

CASE REPORT**MAXILLARY MUCOCOELE A RARE ENTITY****Authors:** Abhay Anand (1), Rajeev Pachauri (2)**Authors Affiliations:** (1) Dr. Abhay Anand, ENT Specialist, ESIC Sahibabad. (2) Dr. Rajeev Pachauri; Ritika ENT Centre, 01, IInd Floor, Shanti Madhuban Plaza, Delhi Gate, Agra**ABSTRACT**

Mucoceles are accumulations of trapped mucus, forming cystic expansile lesions. Maxillary sinus mucoceles are rare amongst paranasal sinus mucoceles, usually being a late sequel of Caldwell-Luc surgery. We present a case of a maxillary sinus mucocele due to a molar root canal treatment in a middle aged patient, reported to highlight its unusual etiology.

Keywords: Mucocele**INTRODUCTION**

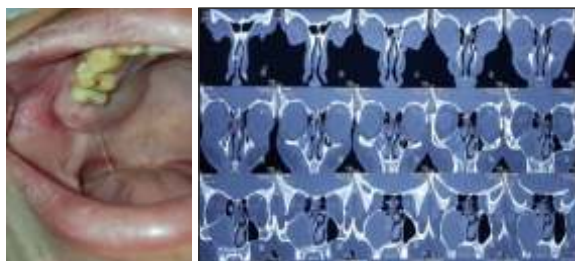
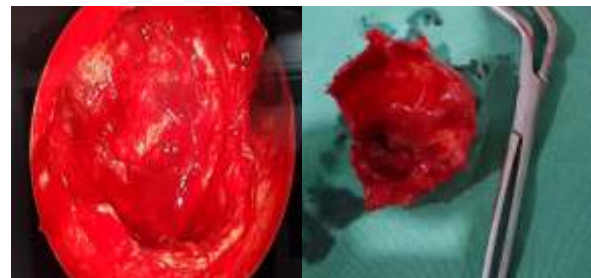
Mucoceles are chronic, benign, mucus-filled cystic lesions in the paranasal sinuses caused by obstruction of sinus ostia. Expansion from pressure and inflammation leads to remodeling and erosion of bone, changing the bony architecture [1]. The etiology is varied; the case presented here is a sequel of root canal treatment of molar tooth.

CASE REPORT

A 28-year-old female patient reported in the ENT OPD, with a history of acute pain and palatal bulge (Fig No 1), initially painful swelling of right cheek for 5 months and right sided nasal obstruction for 3 months. It was preceded by a procedure of her right molar tooth and fever for 15 days. She was treated with antibiotics and anti-inflammatory drugs, following which pain subsided, but the swelling persisted. The swelling was diffuse, with obliteration

of the nasolabial sulcus, firm, mildly tender, extending deep to the right ala and nasal cavity causing a smooth bulge. It also extended into the right upper gingivo-buccal and gingivo-labial sulcus, from first pre molar to the third molar tooth (Fig1)

Nasal endoscope couldn't be passed on the affected side. Coronal CT (Fig. 2) showed an expansile cystic lesion involving the entire right maxillary sinus, its medial wall touching the nasal septum, posterior end of the swelling extending into the nasopharynx up to the pterygoid plate. The entire sinus was filled with a fluid shadow without area of air shadow and scattered areas of demineralization of the sinus walls. The swelling was provisionally diagnosed as a dental cyst/mucocele of maxillary sinus. Under general anaesthesia, transnasal endoscopically complete removal of the mucocele wall and without damage to palatal floor was done. Most of the sinus walls were thick, fibrotic and expansile making it floppy and redundant after drainage of the tense collection (Fig 3). Histopathology of the maxillary sinus walls showed a cystic area lined by respiratory epithelium. The cyst wall consisted of fibrous connective tissue and osteoid connective tissue containing an intense chronic inflammatory infiltrate mainly lymphocytes and plasma cells. No lining epithelium or granulation tissue was seen. HE stain did not reveal any organism. The histological impression was thus of an abscess, possibly infected mucocele.

**Fig 1** Swelling in the oral cavity**Fig 2** Coronal section showing right mucocele**Fig 3** Intraoperative pic of maxillary sinus**Fig 4** Medial wall of mucocele after marsupialisation.

DISCUSSION

A mucocoele is a cyst developing from a sinus mucosa most commonly the frontal and ethmoidal sinuses. Maxillary sinus mucocoeles are exceptional, having been reported in only 3–10% of cases [2]. Mucocoeles are consequent to an obstruction of the sinus ostia and drainage pattern, with accumulation of mucus within the sinus cavity. Continual accumulation causes it to expand from the pressure. Although, mucocoeles are usually sterile, pain may indicate infection [1, 3]. In the reported case the contents were sterile and in our opinion it began as a pyocoele secondary to the dental infection as evidenced by the initial presence of pain in tooth as well as the swelling and then after conservative treatment, it turned into a mucocoele. The pus caused a desmoplastic reaction in the walls of the sinus and so the walls of the mucocoele in the patient were thick unlike the usually thinner walls of a mucocoele. Sinus walls may be remodelled or completely de-ossified and eroded. The factors involved in this process include cytokines released from lymphocytes and monocytes, due to sinus obstruction and superimposed infection. The cytokine release stimulates fibroblasts to secrete prostaglandins and collagenases, which in turn stimulate bone resorption leading to expansion of the mucocoele [4]. Primary ones are in fact mucus retention cysts while secondary ones are “true” mucocoeles. They are lined by pseudostratified columnar epithelium, occurring when the sinus ostium is obstructed [5]. Our patient had a “true” mucocoele secondary to the obstruction of the natural ostium of the maxillary sinus which had occurred due to the desmoplastic reaction on the sinus walls following a suppurative inflammation. The various known etiologies of maxillary sinus mucocoeles, include chronic infection, allergic sinonasal disease, trauma, previous surgery. However, in some cases cause remains uncertain [5, 6]. A Turkish report studying the clinical presentation of maxillary sinus mucocoeles in 14 cases found that 36% patients had a history of previous surgery leading to maxillary mucocoele formation, while in 64% cases no known pathology could be discerned [1]. A Japanese study found that the possible causes leading to simulating cases can be; unknown (39.3%), recurrent infection in the postoperative cavity (28.6%), dental origin (10.7%), atypical neuralgia (10.7%) and shortly after a

preceding sinus surgery (within 12 months, 10.7%) [7]. In our case, infection originating from treatment of a carious molar tooth was the apparent etiology. Busaba and Salman compared the bacteriology of maxillary sinus mucocoeles to chronic sinusitis and reported that the data do not support infection as the main origin of nontraumatic maxillary sinus mucocoele [6]. CT is the preferred imaging modality where the mucocoeles appears as an expanded, airless sinus filled with homogeneous material. The walls of the sinus may be either normal or remodelled, with thickening, thinning and erosion to various degrees, often within the same sinus. The distinction between a mucocoele and a mucous retention cyst can be made by the presence of air outlining the upper surface of the retention cyst [8]. Mucocoeles may be treated by either radical surgery or conservative surgery. Radical surgery entails the complete extirpation of the mucus membrane with obliteration or cranialization of the sinus cavity. Conservative surgery involves marsupialization of the mucocoele with maintenance of adequate sinus drainage, to minimize risk of recurrence. This approach is based on the principle that the underlying disturbance in a mucocoele is one of blocked ostial drainage and not of a diseased mucous membrane and is now preferably done endoscopically. Marsupialization of the mucocoele with establishment of ostial drainage relieves the symptoms of the mucocoele and prevents re-accumulation of the mucus later [9]. We had, in our patient preferred marsupialization. Once adequate drainage is established, the recurrences are rare, which occur many years after the surgery.

CONCLUSION

Maxillary sinus mucocoeles are the rarest amongst paranasal sinus mucocoeles. Their etiology is varied, the commonest being post-surgical. Dental causes are unusual. A root canal treatment on a caries tooth is a rare precipitating cause. So a carious tooth can lead to a mucocoele if not treated carefully.

REFERENCES

1. Caylakli F, Yavuz H, Cagici AC, Ozluoglu LN. Endoscopic sinus surgery for maxillary sinus mucocoeles. <http://www.head-facemed.com/content/2/1/29>
2. Batsakis J, Sciubba J (1991) Pathology. In: Blitzer

A, Lawson W, Friedman WH (eds) Surgery of the paranasal sinuses, 2nd edn. W.B. Saunders, Philadelphia, pp 119–159

3. Serrano E, Klossek JM, Percodani J, Yardeni E, Dufour X (2004) Surgical management of paranasal sinus mucocoeles: a long-term study of 60 cases.

Otolaryngol Head Neck Surg 131(1):133–140

4. Lund VJ (1991) Fronto-ethmoidal mucocoeles: a histopathological analysis. J Laryngol Otol 105:921–923

5. Marks SC, Latoni JD, Mathog RH (1997) Mucocoeles of the maxillary sinus. Otolaryngol Head Neck Surg 117:18–21

6. Busaba NY, Salman SD (1999) Maxillary sinus mucocoeles: clinical presentation and long-term results of endoscopic surgical treatment. Laryngoscope 109:1446–1449

7. Iinuma T, Tanaka T, Kase Y, Ishio K, Kuriyama J, Hukuda M (1992) On the postoperative mucocoele of the maxillary sinus, its simulating cases. A clinical treatise. Nippon Jibiinkoka Gakkai 95(5):665–673

8. Som PM, Curtin HD (2003) Head and neck imaging, 4th edn, vol 1. Mosby, pp 204–230, 838–840

9. Har-El G, Balwally AN, Lucente FE (1997) Sinus mucocoeles: Is marsupialization enough? Otolaryngol Head Neck Surg 117:633–640

***Corresponding Author:**

Abhay Anand

Head of the Department

ESIC Sahibabad Department of ENT

Mob.: +91 98732 28787

E-mail: drabhayanand@gmail.com

How to cite the article

Anand A, Pachauri R - Maxillary Mucocoele A Rare Entity- UPJOHNS- Vol.-9, Issue-I, June 2021

DOI: <http://doi.org/10.36611/upjohns/volume9/Issue1/8>