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ORBITAL CELLULITIS AND "KOCH'S BACILLI"!!!

Medical Science

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ABSTRACT

Orbital cellulitis is an impending emergency in which confusion still exists between the diagnosis of this serious condition and that of preseptal cellulitis. Delay in treatment may cause blindness and progression to life-threatening sequelae such as brain abscess, meningitis or cavernous sinus thrombosis. We report a case, of a 8 year old male patient presented to our department with a right orbital swelling for the past few days. CT scan revealed an abscess in relation to, lateral superior inferior walls of the orbit, in which, the orbital cellulitis had an underlying cause.

KEYWORDS

orbital cellulitis.

INTRODUCTION

orbital cellulitis is a serious infection in children that can result in significant complications, including blindness, cavernous sinus thrombosis, meningitis, subdural empyema, and brain abscess.[1] These complications have become rare in the antibiotic era, but the potential for sight- or life-threatening complications makes prompt diagnosis and early treatment important. The development of orbital cellulitis due to various causes has been recognized clinically in a number of studies. Orbital cellulitis may occur due to dental abscess, trauma of orbit, peri-ocularsurgery,panophthalmitis, septicaemia and immunosuppression but in the majority of the cases, they represent complications of maxillary sinusitis.[4] Agents that cause preseptal and orbital cellulitis include those associated with sinusitis and skin infections, namely H. influenzae, S. pneumoniae,Moraxella catarrhalis, S. aureus, S. pyogenes, coagulase-negative Staphylococcus species, α- and β-hemolytic Streptococcus species, and S. viridans.[2,5,6] Bacteria may coexist with viral infection.[7] With chronic sinusitis, infections are more likely to be polymicrobial[8]. Rare causative agents include Pseudomonas aeruginosa, Neisseria gonorrhoeae, Treponemapallidum, Mycobacterium tuberculosis, Bacteroides species, and fungal infections.[9,10]

The orbital septum is a layer of fascia extending vertically from the periosteum of the orbital rim to the levator aponeurosis in the upper eyelid. Orbital cellulitis and preseptal cellulitis are the major infections of the ocular adnexal and orbital tissues.[11] Orbital cellulitis is an infection of the soft tissues of the orbit posterior to the orbital septum, differentiating it from preseptal cellulitis, which is an infection of the soft tissue of the eyelids and periocular region anterior to the orbital septum. Orbital cellulitis has various causes and may be associated with serious complications. As many as 11% of cases of orbital cellulitis result in visual loss. Prompt diagnosis and proper management are essential for curing the patient with orbital cellulitis.[12,13]

CASE REPORT

We report a rare case of a 8 yrs old male patient,with a gradually increasing swelling on the right upper eyelid with some visual deterioration. There was no history of trauma and any dental,or systemic diseases.

On examination circum orbital edema on right eye, proptosis, opthalmoplegia, conjuctival chemosis, hyperemia of the conjunctiva, blepheritis, restricted eye ball movements (diplopia), lid edema and erythema.[2] The ocular movements were restricted particularly in the lateral gazes. Intraocular pressure was normal.[3]

FIG.1.showing Swelling Of The Right Eyelid Extending To The Orbital Margin

Immediately patient was admitted in the hospital. Parentral antibiotics-inj. Penicillin & clauvulanic acid, Inj.Metrogyl and parentral fluids for the fluid replacement were given.

Routine blood investigations were done. Elevated neutrophill count, total WBC count was observed.A contrast enhanced CT of orbit and to the right globe by the abcess, 3.) erosion of the lateral wall of the orbit and 4.) lateral rectus muscle pushed by the abcess,5.) posterior accumulation of the pus and edema pushing the eye ball anteriorly.14,15

Ophthalmologist consultation was taken and there was no vision loss. Patient was planned for the drainage of the pus under general anesthesia.

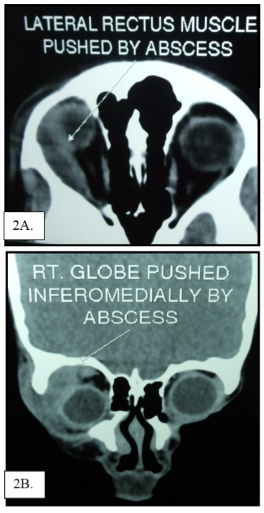

FIG.2A&2B: Showing Presence Of An Abscess Along The Lateral Aspect Of The Lateral Rectus Of The Right Globe.

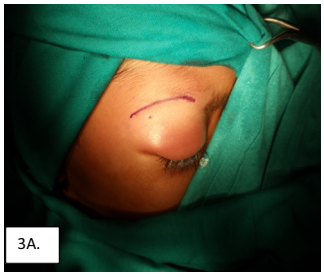

FIG.3A : Showing Marking Made For Upper Brow Incision.

maxilla was taken. That showed, 1.) Subperiosteal abcess with bony lesion, 2.) inferomedial indentation

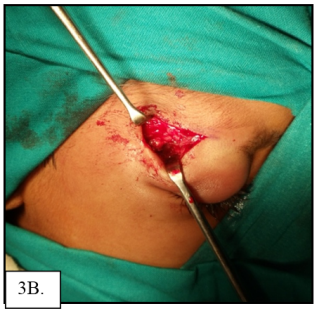

FIG.3B: Showing Drainage Of The Abscess Through The Same Incision.

The orbital abcess was drained by an upper brow incision,Copius amount of pus was drained which was **"thick in nature and pale yellow in colour".** Immediately regression of orbital swelling was noticed and the globe could easily be retropulsed .Eye lid movements were improved.

The pus sample that was collected, was sent for microbiology and histopathology. Pus samples showed the presence of **"Mycobacter iumTuberculosis".**The histopathology reports confirmed the presence of "Koch's bacilli".

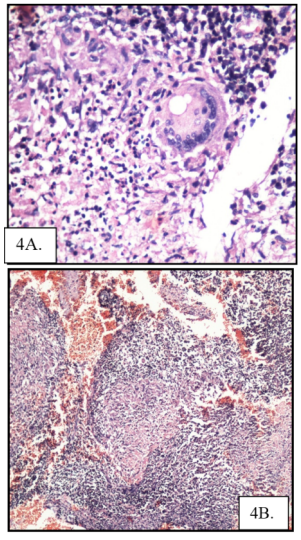

FIG.4A&4B : 40x(fig.4a) & 10x(fig.4b) Photomicrograph Showing Langerhans Giant Cells With Granulomatous Tissue

DISCUSSION

The first case of tuberculosis was reported in the early 18th century.75 percent of the patients were below 20 years of age.In majority of the cases the foci reported were the lungs.

To the best of our knowledge the present case is one of the rarest of its kind with its correlation to the orbital cavity.

The raised intraorbital pressure in orbital cellulitis results from the inflammatory oedema and pus within the bony confines of the orbit. This causes the rapid development of optic nerve compression and ischaemia, the hallmarks of this being reduced visual acuity and impaired colour vision.The optic nerve may also be involved directly by contiguous inflammation of its dural coat. Irreversible damage can occur very rapidly, so that in the presence of orbital cellulitis with optic nerve dysfunction urgent surgical decompression is mandatory.

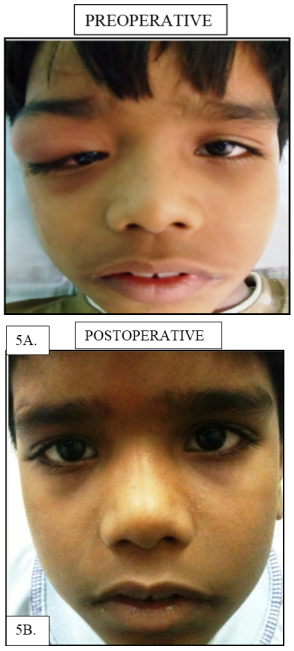

FIG. 5A & 5B : Figures Showing A Comparison Of The Frontal Views Of The Patientafter Completion Of The Anti Tubercular Therapy.

Our patient was fortunate to have normal vision and no optic nerve dysfunction, as late referral is frequently associated with blindness.A high index of suspicion and a low threshold for early specialist referral is required for the optimal management of orbital cellulitis.

The patient was immediately reffered to a pediatrician for evaluation and was being treated with WHO recommended directly observed treatment short course (DOTS) category -1 anti tuberculosis therapy (ATT)(isoniazid (INH), rifampin (RIF), ethambutol (EMB), and pyrazinamide (PZA)).The patient was kept under regular follow up and was doing well.

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