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Unusual predeliction of Nasolabial cyst - A rare case report

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Abstract*: Nasolabial cyst is a rare non-odontogenic, soft-tissue, developmental cysts occurring inferior to the nasal alar region. The cyst is derived from epithelial cells retained in the mesenchyme after fusion of the medial and lateral nasal processes and the maxillary prominence during fetal life or due to the persistence of epithelial remnants from the nasolacrimal duct extending between the lateral nasal process and the maxillary prominence. In this paper, we report a case of nasolabial cyst in a male which is a rare predilection and discuss about the clinical, radiological findings of a nasolabial cyst and consideration related to diagnosis.*
Keywords: *Nasolabial cyst, non-odontogenic cyst, developmental cyst, soft tissue cyst, Klestadt cyst.*

I. Introduction

Nasolabial cysts are very rare non-odontogenic soft-tissue lesions of nasal vestibule, fossa canina, and sublabial region.The incidence of the cyst is 0.7% in overall cysts[1]. Zuckerkandl described nasolabial cysts in 1882[2].

There is still much debate about the origin of nasolabial cysts. It is thought that its pathogenesis is related to a period between the 4th and 8th weeks of intra-uterine life; at this time the maxillary process of the second brachial arch forms the base of the nose and the nasal alae. Midline fusion between each maxillary lateral palatine process and the base of the septum forms the hard palate, at the same time initiating formation of the nasal fossa. Aberrant changes at any of these fusion points may give rise to a fissure cyst[3].

These cysts, unless infected, cause painless swelling around the nasal vestibule and upper lip, and infrequently lead to nasal stuffiness[1,4] . Typically, they appear as a swelling at canine fossa, upper lip, gingivolabial sulcus, nasal alae and nasal vestibule[1]. With increasing size, nasoalveolar cyst may impinge on the anteroinferior turbinate and push against the septum. Longstanding pressure may cause erosion of the nasal floor or pre-maxilla[5].

Nasolabial cyst is mostly unilateral and is more commonly located on left side and more frequently in women[1]. Bilaterality is reported in about 10% of patients[1,6].

II. Case Report

A 42 year old male, reported to the Department of Oral Medicine and Radiology, Tamil Nadu Government Dental College and Hospital, Chennai, with a complaint of swelling on the left side of the upper lip region for the past 10 years. The lesion was painless and had gradually increased in size. He had nasal stuffiness and fullness around the upper lip and nasal alae.

Rest of his Past medical history, Past dental history, Personal history, Family history were non-contributory.

On clinical extra-oral examination, there was a mild facial asymmetry on left naso-labial region. Obliteration of the nasolabial sulcus and elevated left nare was also evident (**Fig. 1A, 1B**). On palpation, the lesion measured roughly 2×1cm in diameter, mobile, fluctuant, soft in consistency and non-tender.

Local intra-oral examination revealed, that the swelling extended laterally from level of mesial surface of 23 extending medially to the right side crossing the midline 2–3mm beyond the labial frenum, superiorly obliterating the left maxillary labial vestibule. The mucosa covering the swelling had normal colour. No displacement of the adjacent teeth was observed. Vitality of 11, 21, 22 and 23 were not affected (**Fig 2**). Aspiration yielded viscous dirty white fluid.

Based on the history and clinical findings, a provisional diagnosis of nasolabial cyst was made.

Radiographic examinations were performed.Orthopantomogram revealed, a diffuse radiolucent lesion in relation 22 & 23 and margins were not clear. There was no root resorption (**Fig 3**). So, proceeding with Cone Beam CT revealed, well demarcated low-density cystic lesion lateral to the pyriform aperture measuring 20.1 × 16.4 mm in size and without invasion of the adjacent bone (**Fig 4A, 4B &4C**).

Excisional biopsy performed through vestibular approach, which was also the treatment.

Histopathological examination revealed, pseudostratified ciliated columnar epithelium with numerous globlet cells (**Fig 6**).

Postoperative follow-up at 2 months showed good healing without evidence of recurrence. All adjacent teeth remained vital with no further evidence of root resorption (**Fig 5A & 5B**).

III. Discussion

The term nasolabial cyst was coined by Rao[7], and remains the most common name for this lesion which has also been called as nasoalveolar cyst, nasal vestibular cyst, mucoid cyst of the nose and Klestadt's cyst.

The lesion is submucosal and extraosseous, it expands via the gingivobuccal sulcus and expands all the soft-tissues outwards. Even though they are developmental in origin, clinical manifestations do not exist until adulthood[8].

Nasolabial cyst presents in the fourth decade of life, and occurs in 3 times as many women as men in the ratio of 3:1. Our case is a middle aged male, which is a less frequent gender predliction and the lesion was on the left side which is in accordance to the literature.

The soft-tissue swelling may obliterate the mucolabial fold, elevate the ala or the floor of the nose (or both) and fill in the labial vestibule intraorally, with or without nasal obstruction. A nasolabial cyst is usually not painful, unless it is secondarily infected. The lesion may spontaneously rupture and drain orally, nasally or, occasionally, via a cutaneous fistula[9].

The diagnosis can be established by correlating clinical, radiological and histopathological findings.

The presence of a fluctuating rounded mass in the region beside the ala nasi should raise the suspicion of a nasoalveolar cyst. Bimanual palpation with one hand on nasal floor and the other on gingivobuccal sulcus provides a good method of examination[8]. Nasolabial cyst does not cause any displacement of the teeth.

The differential diagnosis includes other lesions affecting the anterior maxillary region, such as odontogenic cysts and periapical abscesses and granulomas.

Pulp vitality testing of the adjacent teeth is essential for proper diagnosis, as a coincidental lesion being absent, they will be vital in cases of nasolabial cyst.

Dermoid and epidermoid cysts should also be considered in the differential, although they are associated with yellow discoloration of the overlying mucosa whereas in nasolabial cysts, the mucosa conserves its normal pink hue or appears blue-tinged. Furthermore, dermoid and epidermoid cysts are usually diagnosed in childhood, while nasolabial cysts are more common in adult patients[11,12].

As the nasolabial cysts arise in soft tissues, in most cases there are no radiographic changes. Occasionally, pressure resorption of the underlying bone may occur. Routine intraoral radiographs are not diagnostic for nasolabial cyst but assist in excluding other odontogenic or non-odontogenic cyst[10] as in our case.

Computerized tomography or MRI can clearly define the margins. Because of its lower cost, CT is preferable to MRI in the evaluation of a suspected nasolabial cyst.

In this case the CBCT image revealed a well demarcated low-density cystic lesion lateral to the pyriform aperture without invasion of the adjacent bone (**Fig 4A, 4B & 4C**).

Treatment of choice for these cysts is surgical resection via sublabial approach which can even be performed under local anesthesia, as in our case. Recurrence after treatment has not been reported up to now, and malignant degeneration had been determined in one case only. Alternatively, endoscopic cyst marsupialization via transnasal approach can be considered for treatment. Aspiration of the cyst and injection of sclerosing agents constitute other methods of treatment and are rarely used[8].

Histopathological findings reveals ciliated pseudostratified columnar epithelium and, occasionally, stratified squamous epithelium[12]. In our case, the cystic cavity was lined by pseudostratified ciliated columnar epithelium with basal cells and goblet cells, confirming the diagnosis of nasolabial cyst.

IV. Conclusion

According to the present case report and the literature, it is concluded that, despite the low frequency of this entity, it is important to establish the correct diagnosis to enable the prompt modality of treatment.

Figure 1A Photograph of face front view, showing elevated left ala of nose(black arrow) with mild facial asymmetry.

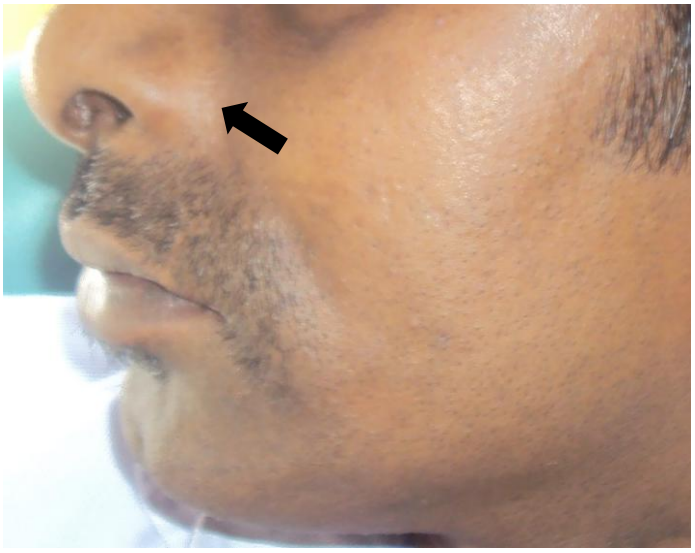

Figure 1B Photograph of face lateral view, showing obliterated nasolabial sulcus(black arrow).

Figure 2 Intra-oral photograph revealing the extension and colour of the swelling.

Figure 3 Orthopantomogram showing well defined radiolucency in the periapical region of 21, 22 &23.

Figure 4 A CBCT axial view revealing the size and the extent of the lesion.

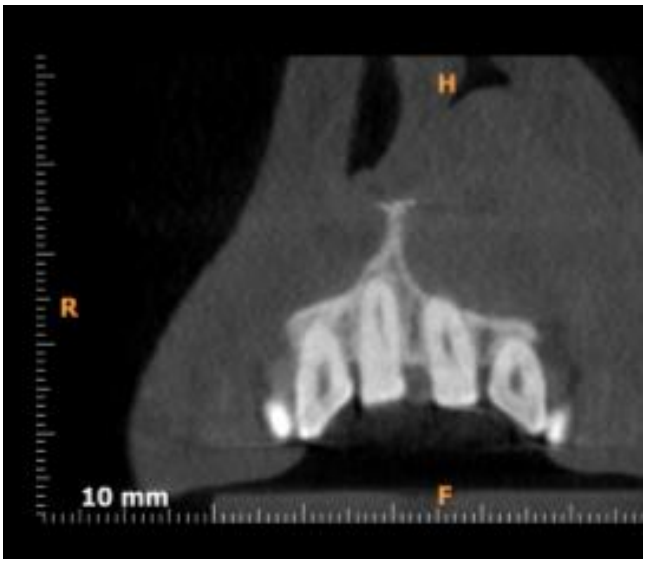

Figure 4 B CBCT coronal view showing intact labial cortical bone.

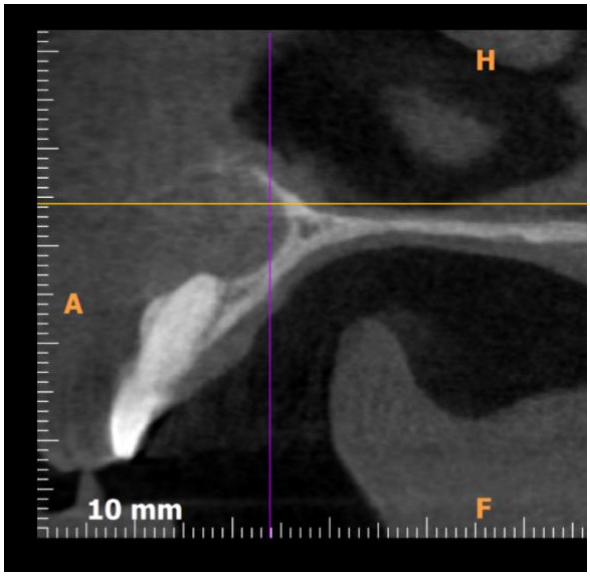

Figure 4 C CBCT sagittal veiw showing intact inferior and posterior margins.

Figure 5 A Post-operative extra-oral photograph with normal nasolabial depth.

Figure 5 B Post-operative intra-oral photograph with healing.

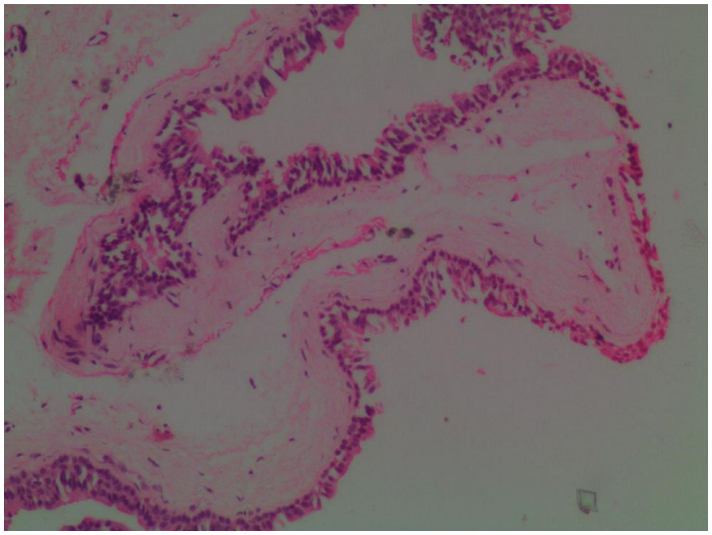

Figure 6 Histopathologic section shows the cyst lining characterized by pseudostratified ciliated columnar epithelium and extensive zones of goblet cells. (Hematoxylin and eosin stain. Original magnification 10x).

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