child. Computed tomography of orbit confirmed the clinical diagnosis. The aim of treatment is to prevent visual and life threatening complications of orbital cellulitis. Combination of intravenous antibiotic, surgical incision and drainage is necessary for complete resolution of the lacrimal gland abscess in a child.

**Keywords:** Lacrimal Gland Abscess; Acute dacryoadenitis; Orbital Cellulitis; Child

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## Introduction

Lacrimal gland abscess is an uncommon infection of the orbital structures. It may present as preseptal or orbital cellulitis. Early and prompt management is needed to prevent visual and life threatening sequelae, including orbital abscess, blindness, cavernous sinus thrombosis and intracranial abscess [1].

Sinusitis is a rare cause of acute dacryoadenitis. Acute dacryoadenitis is known to occur in paediatric populations. We report a case a child who developed lacrimal gland abscess due to acute dacryoadenitis, and presented with manifestations of orbital cellulitis.

## Case Report

An 11-year-old boy with chronic sinusitis presented with history of left eyelid redness and swelling for two weeks duration.

It was gradual in onset and painful. The swelling was associated with blurring of vision, diplopia on left gaze, nasal discharge and low grade fever. There was no prior history of trauma or insect bite to the eyelid.

He was diagnosed with sinusitis three years ago by Otorhinolaryngology specialist with symptoms of early morning sneezing and nasal discharge, especially in the left side. The symptoms were controlled with steroid nasal spray. However, he had no history of bronchial asthma or eczema. There was no recent episode of upper respiratory tract infection prior to the left upper lid swelling.

Visual acuity was 6/6 (20/20) in the right eye and 6/12 (20/40) in the left eye. Both pupils were equal and reactive to light. The left upper lid was inflamed, warm, tender, and caused a complete mechanical ptosis. There was eso-hypotropia with limited laevoelevation of the left eye (Figure 1 A and B). The conjunctival was hyperemic and chemotic on temporal side in the left eye. The anterior segment and fundus examinations were unremarkable in both eyes. The intraocular pressure was normal.

The patient was comfortable with heart rate of 106 beats per minute and body temperature of 37.9°C. Systemic examination revealed multiple submandibular lymph nodes enlargement. Other systemic examinations were unremarkable.

An urgent Computed Tomography (CT) of brain, orbit and paranasal sinuses revealed a thick enhancing wall collection at the extraconal space of left orbit, arising from the lacrimal gland with obliteration of the orbital septum. There was also collection of fluid in the left lacrimal duct. The adjacent lateral rectus muscle appeared diffusely swollen (Figure 2). Full blood count showed leucocytosis with predominantly neutrophil count.

C-reactive protein was elevated. There was no growth of organism on blood culture and sensitivity.

**Figure 1 (A and B):** Left upper lid swelling with complete ptosis and eso-hypotropia



**Figure 2:** CT brain and orbit showed thick enhancing wall collection at the extraconal region measures about 2.5cm (AP) x 1.6cm (W) x 3.0cm (CC) cm



He was diagnosed with left orbital cellulitis with lacrimal gland abscess secondary to acute dacryoadenitis. He was started on intravenous amoxycillin clavulanate 850mg 8 hourly, intravenous hydrocortisone 50mg daily, topical moxifloxacin 2 hourly, topical dexamethasone 6 hourly and ointment fusidic acid 8 hourly on the left eye.

The patient's condition was improving with the above treatment. There was a reduction in upper lid swelling, and the patient was able to open his left eye. However, the eso-hypotropia persisted. Surprisingly, there was purulent discharge from the

superior fornix upon digital compression of superotemporal area of the left upper lid (Figure 1C), suggestive of pus from the lacrimal gland.

Subsequently, he underwent an emergency incision and drainage of pus under general anaesthesia. The abscess was drained via subconjunctival incision 9mm from limbus at the superotemporal region. Culture of the pus grew *Staphylococcus aureus* and sensitive to the above antibiotic. He completed one week course of intravenous amoxycillin clavulanate and intravenous hydrocortisone.

**Figure 1C:** Purulent pus discharge from superior fornix upon digital compression of left upper lid



Eventually, there was an improvement in the swelling of the left upper lid, with minimal limitation of elevation in the left eye. He was discharge with oral amoxycillin clavulanate 625mg twice daily for two weeks, topical moxifloxacin, and topical dexamethasone 4 hourly.

He was reviewed at one week later. The visual acuity improved to 6/6 (20/20) in both eyes. He in both eyes. The left upper lid looked normal with slight congestion of the conjunctiva on superotemporal area. There was complete recovery of extraocular movement.

## Discussion

Acute dacryoadenitis is a rare ocular disease with an incidence of 1:10,000 people [2]. The pathophysiology of dacryoadenitis is due to ascending infection from adjacent conjunctiva through the lacrimal ductules into the lacrimal gland, trauma and bacteraemia [3]. Our patient has symptoms history of chronic sinusitis. Possibility of infection spread from paranasal sinus to lacrimal gland area is believed due thin papyracea or congenital bony dehiscence.

Rhemn *et al.*, documented a 16-years review of 16 patients with dacryoadenitis. They reported that the commonest causative organism was Epstein-Barr virus [4]. Other than that, *Staphylococci*,

*Streptococci* and *Gonococci* are commonly found to be the causative bacterial pathogens [2].

CT orbit and brain is necessary to confirm the diagnosis of lacrimal gland abscess, and exclude other possible complications, such as orbital abscess, cavernous sinus thrombosis and intracranial abscess. Presence of fluid level in the lacrimal gland supports the above diagnosis [1-3, 5, 6].

Initiating of broad spectrum intravenous antibiotic is the mainstay of treatment in cases of lacrimal or orbital cellulitis [1]. However, surgical incision and drainage is compulsory for complete resolution of the abscess [3, 5, 6]. We decided to proceed with incision and drainage of the abscess as the eso-hypotropia was persistent despite intravenous antibiotic regime. Post operatively, there was a marked improvement in the extraocular movement of the affected eye.

In conclusion, lacrimal gland abscess following acute dacryoadenitis is uncommon. Orbital cellulitis is children requires thorough evaluation. High index of suspicion with prompt treatment is needed to prevent the devastating sequelae. Diagnostic imaging helps to confirm the diagnosis.

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