Case Report

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Mucocele of Maxillary Sinus with an Idiopathic Cause: A Frequently Misdiagnosed Entity

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Abstract

Maxillary sinus mucocele is an uncommon benign lesion that develops due to retained secretions and presents as an expansile cystic lesion. Patient presents with non-specific symptoms and are mostly due to pressure effects on the orbit or palate causing facial deformity. Etiology is not well established, and it is proposed that they ensue due to obstruction of the ostium by inflammation or previous procedures. De novo origins result in unwanted investigations and delayed diagnosis and treatment. Endoscopic marsupialization of the mucocele, middle meatal antrostomy with maxillary sinus clearance or inferior meatal antrostomy are the surgeries of choice. Here is a case of left maxillary mucocele which had no identifiable cause, and is reported due to its rare incidence and delayed management.

Keywords: Mucocele; Maxillary sinus; Middle meatal antrostomy.

Introduction

Mucocele of the paranasal sinuses are epithelium lined, mucus containing sac that can fill the sinus completely and has the capacity of expansion. The fronto-ethmoid sinuses (89%) are the most commonly affected and maxillary sinus (1%) the least [1]. They arise as a consequence to obstruction of the ostium andin ammation due to previous surgery or trauma to the paranasal sinuses [1,2]. Origin of mucoceles are not defined in about 33% of the cases [2].

Here, we report a case of left maxillary sinus mucocele with no identifiabe cause, which lead to its initial misdiagnosis, and thus, delayed management.

Case report

A 50-year-old diabetic female presented to our ENT OPD with a 7-month history of left-sided facial swelling which was slow growing with dull aching pain not relieved by medication.

There was also left sided nasal obstruction and discharge. Patient also had associated symptoms including history of left sided epiphora, hyposmia, hyponasality in voice, mouth breathing and snoring. No history of trauma. Local examination revealed a left-sided, firm, non tender swelling in the left nasal cavity arising from the lateral wall of the nose anteriorly, pushing the inferior turbinate medially, extending up to vestibule.

A left sided palatal bulge was present from the left upper lateral incisor anteriorly to the second molar posteriorly [Fig. 1]. She was referred to us after being conservatively treated initially by a local doctor with oral antibiotics and anti-inflammatory drugs. Diagnostic nasal endoscopy showed a blocked osteomeatal complex.

The lateral wall of left nasal cavity was bulging medially towards the septum, completely occluding

the left nasal passage and eroding the floor of the left nasal cavity. Rest of the otolaryngological, ophthalmological, dental examinations, and general physical examination were normal. Contrast-enhanced computed tomography (CECT) of the nose and paranasal sinuses showed evidence of a large expansile homogenous mass, without any peripheral enhancement, in the left maxillary sinus, pushing its medial wall medially and obstructing the left nasal cavity to extent upto the septum with compression of inferior and middle turbinate [Fig. 2].

A trans-nasal endoscopic guided aspiration was performed at the most pronounced bulged part of the swelling and fluid analysis of the content showed low cellularity with focal collections of acute and chronic inflammatory cells, cystic macrophages, but no evidence of neoplastic pathology [Fig. 3]. Based on clinical and endoscopic features and radiological imaging, a provisional diagnosis of a cystic lesion of left maxillary sinus was made and planned for endoscopic marsupialization of the left maxillary sinus under local anesthesia. Left uncinectomy was done and a liberal middle meatal antrostomy performed.

Mucoid content of the maxillary sinus suctioned, and marsupialisation of the thin-walled cyst was done. And to alleviate the drainage, left inferior meatal antrostomy was also done. Complete regression of the nasal obstruction within seven days and partial regression of the palatal bulge noted in ten days [Fig. 4]. Histopathology of the cyst wall established our diagnosis of maxillary sinus mucocele eliciting an exudate of neutrophils and macrophages, enmeshed in fibrin, with foci of hemorrhage and the cyst wall lined by pseudostratied columnar epithelium. The patient did not show any symptoms during the follow up period of six months and is presently asymptomatic.

Discussion

Mucoceles result from an occlusion of the sinus ostia and obstruction to drainage, with resultant redundation of mucus within the sinus.

Fig. 1.A: Swelling in the left nasal cavity arising from lateral wall touching the septum medially extending up to the vestibule.

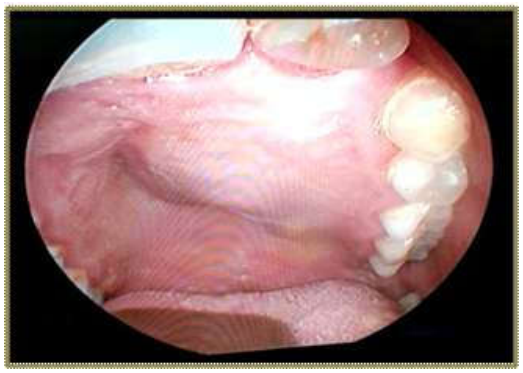

Fig. 1.B: Left sided palatal bulge.

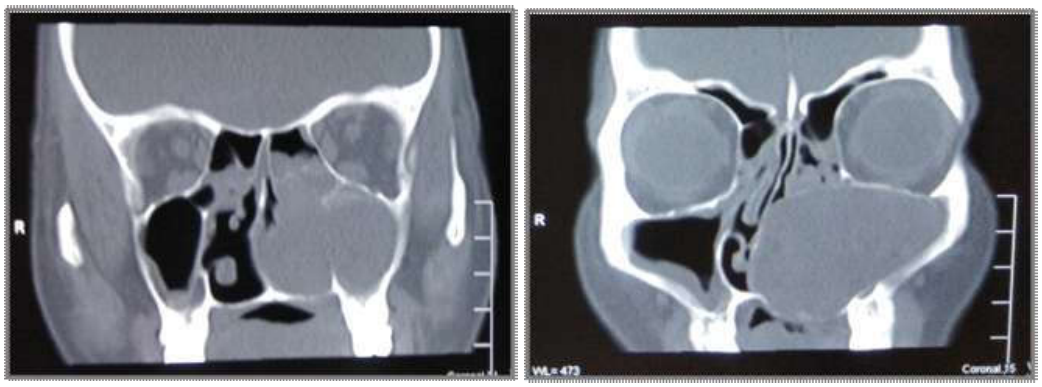

Fig. 2: Large well circumscribed soft tissue density mass lesion with thin peripheral calcification involving left maxillary sinus, left nasal cavity and extending to the palatal region. Widening of left nasal cavity, thinning of postero-lateral and medial walls of maxillary sinus with mild erosion of palate seen.

Fig. 3: Serous fluid aspirated from the mass. On standing, coagulum is formed on the surface of the fluid suggestive of mucocele.

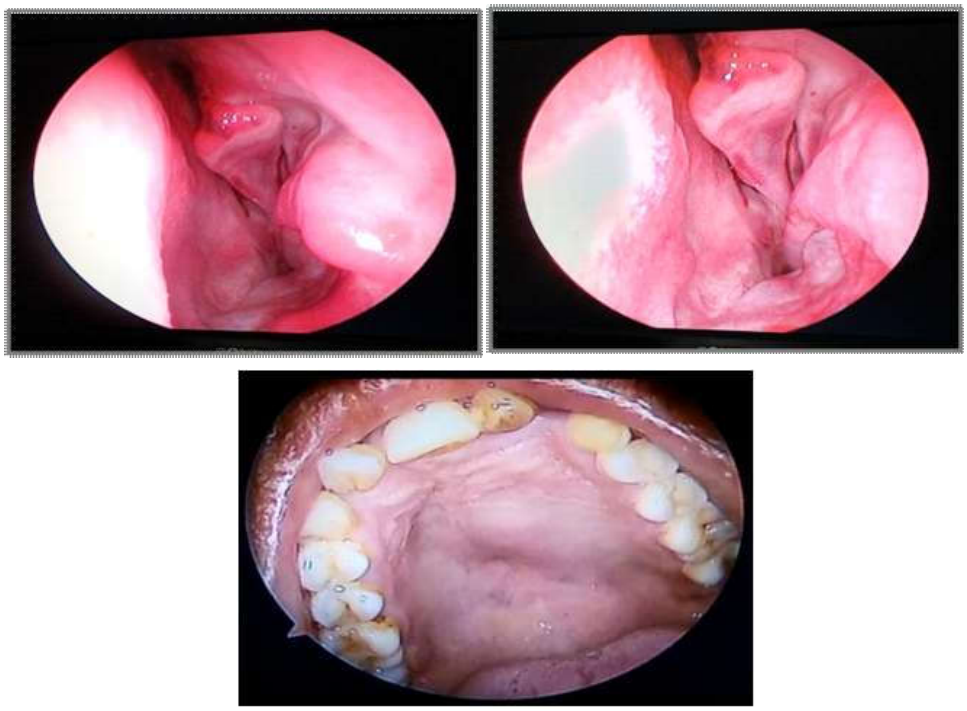

Fig. 4: Post operative pictures showing regression of the nasal mass. Inferior surface of left middle turbinate seen to be compressed due to pressure effect and palate showing partial regression of the bulge.

Continual accumulation results in its expansion owing to the pressure effect. Maxillary sinus mucoceles are exceptional, with a worldwide incidence of 3–10%. They are usually sterile and painless. Pain indicates infection [1-3]. However, our patient had sought an early medical opinion because of pain.

Blockage of the sinus ostium has been postulated as the primary etiologic factor. This may be due to a mass lesion, inflammation and fibrosis, osteoma, fibrous dysplasia, Paget's disease, malignancy, trauma, or previous surgery [1-3]. In this case, precipitating factor for the development of mucocele could not be described. Expansion is seen due to the direct effect of positive pressure within the mucocele.

Bone resorption factors such as prostaglandins, interleukin-1, and tumor necrosis factor have been identified to be produced at the interface between the mucocele and bone. These may cause intraorbital or intracranial extension [4-6]. Computed tomography is the desired imaging modality where mucocele appears as an expanded, airless sinus filled with homogeneous material.

The walls of the sinus may be either normal or remodeled, with thickening, thinning and erosion to various degrees, often within the affected sinus. The presence of air present around the upper surface of the retention cyst distinguishes it from a mucocele [3-7]. Hence, a good radiological examination with a high degree of suspicion aid in early identification of this condition.

Endonasal endoscopic approach is the desired treatment of paranasal sinus mucoceles with the advantage of a minimally invasive surgery [2-5]. Martel et al. analyzed 58 patients of paranasal sinus mucoceles and found that recurrence rate was low in patients who underwent endoscopic treatment (4.8%) than those treated by an external approach (28.5%) [8].

To facilitate the normal function of secretion and drainage, restore normal mucocillary clearance, and to avoid external scar, infraorbital paraesthesia, an endoscopy assisted marsupialization was performed.

Conclusion

Thus, we believe that, for evaluation of any sinonasal mass, a detailed clinical and radiological assessment with endoscopic correlation is mandatory to arrive at an early diagnosis and not suspect malignancy in the first look.

This shall preclude the need for redundant invasive procedures and protracted treatment time, as happened in the reported case.

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