

**CASE REPORT**

# A Rare Case of Intraorbital Abscess Engulfing The Optic Nerve in an Anemic Child

Abdul Waris, Riddhi Arya, Faraz Yusuf, Jaswant Singh, Punit Parasurampuria

**Abstract**

Here is a case report of 8 year old male child who presented to us with swelling and protrusion of the right eye associated with redness and watering. The child gave a history of insect bite 4 days prior to presentation. On further radiological examination it was confirmed to be a case of Intraorbital abscess which is rare in occurrence.

**Key Words**

Orbital Cellulitis, Intraorbital Abscess, Proptosis, Optic Nerve

**Introduction**

Intraorbital abscess is a rare complication of orbital cellulitis. It is seen more commonly in children and immunocompromised people (1). It should be suspected in patients of orbital cellulitis who are not responding or worsening despite the proper medical therapy.

Here is a case report of 8 year old male child who presented to us with swelling and protrusion of the right eye associated with redness and watering. The child gave a history of insect bite 4 days prior to presentation. On further radiological examination it was confirmed to be a case of Intraorbital abscess which is rare in occurrence.

**Case Report**

An 8 year old male child presented to us with complaints of swelling and protrusion of the right eye 4 days prior. There is also history of redness and pain in the eyes and fever along with it. On initial general

examination child was of average built and nutrition, weighing 16 kg and was having temperature 99°F. The eye examination revealed visual acuity of right eye to be hand movements with accurate PR in all the quadrants. Both the upper and lower lids of right eye were swollen, conjunctiva was chemosed, pupil was normal size but not reacting to the light, consensual present, and ocular movements were restricted as well as painful in all the gazes. Rest of the ocular examination including fundus was within normal limits.

On local examination of the swelling it was found to be diffuse, tender, warm to touch, soft to firm in consistency and associated with mucoid discharge. (Fig 1). The Hertel's exophthalmometry examination with a base distance of 103 mm revealed proptosis of right eye horizontally 13 mm and vertically downwards 3 mm.

From the Institute of Ophthalmology, Aligarh Muslim University, Aligarh, India.

Correspondence to : Dr. Riddhi Arya, Consultant, Institute of Ophthalmology, Aligarh Muslim University, Aligarh, India



**Fig .1 Intraorbital Abscess With Mucoïd Dischagre**



**Fig .2 Swelling Increased after Systemic Steroids**



**Fig .3 CT scan of Orbit Showing Intraorbital Abscess**



**Fig .4 CT Scan of Orbit with Effacement of I/L Optic Nerve with Preseptal Cellulitis**

The lab investigations revealed a haemoglobin count of 8.5gm% and leucocytosis. ESR was raised being 62mm in 1st hour. On chest X-Ray fibrosis of right upper lobe was found. Blood culture and sensitivity came out to be negative in our case. Tests for HIV was non reactive and a thorough paediatric consultation was done, and the following treatment was started: Inj. Ceftriaxone 200 mg X Intravenous X 12 hrly, Inj. Metronidazole 200 mg X Intravenous X 8 hrly, Inj. Vancomycin 250mg X Intravenous X 12 hrly, Tab. Prednisolone 20 mg X once daily P/C, Cap Rabeprazole 20 mg once daily with topical medication Moxifloxacin 0.5% X 1hrly and Carboxy methyl cellulose 0.5% with patching of the eye. The condition of the patient improved after 2 days as swelling was reduced. But on the 3rd day the swelling increased

and movements of the eye were fully restricted, systemic steroid was stopped as patient developed cough (Fig. 2). The revised treatment was Inj. Augmetin (amoxicillin with clavulanate potassium) 500 mg X Intravenous X 8 hrly, Inj. Amikacin 150 mg intravenous X 12 hrly, Inj. Metronidazole 120 mg X intravenous X 8 hrly with similar topical medications but the condition of the patient didn't improve.

The CT scan of orbit was suggestive of right sided intraorbital abscess at medial and superior aspect of the right globe in intraconal compartment leading to proptosis and lateral displacement of right globe with involvement of medial rectus and superior rectus-LPS complex with effacement of I/L optic nerve with preseptal cellulitis (Fig.3 & 4).

Surgical drainage of the abscess was done by Superior approach Anterior orbitotomy via vertical eyelid splitting and the pus was sent for culture. *Moraxella catarrhalis* was found on culture. The same antibiotics were continued as preoperatively and the patient was discharged with satisfactory clinical result but still with poor optic nerve functions.

### Discussion

Orbital abscess is collection of pus within the orbital tissues and is a well known and rare complication of orbital cellulitis (1). Orbital abscesses are potentially blinding/lethal diseases in patients of all ages (2,3). The most common cause of orbital cellulitis in children is ethmoidal sinusitis (2,3,4). Others are trauma, skin infections, dental infections, otitis media, intraorbital foreign bodies, dacryoadenitis, squint surgery, endophthalmitis, retinal buckling procedures, bacteremia & HIV (6, 7, 8, 9). It has been found that orbital cellulitis is more common on left side however no reason has been ascertained for the same (1).

The mean age at presentation is 20-31 years (5,10). The common presentation is an acute fever, with proptosis, lid swelling, chemosis, impaired ocular motility, visual field defects, colour vision deficits, abnormal pupillary reaction (2,9). Orbital infections are classified as (7):

Group I: Preseptal cellulitis, inflammatory edema, congestion

Group II: Orbital infiltration & Mass effects & Functional deficits

Group III: Subperiosteal abscess

Group IV: Orbital abscesses & Mass effects

Group V: Intracranial extension of inflammation into cavernous sinus

In most of the cases of orbital cellulitis if the primary infection is well controlled with judicious IV medications the cellulitis does improve in the orbit. In some cases the infection may become localized in the subperiosteal space as the periosteum offers a strong barrier to the spread of infection to the inner compartments of the orbit. But in our case the infection invaded the muscle cone and even engulfed the optic nerve as a localized abscess. This may be attributed to the child's anemic status, lung fibrosis due to some infection along with his poor health.

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