



Research Article

FRONTOETHMOID MUCOCELE AS A CAUSE OF PROPTOSIS

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ABSTRACT

Paranasal sinus mucoceles can present with a multitude of different symptoms including ophthalmic disturbances. We describe a patient with frontal sinus mucoceles presenting with non-axial proptosis and give details of their presentation, investigations and treatment. The treatment of mucoceles is reviewed. It is stressed that a team approach involving the Ophthalmologist, Otolaryngologist and Radiologist is essential for accurate diagnosis and management.

INTRODUCTION

A mucocele of a para-nasal sinus is an accumulation of mucoid secretion and desquamated epithelium within the sinus. If the cyst invades the adjacent orbit and continues to expand within the orbital cavity, the mass may mimic the behaviour of many benign growths primary in the orbit. In these circumstances the lesion is of concern to the ophthalmologists. More rarely such lesions may present with epiphora, sluggish pupillary reaction, myopia, optic neuritis, vitreous opacities and cataractous changes of the lens. The present paper reports cases of frontoethmoidal mucoceles who attended the eye out-patient department of government hospital jubbal, with unilateral proptosis with diplopia. 33-years-old female, was admitted with gradually progressive bulging of the right eye ball puffiness in the medial half of right upper lid. The globe was pushed forwards, downwards and out wards by a painless, diffuse, non pulsatile, and non compressible, cystic swelling in the roof and inner wall of the orbit for last 10 days (Figure - 1). The cough impulse was negative. On examination, left eye was normal. The overlying skin was freely movable. Nasolacrimal passages were patent. Adduction and elevation of the eye ball were restricted. Uncrossed diplopia was present. Anterior and posterior segments of the globe were normal.

Vision was 6/6 in both eyes (Snellen's chart). Anterior and posterior rhinoscopic examination revealed mucopurulent discharge in the middle meatus of right nasal cavity. There was past history of recurrent episode of sinusitis. Routine laboratory investigations were within normal limit. On CT paranasal sinuses intraorbital soft tissue is seen along the superomedial quadrant of right orbital cavity in extraconal fat indenting the eye globe. Medial rectus and optic nerve also indented by growth. Clinico radiological diagnosis of frontoethmoidal mucocele of the right side was made. Patient referred to ENT department. An external frontoethmoidectomy was decided upon. A curved incision on the skin was made along the superior nasal quadrant rim of the bony orbit. This incision was slightly higher than the approach preferred for superior orbitotomy. The periosteum was elevated. During dissection the cyst burst and the thick mucoid content was sucked out. The floor of the frontal sinus, inter sinus septum, and part of left ethmoidal air cells were found destroyed and converted into one large cavity. The dura of the anterior cranial fossa was seen bulging through the eroded posterior wall of the left frontal sinus. As the whole of the mucosa was unhealthy it was scraped away from the underlying bone. A neofrontonasal duct was created by making an opening in the middle meatus of the nose. A portex tube covered with a split thickness skin graft was passed through this opening into the sinus cavity and kept in place with anchoring stitches. The tube was removed after six weeks.

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Figure 1. Proptosis of Right Eye



Figure 2. Mri View

The result was very satisfactory. The left eye ball returned to its normal position. Ocular movements became full. Visual acuity was 6/6. The cosmetic appearance of the face was excellent. The patient had no postoperative nasal obstruction or rhinorrhoea.

DISCUSSION

A gradual onset of unilateral proptosis poses a clinical diagnostic challenge to ophthalmologists. Included in the differential diagnoses are dysthyroid eye disease, retrobulbar orbital tumor, inflammatory pseudo tumor, sinus tumor, metastatic lesion and mucocoeles of paranasal sinuses.(2) Progressive unilateral painless proptosis of gradual onset should make one suspicious of a mucocoele involving the paranasal sinuses, the frontal and ethmoid sinuses being the two most common locations. This is especially so, if there is accompanying diplopia, orbital or forehead pain and epiphora, which are frequently the presenting symptoms of mucocoeles (Arrué *et al.*, 1999). The symptoms are produced by pressure against the globe and mechanical interference with its motility. The proptosis is usually non-axial with the globe being displaced away from the site of the mucocoele (Brown *et al.*, 2001).

The amount of proptosis may fluctuate when the patient develops a common cold or has inflamed sinuses. There may be an associated history of sinus or nasal pathology or injury (Akiyama *et al.*, 1999). The patient may occasionally complain of blurred vision and image distortion. Visual loss, field changes and optic atrophy are late manifestations which occur when the proptosis becomes marked. The cause of visual loss is varied. It may be due to direct compression of the optic nerve in the orbit, a vascular or inflammatory process involving the optic nerve refractive errors induced by the indentation on the globe, exposure keratopathy or secondary glaucoma. The ophthalmic manifestations of patient is described are not uncommon presentations of frontal mucocoeles (Har-El, 2001). The definitive treatment of mucocoele is surgery. Surgical treatment of mucocoeles can be accomplished with a minimally invasive endoscopic procedure or craniotomy with craniofacial surgery (Hayasaka *et al.*, 1991) Lai *et al.*, have used the transcaruncular approach for the management of frontoethmoidal mucocoele (Lai *et al.*, 2003). Endoscopic surgery has increased the safety and efficacy of intranasal marsupialization for the treatment of mucocoeles in all paranasal sinuses. Selective outer table craniotomy has also been described to expose the frontal sinus cavity while carefully preserving the inner table, with radical removal of the mucocoele mucosa for frontal mucocoele without any intracranial or intraorbital extension (Leventer *et al.*, 2011) Some of the surgeons prefer the combined endoscopic and craniotomy approach for the treatment of frontal mucocoeles. Endoscopic sinus surgery combined with transcranial surgery is advisable in cases of giant frontal mucocoele. A vascularized local pericranial graft is effective in the prevention of anterior cranial fossa contamination.

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