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Case Report

A rare case of eyelid abscess and orbital cellulitis following acute dacryocystitis

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ABSTRACT

Acute dacryocystitis usually presents as a pre-septal cellulitis since the lacrimal sac lies anterior to the orbital septum. Orbital cellulitis secondary to acute dacryocystitis is very rare due to a variety of anatomic barriers to the orbit but can occur and result in abscess formation with risk of visual compromise.

We describe a case of 28 yrs. old otherwise healthy adult who presented with almost complete visual loss following orbital cellulitis and lower lid abscess formation secondary to acute dacryocystitis in right eye. The clinical, radiological, intraoperative and postoperative findings are discussed. He underwent emergency lateral canthotomy and cantholysis, lower lid abscess drainage along with planned endoscopic endonasal dacryocystectomy as resolute surgery.

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1. Introduction

Dacryocystitis is an infection of the lacrimal sac secondary to obstruction of the nasolacrimal duct. Acute dacryocystitis develop when bacterial growth occurs in the stagnant tears within the lacrimal sac. This condition may progress to lacrimal sac abscess followed by skin fistula formations. The infection can also spread to the lower eyelid tissues, forming a preseptal cellulitis. Orbital abscess and cavernous sinus thrombosis is the worst scenario that can happen if it extend even the incident is rare. Typically orbital cellulitis responds to systemic antibiotic therapy and surgical drainage without permanent optic nerve compromise.

2. Case Report

We present a case of orbital cellulitis with lid abscess causing optic nerve compression secondary to acute dacryocystitis in young patient. A 28 yrs young man (Figure 1) presented in our medical college emergency

department with pain and swelling in left eye since 3 day. Systemic examination was normal except fever. Local examination includes: Right eye was normal. left eye proptosis 3mm, lids were swollen tensed erythematous and can't be open, visual acuity (VA) was perception of light (PL) +ve checked after manual lid separation, pupil- RAPD present, extraocular movement (EOM) -restricted in all gaze, lens was clear. IOP 18/42 mmHg. Posterior segment examination was deferred. Past history of watering and discharge from left eye since 6 month was there so diagnosis of orbital cellulitis following acute dacryocystis causing compartment syndrome was made.

Patient was asked for MRI orbit left eye. In emergency left eye cantholysis and canthotomy was done to release the orbital pressure and decompress the orbit (Figure 2). Patient was started on intravenous broad spectrum antibiotics (Meropenam, amikacin), oral linezolid and analgesic. Next day VA and EOM improved but lower lid was still tensed and erythematous. We did two stab incision thinking lid abscess. Pus was drained out and send for culture and sensitivity (Figure 3). While waiting for reports, Endonasal

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Fig. 1: Clinical photograph of patient (on day-1) showing left eye orbital cellulitis.

endoscopic dacryocystorhinostomy was done to relieve the nasolacrimal obstruction. Patient started improving after 15 days of i.v antibiotic, vision recovered fully to 6/6. Syringing of NLDO was patent on discharge. Patient is waiting for left lateral canthus reconstruction.

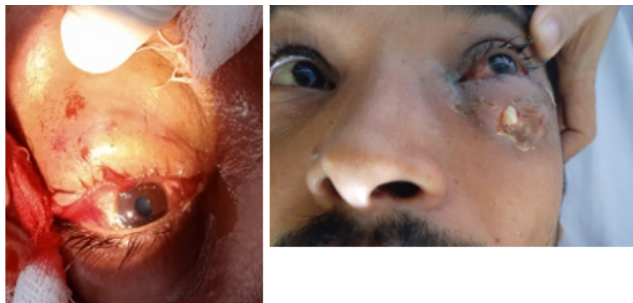


Fig. 2: Emergency cathotomy & cantholysis.

Coronal and axial MRI (Figure:4) of the orbits with contrast showing an enlarged left lacrimal sac and preseptal inflammatory changes consistent with acute dacryocystitis with preseptal cellulitis.

3. Discussion

Dacryocystitis usually presented with swelling around the nasal aspect of the lower eyelid with inflamed overlying skin associated with fever.¹ Most of patients with dacryocystitis present with pre-septal cellulitis and not an orbital abscess due to the insertion of the orbital septum on the posterior orbital crest prevent this condition from spreading into the orbit.² Other anatomical structures such as lacrimal



Fig. 3: Lower lid abscess drainage

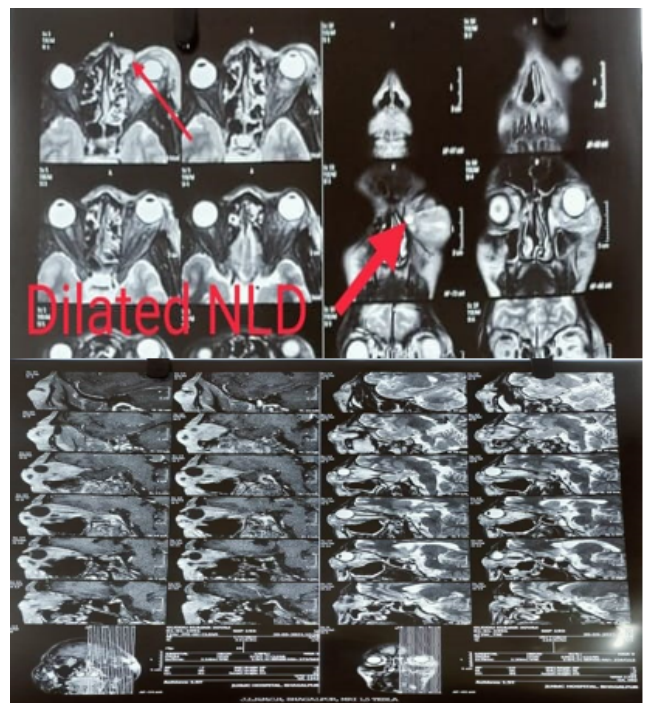


Fig. 4: MRI orbit showing enlarged left lacrimal gland.

fascia, medial canthal ligament and orbicularis muscle also act as a barrier .Once these barriers have been breached, orbital abscess will form and lead to vision loss which requires surgical drainage via opening the lamina papyrcea endoscopically.³ Preseptal cellulitis is a relatively rare but the infection of the subcutaneous tissues anterior to the orbital septum had a potential to spread. If left untreated, the infection will cross the septal barrier and spread to the orbit, resulting in a cellulitis that may have life-threatening sequelae, including orbital cellulitis, cavernous



Fig. 5: Clinical photograph during treatment

sinus thrombosis and meningitis.⁴

There are no randomized trials of antibiotic regimens for the treatment of preseptal cellulitis. Blood cultures are rarely positive and cultures from the site of infection are difficult to obtain. Therefore, treatment is almost always empiric and based upon knowledge of the common infecting organisms (Staphylococcus aureus, Streptococcus pneumoniae, other streptococci and anaerobes) and their usual susceptibility patterns.⁵

4. Conclusion

Acute dacryocystitis is an ophthalmic emergency that can cause orbital cellulitis with abscess formation, and even vision loss, if left untreated.

Preseptal cellulitis is described as a complication of acute sinusitis however it can still occur as a sequelae of acute dacryocystitis. This condition is difficult to be differentiated from orbital abscess which need urgent management to prevent visual loss so CT scan is mandatory to rule out the presence of orbital abscess. Endoscopic endonasal dacryocystorhinostomy (DCR) can be done in emergency to relieve the obstruction and nidus of infection. Elective DCR once the acute infectious phase has settled is the treatment of choice in adult patients to prevent recurrent attack.

5. Conflict of Interest

The authors have stated explicitly that there are no conflicts of interest in connection with this article.

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None

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