

## Idiopathic Maxillary Sinus Mucocoele

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Mucocoele of the maxillary sinus is a relatively rare location among all the paranasal sinus mucocoeles. Maxillary sinus mucocoeles usually grow gradually and can erode surrounding structures, which result in associated symptoms. The most common presenting symptoms include dull maxillary facial pain, swelling of the cheek, and nasal obstruction. It is rare to cause orbital and ocular involvement. Here we present a case of a 72-year-old man who sustained swelling around the right cheek and lower eyelid region associated with epiphora and blepharoptosis. Computed tomographic scan of the paranasal sinus revealed a large maxillary mucocoele with bony erosion and compression of the right globe. The symptoms of cheek swelling and blepharoptosis resolved immediately after endoscopic marsupialization was performed. The case report demonstrates that maxillary sinus mucocoeles may invade the orbit secretly and should be considered in the differential diagnosis in patients presented with eye problems. Early diagnosis and timely surgical intervention are important to reduce inevitable complications.

Key words: mucocoele, maxillary sinus, cheek swelling, blepharoptosis

### INTRODUCTION

Mucocoeles of the paranasal sinuses are cystic lesions which contain mucoid secretion and epithelial debris with pseudostratified columnar epithelium lining. The most cases occur in the frontal and ethmoid sinuses. Maxillary sinus mucocoeles are relatively rare. They grow and increase in size gradually, leading to erode the sinus wall and encroach on the surrounding tissues with diverse problems including facial pain and swelling, infra-orbital anaesthesia, nasal obstruction and rarely global compression. Here we present such a rare case.

### CASE REPORT

A 72-year-old man presented with a slow-growing mass over the right cheek of eight months' duration. The



Fig. 1 A view of patient with right cheek swelling and ptosis of his right eye.

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symptoms of which had worsened rapidly over the past one month, causing epiphora. The patient denied eye pain, visual change, nasal discharge or headache. There was no history of previous rhinological surgery or facial trauma. On physical examination, an elastic swelling in the right maxilla and lower eyelid region was found, which was causing facial asymmetry and blepharoptosis of the right upper eyelid (Figure 1). There were no gaze

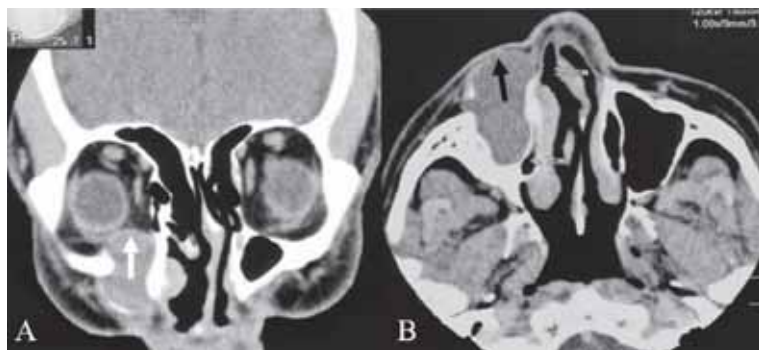


Fig. 2 Coronal (A) and Axial (B) post-contrast CT scan showing complete opacification of right maxillary sinus with an expanding mass invading the orbital floor and compressing the globe (white arrow). The mass also breaches the anterior wall of the sinus causing cheek swelling (black arrow).

palsies or visual acuity deficits. Cutaneous sensation was depressed over the distribution of the second branch of the right trigeminal nerve. Anterior rhinoscopy revealed a left septal deflection with minimal nasal obstruction. There was no mucopus or nasal polyp noted.

A computed tomographic (CT) scan of the paranasal sinus showed opacification of the right maxillary sinus with a large cystic lesion that eroded the orbital floor and compressed the globe (Figure 2A). Furthermore, the lesion had also breached the anterior wall of the sinus, causing cheek swelling (Figure 2B). Endoscopic middle and inferior meatal antrostomies with marsupialization were performed, and the yellowish fluid content was evacuated without complications. The diagnosis of a mucocoele was confirmed histologically. The post-operative course was uneventful. The patient was reviewed 3 months later, showing marked improvement in symptoms, and an examination in the out-patients department showed no evidence of recurrence.

## DISCUSSION

Paranasal sinus mucocoeles are benign and expandable cyst-like lesions filled with mucus and lined by the mucoperiosteum of the involved sinus. Frontal sinus is the mostly involved sinus, followed by the ethmoid and sphenoid sinuses. The incidence in the maxillary sinus is less common, accounting for 10% or fewer of all reported cases in the United States and Europe. However, they are more common in Japan, where it is usually reported following Caldwell-Luc surgical procedures and presumed to form as a result of entrapped sinus mucosa.<sup>1,2</sup> Mucocoeles develop when the drainage of normal sinus secretion

is obstructed, resulting in the accumulation of fluid. As the sinus mucosa continues to secrete mucus in the mucocoele, it expands gradually, eventually resulting in thinning and destruction of the bony wall.<sup>1,2</sup> There are several theories about the origin and development of maxillary sinus mucocoeles, including chronic infection, allergic sinonasal diseases, trauma and previous surgery. In some cases, however, the cause remains unclear.<sup>2,3</sup>

The symptoms of maxillary mucocoeles are related to their expansion and subsequent pressure on and obstruction of adjacent structures. The most common presenting symptom is facial swelling with infra-orbital anaesthesia. Medial extension of the maxillary mucocoele into the nasal cavity can push the inferior turbinate and cause nasal obstruction. Inferior expansion into the palatal and alveolar bone can cause palatal swelling and a looseness of teeth. When extending to the orbit, it may cause displacement of the eye, proptosis, ptosis, double vision and epiphora.<sup>3</sup> CT scans of mucocoeles will present homogenous lesions, which are isodense with the brain and show no contrast enhancement unless they are infected.<sup>2</sup> Without bony erosion, the mucocoeles must be differentiated from chronic sinusitis, retention cysts, and extensive polypoid. Once bone destruction has occurred, differential diagnosis should include malignant conditions, such as adenoid cystic carcinoma, squamous cell carcinoma, undifferentiated carcinoma, plasmacytoma, rhabdomyosarcoma, lymphoma, schwannoma, and tumors of dental origin, and a biopsy is required to confirm the diagnosis.<sup>2,4,5</sup>

The management of maxillary sinus mucocoeles is surgery. Traditionally, the recommended treatment is Caldwell-Luc technique with total removal of the sinonasal mucous membrane and inferior antrostomy which ensured ventilation and drainage of the sinus. More recently, the technique was almost completely replaced by endoscopic marsupialization which is effective with very low recurrence rate at or close to 0% and minimally invasive with a shorter postoperative recovery and less morbidity as compared with complete excision of the mucocoele by an open approach.<sup>3,6,7</sup>

This case report highlights that maxillary sinus mucocoeles grow slowly and may encroach on the inferior orbit stealthily with various ophthalmic manifestations. When patients present with low lid swelling, double vision, epiphora, proptosis or blepharoptosis, sinus diseases should be considered in the differential diagnosis. Appro-

priate and prompt treatment is able to lower morbidity.

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