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CASE REPORT

Huge Frontal Sinus Mucocele in an Immunocompromised Patient

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ABSTRACT

Mucoceles of the paranasal sinuses are defined as cystic expansile lesions (Lageback in 1820). Rollet in 1909 coined the term mucocele. Mucocelesare most commonly found in the frontal sinus (60–65%) butcan also occur in ethmoidsinuses (around 25%), sphenoid sinus (1–2%) and maxillary sinus (10%). The etiopathogenesis of PNS mucocele is multifactorial with most common causes being allergy, inflammation and trauma or less commonly it can be secondary to neoplastic lesions in PNS which are obstructing the sinus ostia.

KEYWORDS

• Mucocele • Frontal Sinus • Fess • Draf

INTRODUCTION

A mucocele of PNS is accumulation of desquamated epithelium and mucoid secretion with in the sinus leading to distension of its walls, leading to formation of a cyst like expansile and destructive lesion. The frontal sinus is most common to be involved, whereasethmoid, sphenoid and maxillary mucoceles are rare. Frontal sinus shares its floor with the superior orbital wall hence displacement of orbit in enlarging frontal mucoceles. If not managed adequately Frontal sinus mucoceles are prone to recurrence.

Management of mucocele is only surgical. With two main approaches which includes endoscopic and external approach. Both

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the approaches have their advantages and disadvantages so the decision to use a particular approach is based on the size, site, extent of mucocele and whether it is recurrent or not.

Small mucocele can be asymptomatic. Due to its expansile nature it can grow, and can lead to ophthalmic and intracranial complications. Sinusitis and mucous retention cyst may have similar presentation so they need to be differentiated. Computed tomography (CT) scan of PNS can help in this differentiation.

Management of mucocele is only surgical. With two main approaches which includes endoscopic and external approach. Both the approaches have their advantages and disadvantages so the decision to use a particular approach is based on the size, site, extent of mucocele and whether it is recurrent or not.

CASE REPORT

Here we discuss a case of a 70 yr old female who presented to ENT OPD with chief complaint of right side frontal region swelling and headache from last 2 yrs.The swelling was progressively increasing in size and was associated with pain.There was no history of fever and frequent sneezing. She was operated for cataract 3 months ago. She gave past history of Breast Cancer and was on chemotherapy and radiotherapy.

MRI Nose PNS With Contrast was done which was suggestive of mucocele in right frontal sinus. Figure 1 (A and B) showing frontal sinus mucocele.

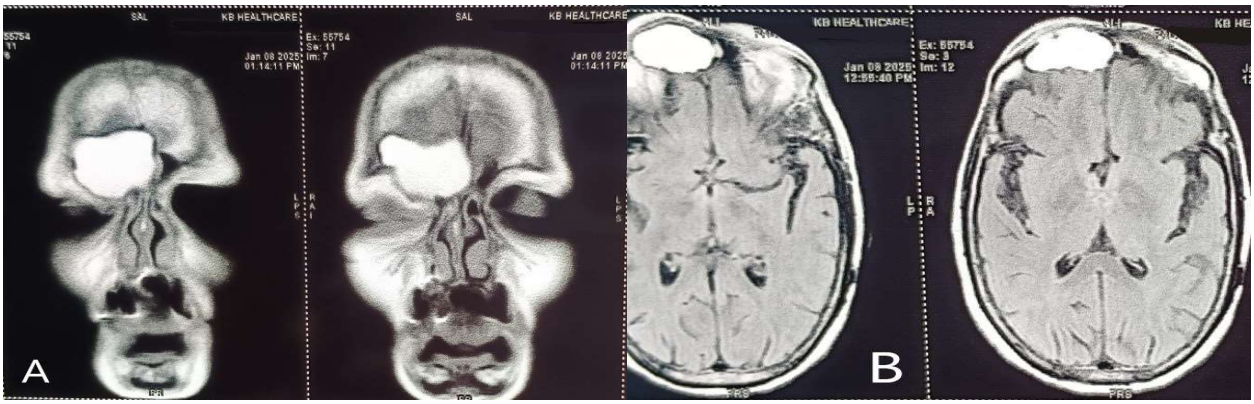

Figure 1: MRI PNS with contrast: in T1 axial section **(A):** T2 frontal section **(B):** Showing a well defined right frontal cystic formation in discrete hypersignal T1, hyper T2 signal. Right frontal sinus is expansile with internal variable signal intensity fluid contents with fluid level

Conservative management was given initially followed by surgery (FESS + DRAF1).

Post-operative period was uneventful

Figure 2 shows the preoperative and postoperative picture of the patient.

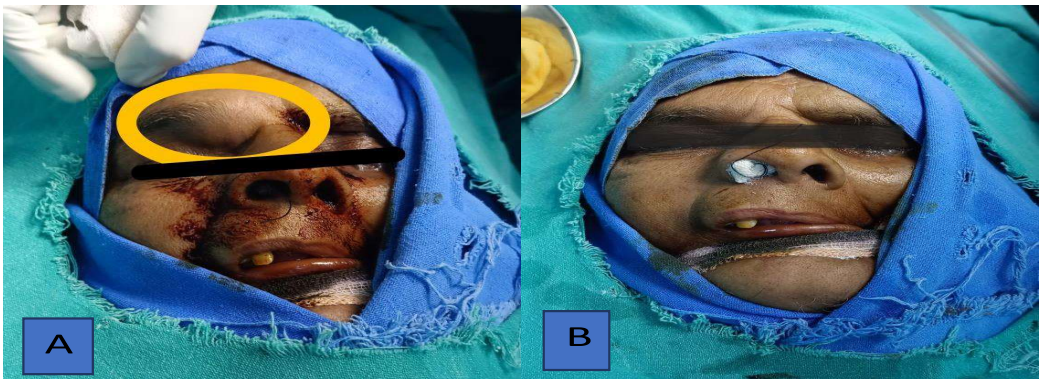

Figure 2A: Shows the preoperative picture showing soft swelling in right frontal area.
Figure 2B shows the post operative picture after removal of the mucocele

DISCUSSION

Mucoceles are defined as collection of mucus enclosed in a sac like structure resulting from an obstruction to the sinus ostium which may lead to expansion of the sinus by resorption of bony walls.[1] These are benign, slow-growing lesions that most commonly occur in the frontal sinus or ethmoidal group of sinuses.[2] Due to chronic infection the sac may be filled with pus and it is known as chronic pyocoele.

Mucoceles usually arise due to sinus ostium obstruction, which can occur due to inflammation, infection, fibrosis, surgery, trauma or blockage by tumors such as osteomas.[3]

Depending upon the anatomical site the clinical presentation of mucocelevaries. Onset of symptoms is usually insidious. Patients having frontoethmoidal mucoceles may present with frontal headache, swelling, facial asymmetryas well as ophthalmological manifestations including impaired visual acuity, proptosis and reduced ocular mobility.[4] Clinical presentation may vary from being asymptomatic to incapacitating headache and visual disturbance.[5] Proptosis and diplopia are the most common complaints. On physical examination there can be swelling, periorbital tenderness, chemosis, restriction of extraocular movements and decreased visual acquity.[6] Intracranial extension can occur due to erosion of the posterior wall of the frontal sinus which may lead to meningitis or CSF fistula.[7] The posterior sinus wall is prone to erosion as it is inherently thin. The tendency for intracranial extension is seen more in the presence of infection. The diagnosis of a mucocele is based on the proper history, physical examination, and radiological findings.

Basically there are three criteria for diagnosis of a mucocoele on CT SCAN.[8] Homogeneous isodense mass, having clearly defined margins and presence of patchy osteolysis around the mass. Another indicative finding is erosion of the sinus wall with marginal sclerosis.[9]

The treatment is mainly surgical. Main aim is to drain the mucocele and ventilate the involved sinus along with removal of mucocele with minimal morbidity and also prevention of recurrence.

Surgical approaches are based on the size, site, location and extent of the mucocele. In presence of infection, first we should give antibiotic treatment. Earlier, surgical management for frontoethmoidal mucoceles involved an external approach (Lynch-Howarth frontoethmoidectomy) or osteoplastic flaps with obliteration of sinus cavity.[10] Presently, endoscopic drainage is the treatment of choice for frontal mucoceles as preservation of the frontal sinus mucosa and maintenance of a patent frontal recess result in a better clinical outcome.[11] Endoscopic sinus surgery is minimally invasive, it preserves sinus architecture and leaves no facial scarring.[12]

Competing interest statement by all the Authors: The authors declare that they have no competing interest.

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