CASE REPORT

UNILATERAL PROPTOSIS CAUSE FRONTAL MUCOCELE: DIAGNOSIS, INVESTIGATION AND REVIEW OF LITERATURE ABOUT TREATMENT

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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 mucocele presenting with non-axial proptosis and give details of their Presentation, investigations and preferred treatment. Possible ocular manifestations of mucoceles and the diagnostic imaging techniques used are discussed. 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.

KEYWORDS: Proptosis, frontal mucocele, endoscopic sinus surgery, pericranial graft, marsupialization, transcaruncular

INTRODUCTION: Frontal mucocele are collections of inspissated mucus that occur when there is obstruction to the outflow of the frontal sinuses. The obstruction may be due to congenital anomalies, infection, trauma, allergy, neoplasms or surgical procedures in the nose.¹ With continued secretion and accumulation of mucus, the increasing pressure causes atrophy or erosion of the bone of the sinus, allowing the mucocele to expand in the path of least resistance. This may be into the orbit, adjacent sinuses and nasal cavity or through the skin. The mass may remain a simple mucocele containing mucus, or it may become secondarily infected, forming a pyocele. Frontal mucoceles may present with ophthalmic disturbances. They can encroach on the orbit with ocular displacement and proptosis. They are a common cause of long-standing unilateral proptosis. Ocular motility disturbance, lid distortion and periocular pain are other important presentations.

CASE REPORT: This was a case report of a 62-year-old male patient who presented with right-sided headache, nasal obstruction since 4 months and progressive painless proptosis of the right eye for 15 days [Figure 1]. He had no previous medical history. His visual acuity was 6/36 in right and 6/63 in left eye and his color vision was normal. The right-globe was proptosed by 4 mm compared with the fellow eye and was displaced 8 mm inferiorly and temporally. It was firm to retropulsion. The ocular motility of his right eye was restricted in upgaze and horizontal gaze. The pupils were equal and reactive. Anterior rhinoscopy and posterior rhinoscopy being normal. MRI brain with orbit shows, there is well defined lobulated roughly dumbbell shaped space occupying lesion of altered signal intensity seen involving the regions of right frontal sinus and right orbit. The lesion is causing compression and inferior displacement of sup rectus-levator palpebrae superioris muscle complex. The lesion is abutting the post surface of rt. eye ball and causing its mild anterior and inferior displacement-imaging features are s/o? mucocele of right frontal sinus with intraorbital extension.

DISCUSSION: A gradual onset of unilateral proptosis poses a clinical diagnostic challenge to ophthalmologists. Included in the differential diagnoses are dysthyroid eye disease, retrobulbar

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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.²

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.³ 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.¹ 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.⁴

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.⁵ Lai et al., have used the transcaruncular approach for the management of frontoethmoidal mucocoele.⁶ 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.⁷ 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.

CONCLUSION:

1. One of the presentation of frontal mucocoele could be proptosis
2. Diagnosis could be made through various modalities including clinical, ct.mri
3. Treatment is mainly surgical .

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Figure 1

MRI orbit 1

MRI orbit 2

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MRI orbit 3

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