ORBITAL COMPLICATION OF PAEDIATRIC SINUSITIS- A CASE REPORT

S.B Jothiramalingam*[a], Dinesh Kumar [a], Prasanna Kumar [a], Vivek Sasindran [a]

ABSTRACT

Intraorbital abscess is a serious complication of sinusitis. The recommended surgical procedure at present for drainage of abscess is endoscopic approach. Here we report a case of complicated paediatric sinusitis which was treated successfully.

Key words: *Sinusitis, Subperiosteal abscess, Orbital complications, case reports.*

INTRODUCTION

Complications arising from infection of the paranasal sinuses still occur in paediatric sinusitis, despite the use of broad spectrum antibiotics. Inflammatory orbital complications can cause loss of vision. Orbital complications can be divided into several overlapping stages [1]: inflammatory edema, orbital cellulitis, orbital periosteitis, subperiosteal abscess, orbital abscess and cavernous sinus thrombosis [2].

Functional endoscopic sinus surgery is an established standard for surgical treatment of infections of the paranasal sinuses.

Case report:

A 4 year old boy was referred from the Paediatric department with complaints of swelling in left eye for 2 weeks. The swelling was initially in the medial aspect of the left eye and then progressively increased. The swelling was associated with fever and pain at the onset. Patient was being treated with antibiotics and steroids as prescribed by the Ophthalmologist and pain and fever subsided but the swelling persisted. There was no visual disturbance. There was no history of trauma or nasal surgery. Examination revealed a small swelling 1 X 1 cm just above the left medial canthus with associated edema of the upper eyelid. Reddish discoloration of the whole upper eyelid was noted. The swelling was tense and tender on palpation. The left eyeball was displaced forwards, downwards and outwards (fig .1). All the extraocular movements were normal except for restricted upward gaze. Ophthalmologic examination revealed normal fundus with no visual impairment. Diagnostic nasal endoscopy showed enlarged middle turbinate on left side with crowded ostiomeatal complex. Mucoid discharge was seen in choana with adenoid hypertrophy. CT scan of Paranasal Sinuses & Orbit with contrast showed homogenous opacity involving the whole of the left maxillary sinus and ethmoidal sinus with extension into the extraconal compartment of left orbit through a defect in the lamina papyracea (fig. 2). Peripheral enhancement of the lesion was noted. With the provisional diagnosis of left orbital subperiosteal abscess with orbital cellulitis, the patient was taken up for endoscopic drainage of the abscess. Under general anaesthesia, using a 0 ^{0} degree Hopkin's telescope uncinectomy and middle meatal antrostomy was performed on the left side. Polypoidal tissue was removed from the maxillary antrum and the maxillary ostium was made patent. The ethmoidal air cells were cleared till the lamina papyracea could be visualized. The papery thin bone of the lamina was removed almost completely and 10 ml of frank pus was drained out and swab was sent for culture and sensitivity. Patient was continued on broad spectrum intravenous antibiotics. In

Fig. 1 - Pre-operative picture showing displacement of the left eyeball forwards, downwards and outwards.

Fig. 2 - CT Scan of the paranasal sinus with constrast showing homogenous opacity involving the whole of the left maxillary sinus and the ethmoidal sinus with extension into the extraconal compartment. Peripheral enhancement of the abscess can be noted

CORRESPONDING AUTHOR :

Prof. S.B. JOTHIRAMALINGAM
Dept of ENT, Head and Neck Surgery
Sri Ramachandra Medical College and Research Institute
Porur, Chennai - 600 116.
E-mail: entsrmc@yahoo.co.in
[a] Dept. of ENT, Head & Neck Surgery

Fig. 3 - Post-operative picture showing normal position of the eye

the immediate post operative period, the proptosis subsided and the eye movements were back to normal. Nasal packs were removed the subsequent day and patient was discharged after 5 days of antibiotics and steroids. However the pus did not grow any organism. Patient has been followed up for three months with no evidence of recurrence (fig .3).

Discussion:

Complications of sinusitis can be life threatening and often require surgical therapy. Complications originate, from progressive spread of inflammation along the bony dehiscences in the lamina papyracea, directly by infectious breakdown of the lamina along the vessels[2], and in children along the open suture lines. The commonest sinus to be involved in paediatric age group is the ethmoid sinus. Compression of small nutrient vessels of the optic nerve might be responsible for loss of vision [3]. The infectious agents are often Haemophilus Influenza (especially in small children) [4], Streptococcus pneumoniae and Staphylococcus aureus. It is difficult to estimate the incidence of orbital complications because many patients are treated effectively by paediatricians or general practitioners. In the initial stage i.e. orbital cellulitis, genuine proptosis of the globe occurs and this can be difficult to distinguish from the oedema of the lids. The proptosis will be exaggerated by a specific collection of pus which is most often sub or extraperiosteal. Pus readily collects between the sinus and orbit, stripping the periosteum from the adjacent lamina papyracea. The position of the abscess will determine the angle of displacement, usually combining a degree of axial proptosis with lateral and inferior displacement, as was seen in our patient [5]. The movements of the globe may be restricted by the presence of the mass and/ or oedema of the ocular structures. Visual loss will depend upon the extent and rapidly with which the displacement develops. Colour vision is often impaired first. Once vision is lost it is exceptional for it to return even after surgical and medical decompression. Radiological imaging is mandatory to confirm the diagnosis and for exact planning of the surgery.

Computed Tomographic scans are the imaging modality of choice for chronic sinusitis and orbital as well as further complications such as septic cavernous sinus thrombosis [5,6].

An ophthalmologist consultation to document visual acuity should be performed in every case. Endoscopic sinus surgery is a functional and minimally invasive technique and is the treatment of choice at present. The advantages of endoscopic surgery over external approach are minimal surgical trauma, no drains, no visible scars and the healing can be followed by the use of an endoscope. Early diagnosis and intervention is mandatory to prevent life threatening complications of sinusitis.

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