

A Rare Frontal Sinus Tumor Mimicing A Mucocele

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Abstract

Mucoceles are chronic, expanding, mucosa lined pathology of the paranasal sinuses. Frontal mucocele usually presents with the visual complaints such as diplopia, diminution of vision, visual field defect, ptosis, orbital swelling, retro-orbital pain, displacement of eye globe, and proptosis. Very rarely, it can be present as a subcutaneous swelling. This case report presents a 62-year-old male patient presenting with intermittent headache and blood stained nasal discharge of 6months duration. Surgical excision was done and the sample was sent for histopathological examination which confirmed the diagnosis of a poorly differentiated tumour. Postoperatively, the patient was asymptomatic and was referred to the department of oncology for further management. A subcutaneous soft-tissue mass may be the presenting complaint of a frontal mucocele. Careful examination of the surrounding skin may suggest the diagnosis of sinus-related disease and thus direct appropriate investigations and treatment measures.

Keywords: Frontal sinus; intracranial extension; mucocele; orbital extension; and subcutaneous mass.

Introduction

Mucoceles are slowly expanding mucus-containing benign cystic lesions lined with pseudo-stratified respiratory epithelial lining, which usually develops after chronic obstruction of the ostia of paranasal sinuses. Mucoceles usually occur in the fronto-ethmoidal region, possibly because of the complexity of this region's anatomy and drainage. They may expand and exert pressure on the bony boundaries invading nearby the vital structures such as the skull base and orbit, causing intracranial and/or orbital complications.

Patient Information

A 62-year-old male patient came to our outpatient department with swelling on the Left side of the forehead and associated headache of 6 months duration. The swelling was insidious, developed as a small nodule which progressively increased to the present size and has remained unchanged since past 6 months. There is no h/o chronic nasal obstruction, diplopia or loss of smell. The patient has not reported any episode of seizures or neurologic symptoms. There is no h/o trauma, chronic symptomatic sinusitis, or previous ENT surgery. The patient is diabetic under oral hypo-glycemic agents with no

other co-morbidities. Patient had no significant personal or family history.

Clinical Findings

Patient came with complaints of swelling over the left side of the forehead since 6 months duration. On inspection, the swelling was 2x2 cm over the left supraorbital involving the adjoining forehead region that was oval in shape, non-pulsatile, no scars, ulceration or discharging sinus. On palpation the swelling was single, 3x2cm, firm, non tender swelling and free from the overlying skin. Physical examination of the patient on admission revealed no abnormalities. On neurological examination, his visual acuity was normal in both eyes. The eyeball movements were restricted in upward and medial gaze. He also had mild conjunctival chemosis in the left eye. The rest of the neurological examination was within the normal limits. Hematological and biochemical parameters were normal.

Timeline

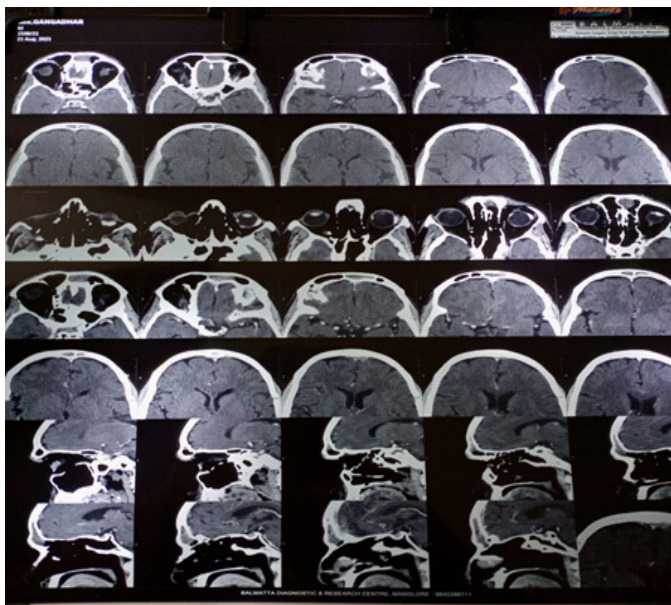
Patient was followed up for a period of 1 year post operatively.

Diagnostic Assessment

Contrast-enhanced computed tomography (CT) scan of the

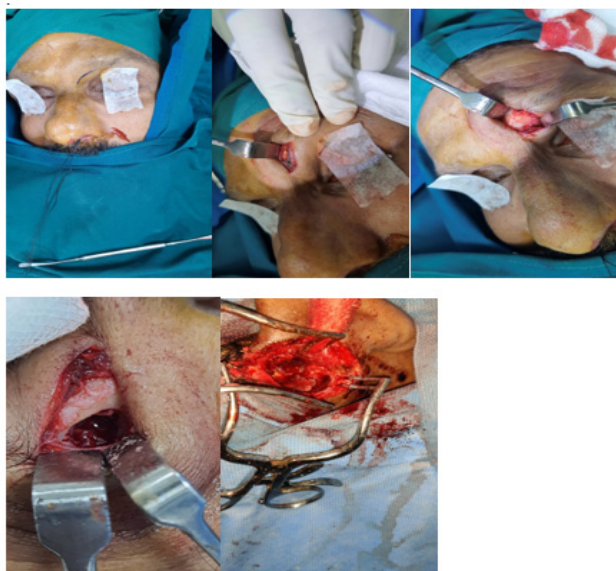
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OMC revealed a heterogeneously enhancing soft tissue density lesion approximately measuring 0.7 x 2.7 x 2.8cm (AP X TR X CC) is noted in the left frontal sinus. The lesion is causing thinning and focal erosion of posterior bony wall of the frontal sinus. Subtle intra cranial extension of the lesion is noted with maximum thickness measuring 5mm in frontal region.



Therapeutic Intervention

Surgery was planned. Forehead eyebrow incision was used, and the mucocele was completely excised along with the removal of the inflamed thickened mucosa of the ethmoid sinuses and sent for HPE. HPE was reported as POORLY DIFFERENTIATED TUMOR. The morphology and immune histochemistry features are consistent with sinonasal undifferentiated carcinoma. The postoperative period was uneventful, and the patient was discharged with good cosmetic results and was referred to the department of oncology for further management, where he was treated with chemotherapy. Patient was followed up on the 2nd,4th and 6th month postoperatively.



Discussion

The sites of occurrence of mucoceles are the maxillary sinus, frontal sinus, anterior ethmoidal sinus, and rarely the posterior ethmoidal sinus and the sphenoidal sinus. Frontal sinuses are the most common site for mucocoeles, and these can be frontoethmoidal or frontal only, but bilateral frontal involvement is rare. The pathophysiology of frontoethmoid mucoceles has been lightened in experimental studies and by clinical observations that the trapped mucosa in the frontal and ethmoidal sinuses after obstruction of sinus ostia becomes inflamed leading to the accumulation of mucus.

Earlier mucocele was thought of as a retention cyst due to the cystic degeneration of seromucinous gland. It is now proposed that the infection of frontal sinus following the obstruction of frontal recess leads to the stimulation of lymphocytes and monocytes leading to the production of cytokines by the lining fibroblasts which in turn promote the bone reabsorption and mucocele expansion. Since mucocele expands in the direction of least resistance, frontal mucocele tends to erode the thin bone of the superior orbital wall extending into the orbit and displacing the globe inferiorly.

The etiology of mucocoeles is multifactorial, which involves inflammation, allergy, trauma, anatomic abnormality, previous surgery, fibrous dysplasia, osteoma, or ossifying fibroma. Nasal polyposis is associated with the chronic inflammation and causes obstruction, and hence, is related to the occurrence of spontaneous or nonsurgical-related mucocoeles. They may occur at any age, but most of them are seen between the fourth and seventh decades. They are seen similarly in both sexes. Gradual distension, thinning, and erosion of the bony wall of the sinus are caused by the progressive accumulation of mucoid material. The mucocele can extend into the orbit or intracranial compartment by eroding the bony limits and producing bony defects. Frontoethmoid mucoceles cause outward and downward displacement of the globe and are often associated with a palpable mass in the superonasal and medial canthal region. The expanding mass lesion may cause proptosis, restriction of eye movements, diplopia, visual loss, retro-orbital pain, or a headache.

Destruction of the posterior frontal sinus results in a direct connection between the mucocele and the epidural space. Although, the dura can resist against the pressure exerted by the mucocele and a possible infection, intra-dural growth or a ruptured intracranial mucocele can present with meningitis, meningoencephalitis, brain abscess, seizures, or cerebrospinal fluid fistula. The mucoceles of the frontal sinus may disrupt the medial canthal ligament and the orbital roof in which the surgical interventions should include the reconstruction of these anatomic structures. The diagnosis of mucocele is based on a clinical investigation conducted with the aid of CT and magnetic resonance (MR) imaging. CT is used in determining the regional anatomy and extent of the lesion, specifically the intracranial extension and the bony erosion. MR imaging is useful in differentiating mucocoeles from neoplasms via the contrast enhancement. Management of mucocoeles is done mainly by surgery, which ranges from functional endoscopic

sinus surgery (FESS) to craniotomy, and craniofacial exposure, with or without the obliteration of the sinus. The main strike in our study is the early diagnosis and early management of the patient. The pit fall of this study – as it was a less extensive disease, the diagnosis towards malignancy was missed.

Patient Perspective: Satisfactory.

Informed Consent: Informed Consent Was Taken Prior Ct Scan And Prior To Operating The Patient.

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