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MAXILLARY SINUS MUCOPYOCELE WITH ORBITAL EXTENSION: A CASE REPORT

Otolaryngology

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ABSTRACT

A mucocele is an epithelial-lined, mucus-containing sac that can fill the sinus completely and expand gradually. When the mucocele content becomes infected, the lesion is termed mucopyocele. A 38 years old man presented to our tertiary center with one month history of swelling right cheek associated with decreased vision. Computed tomography images revealed a well defined soft tissue mass in right maxillary sinus with distortion of osteomeatal complex extending to extraconal infraorbital region. MRI suggestive of mucocele with secondary infection and hypoplastic maxillary sinus. Under general anesthesia, surgical decompression of the maxillary mucopyocele through an endoscopic approach was done. Postoperatively his visual acuity returned to normal and postoperative period was uneventful. The diagnosis of mucocele is usually made by CT imaging of the paranasal sinuses. Endoscopic sinus surgery is an effective treatment modality for maxillary sinus mucocele with favorable long-term outcome.

KEYWORDS

Mucus-containing, Mucopyocele, Osteomeatal Extraconal, Infraorbital.

INTRODUCTION

A mucocele is an epithelial-lined, mucus-containing sac that can fill the sinus completely and expand gradually.[1] When content becomes infected, the lesion is termed as mucopyocele.[2] The fronto-ethmoidal region is the most commonly affected anatomical area with the highest prevalence followed by sphenoid and maxillary sinuses.[3] This case report aimed to draw attention to the maxillary sinus mucopyocele with orbital extension and its management.

CASE REPORT

A 38 years old man presented to our tertiary center with one month history of swelling right cheek associated with pain, diplopia and decreased vision. The patient had no significant medical or family history. Anterior rhinoscopy showed deviation of the nasal septum toward right side. On eye examination, restriction of depression and adduction eye movements. Visual acuity was 6/24 in the right eye and 6/6 in the left eye. Ocular optical coherence tomography (OCT) showed normal images of retina and anterior chamber.

Computed tomography images revealed a well defined soft tissue mass of size 3.7×3.6 cm in right maxillary sinus with distortion of osteometal complex extending to extraconal infraorbital region, superiorly abutting the globe and causing compression of inferior rectus muscle with erosion of the floor of orbit and displacing the globe superiorly, laterally causing expansion of the zygomatic bone and extension to infraorbital fossa, anteriorly reaching the premaxillary region with peripheral rim enhancement with possibility of mucocele, nerve sheath tumour , haemangiopericytoma and lymphoma. (Figure 1)

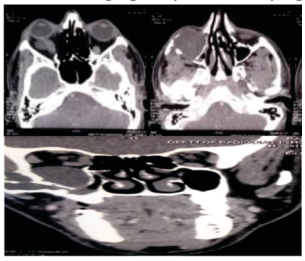

Figure 1: CT scan showing soft tissue mass in right maxillary sinus with extension to extraconal infra orbital region, abutting the globe and causing compression of inferior rectus muscle with erosion of the floor of orbit, laterally causing expansion of the zygomatic bone.

On MRI expansile fluid intensity collection of size 3×3×3.6 cm in the right maxillary zygomatic complex with extension to soft tissue anteriorly and orbit superiorly with hypoplastic right maxillary sinus, suggestive of mucocele with secondary infection and hypoplastic maxillary sinus. (Figure 2)

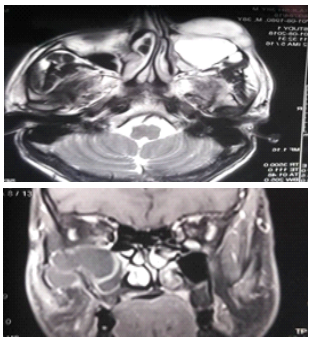

Figure 2: MRI showing fluid intensity collection in the right maxillary zygomatic complex with extension to soft tissue anteriorly and orbit superiorly with hypoplastic right maxillary sinus

Under general anesthesia, surgical decompression of the maxillary mucopyocele through endoscopic approach was done and 40ml of thick pus was expressed. This intervention induced orbital decompression. The mucosa appeared healthy and histology confirmed no evidence of malignancy. Postoperatively his right visual acuity returned to normal with a VA of 6/6 bilaterally. Patient had an uneventful postoperative period.

DISCUSSION

Mucocoeles are common, expansile cyst-like lesions affecting the paranasal sinuses. The most common paranasal sinuses affected are the

frontal and ethmoidal sinuses (60% and 30%, resp.), followed by the more rarely affected maxillary sinus (which has a documented incidence of between 3% - 10%) and the sphenoid sinus. They grow gradually, expand in size, and rarely produce bony destruction of the sinus walls,[1,10] leading to orbital and ocular involvement. We report such a rare case.

The most common causes of mucoceles are chronic infection, allergic sinonasal disease, trauma, previous surgery and in some cases cause remains uncertain. They are mucoid filled masses and develop after obstruction of the sinus ostium and drainage pattern, which is confirmed by the high incidence of mucoceles in the frontal sinus caused by the variations of the nasofrontal duct.[5,6,7]

Mucoceles grow slowly. Lund and Milroy proposed that the obstruction to sinus outflow in combination with superimposed infection caused the release of cytokines from lymphocytes and monocytes. The cytokine release would stimulate fibroblasts to secrete prostaglandins and collagenases, which in turn could stimulate bone resorption leading to expansion of the mucocele.[3]

The diagnosis of mucocoele is made on the basis of symptoms, imaging and surgical exploration and histological confirmation. The most consistent symptom is dull maxillary facial pain. Other symptoms include swelling and/or numbness of the cheek, poorly localized pain or tenderness, nasal obstruction, visual impairment, diplopia, and dental problems.[11]

High-resolution CT scan will show homogenous lesions, which are isodense with brain and no contrast enhancement, unless infected. There are clear cut margins of bone erosions occurring in the sinus walls. In malignancy, the mass is likely to be irregular in shape, with erosion and destruction of sinus walls. In sinusitis or retention cyst, there is no bone destruction.[11]

The management of maxillary sinus mucoceles is surgical. Historically, the recommended treatment is complete excision through an open approach that entails Caldwell-Luc sinusectomy, inferior nasoantral window and removal of the mucocele lining. In cases in which significant extension of the mucocele into the facial soft tissues is found, an open approach seems warranted. In cases in which the mucocele is limited to the sinus or extends into the orbit or ethmoid sinus, endoscopic surgery to evacuate the mucocele contents and aerate/drain the mucocele cavity through a wide middle meatal antrostomy is a reliable intervention modality.[4,5,8,9]

CONCLUSION

There are various theories regarding origin and development of maxillary sinus mucoceles e.g. chronic infection, trauma, allergic sinonasal disease and previous surgery. The diagnosis of mucocele is usually made by CT imaging of the paranasal sinuses. Endoscopic sinus surgery is an effective treatment modality for maxillary sinus mucocele with favorable long-term outcome.

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