

# A case of nasolabial cyst with CT and MRI features

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## Abstract

Nasolabial cyst is an uncommon non-odontogenic soft tissue cyst. It arises as an ectodermal developmental swelling in the lateral half of the floor of the nasal vestibule at the base of alae of the nose. Nasolabial cyst appears homogeneous round swelling anterior and inferior to the nasal aperture on computed tomography. It appears isointense in magnetic resonance imaging T1 and bright hyperintense in magnetic resonance imaging T2. This is a report discussing the computed tomography and magnetic resonance features of this uncommon nasolabial cyst in a 38 Saudi woman.

## INTRODUCTION

The nasolabial cyst is an uncommon non-odontogenic maxillofacial soft tissue swelling. Zukerkandl is the first who described nasolabial cyst in 1882<sup>(1)</sup>. It has been given many names such as Klestadt's cyst, nasoalveolar cyst, nasal vestibular cyst, mucoid cyst of the nose and nasal wing cyst<sup>(2)</sup>. It accounts for 0.7% of all jaw cysts and 2.5% of non odontogenic cysts<sup>(3)</sup>. Many authors think it is commoner than this percentage<sup>(4&5)</sup>. It is more common in females in the fifth decade of life. It is usually unilateral but presents bilateral in 11.2% of cases<sup>(6)</sup>.

There are three theories for its etiology. The first suggested that it is a retention cyst arising from inflamed mucous glands<sup>(7 & 8)</sup>. The second postulated by Klestadt is that it arises from entrapped embryonic epithelium between medial nasal, lateral nasal and maxillary processes<sup>(9)</sup>. The third theory raised by Bruggemann is that it arises from the remnants of the lower anterior part of the nasolacrimal duct<sup>(6)</sup>. The last one is the most accepted one.

Clinically, the patient presents for a swelling adjacent to the nose with fullness in the canine fossa and the nasal vestibule. The swelling causes obliteration of the nasolabial fold and elevation of the alae of the nose. It is a fluctuant swelling and is best palpated bimanually with one finger in the nasal floor and one finger in the labial sulcus<sup>(3)</sup>. It is lined by pseudostratified ciliated columnar epithelium with goblet cells.

Radiologically, dentists used to do routine intraoral periapical radiograph to differentiate it from other

odontogenic cysts arise in this area. Computed tomography (CT) shows a rounded homogenous subcutaneous tissue at the anterior part of nasal floor, anterior and inferior to the nasal aperture. Magnetic resonance imaging (MRI) shows the characteristics of fluid in T1 (low intense) and T2 (bright) views.

Its treatment is surgical excision through sublabial incision. There is no tendency for recurrence if it was removed completely. Malignant transformation is rare and only one case has been reported<sup>(10)</sup>.

This is a case of nasolabial cyst in a 38-year old Saudi female with its CT and MRI findings.

## CASE REPORT

A 38- year old Saudi female patient presented in April 2007 to the outpatient ENT clinic of Ghassan NP hospital in Khamis Mushayt, Saudi Arabia with history of painless left facial swelling of 3 years duration. The swelling has been gradually increasing in size. She had left nasal block of 3 months duration. No history of nasal discharge or bleeding. She had no history of trauma. She had history of tooth extraction in dental clinic one month ago for this swelling. The dentist thought, the extracted tooth was the cause of the swelling. On examination, there was a facial asymmetry due to bulging on the left side of the nose, obstructing the left anterior nostrils. The swelling was 2 X3 cm soft, fluctuating, non-tender, subcutaneous with obliteration of the nasolabial fold. Intra-oral examination, revealed bulging of the buccal alveolar sulcus by the swelling. The mucosa covering it showed a bluish tint. The tooth related to it was removed

by the dentist one month earlier, although the patient never complained from it. A provisional diagnosis of nasolabial cyst was made. To differentiate it from other cysts in this area such as dentigerous cyst and epidermoid cyst, we referred her for further imaging assessment. CT revealed rounded subcutaneous swelling on the left side of the nasal cavity, anterior and inferior to the nasal apertures (fig. 1&2). MRI revealed rounded hypointense soft tissue on T1 (fig.3) and hyperintense on T2 (fig.4&5).

**Figure 1**

Figure 1: Axial CT shows rounded subcutaneous soft tissue shadow anterior to the left nasal process of the maxilla obstructing the nasal cavity.



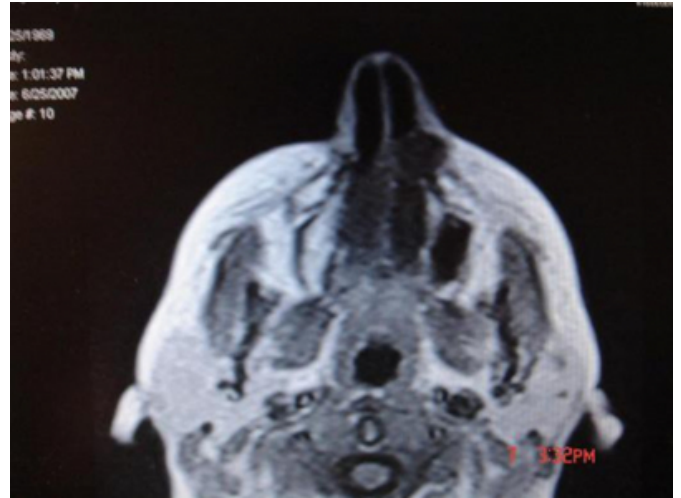
**Figure 2**

Figure 2: Coronal CT shows rounded soft tissue inferior to the nasal process of maxilla on the floor of left nasal cavity.



**Figure 3**

Figure 3: MRI T1 shows hypodense soft tissue anterior to the left maxilla obstructing the nasal cavity



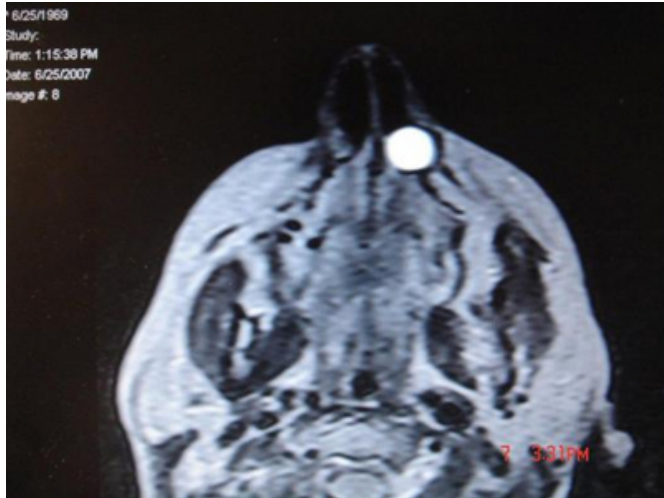
**Figure 4**

Figure 4: Coronal MRI T2 shows left bright rounded swelling on the floor of the nasal cavity



**Figure 5**

Figure 5: Axial MRI T2 shows bright rounded swelling anterior to the maxilla



We advised the patient for its removal but she refused any surgical interference. She thinks this swelling will go by time and by Doaa (begging Allah for its disappearance). Two months later I left the hospital and the area and moved for working in another area losing the follow up of this patient.

**DISCUSSION**

This report presents an uncommon case of nasolabial cyst in Saudi young female. This lesion occurs more commonly in Africo-Americans. Although it is developmental in origin, it usually does not manifest until adulthood. It also occurs usually in left side in most published papers (4). Bhaskar in 1969 reported seven cases of nasolabial cysts in 231 fissural cysts (3%), out of 3750 maxillary cysts (0.19%). They were mainly on the left side (11).

These cysts are non-odontogenic ectodermal epithelial cysts. They are classified into four types: (a) Median cysts: alveolar and palatine cysts; (b) Globulo-maxillary cysts; (c) Naso-alveolar cysts; (d) Naso-palatine cysts. The naso-alveolar cyst is the rarest type of them. Mechanical or inflammatory trauma could be an important factor in its development.

This swelling is painless except if secondary infection superimposed it. It is harmless and of very slow-growing nature. Only one case of the published cases eroded the maxillary alveolus and displaced the incisor teeth by its growth (3). The cyst may sometimes rupture spontaneously and drain into the nose or the nasal cavity. The patient usually asks for medical advice very late for cosmetic and

nasal obstruction reasons. Our case had this swelling for 3 years and presented when her face became asymmetric. This cyst should be differentiated clinically from other odontogenic, developmental and neoplastic cysts. The odontogenic cysts which should be excluded are (a) Follicular cysts: primordial and central and lateral dentigerous cysts; (b) Periodontal cysts: apical and lateral; (c) Residual cysts.

On CT, these cysts appear rounded subcutaneous homogenous swellings on the anterior part of the floor of the nasal cavity, anterior and inferior to the nasal aperture and closely attached to the anterior end of the inferior turbinate. On MRI, they appear rounded hypointense soft tissue on T1 (slight hyperintense to the CSF) and bright hyperintense on T2 (isointense to the CSF) on the anterior part of floor of the nasal cavity. Some authors showed sedimentation level of calcium in CT & MRI views of nasolabial cyst (milk of calcium appearance) (12).

They should be excised sublabially for cosmetic appearance. They are most firmly attached to the floor of the nose at the mucocutaneous junction. Care should be taken to prevent their rupture at this area to avoid its recurrence by leaving some cells.

Only 267 cases of nasolabial cysts have been published in the English literature up to February 2006 (13). On a paper published early 2003, MRI imaging can differentiate between different types of epithelial cysts (14). Odontogenic keratocysts give intermediate-high signal intensity (SI) in T1 and heterogeneous low-high signal intensity on T2. While in dentigerous cyst, radicular cyst and nasolabial cyst, it gives homogenous intermediate SI in T1 and homogenous high SI in T2. In nasopalatine duct cysts it gives specific homogenous high SI in T1. There was also a report of radiology of 2 cases of nasolabial cysts signifying the importance of MRI over other types of investigations in better diagnosis (15). One medical centre treated 26 cases in 7-year period (5) and another centre treated 8 cases in one year (4).

**CONCLUSION**

Nasolabial cyst is an uncommon cyst in the anterior part of the nasal floor. It occurs commonly in young females. Its clinical diagnosis is supported by its typical CT and MRI features. It gives isointense homogenous round swelling in CT and MRI T1 and bright hyperintense in MRI T2.

## **CORRESPONDENCE TO**

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