NASOLABIAL CYST: A CASE REPORT OF A RARE NON-ODONTOGENIC SWELLING WITH EMPHASIS ON RADIOLOGICAL DIFFERENTIATION

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Abstract

Nasolabial cysts are uncommon, non-odontogenic soft-tissue cysts located in the nasolabial fold. They represent a small fraction of maxillofacial cysts, typically presenting as a painless swelling, sometimes associated with nasal obstruction. This report details the case of a 37-year-old male who presented with a slowly enlarging right nasolabial swelling over three years, accompanied by mild pain and nasal blockage. Clinical and computed tomography (CT) imaging revealed a well-defined soft tissue lesion measuring approximately 2.9×2.7 cm, demonstrating scalloping of the adjacent maxilla. The cyst was completely excised via a sublabial approach, and histopathological analysis confirmed the diagnosis of a nasolabial cyst. The patient experienced an uneventful recovery with no recurrence observed at two-month follow-up. This case underscores the importance of considering nasolabial cysts in the differential diagnosis of facial swellings and highlights complete surgical excision as the definitive treatment, offering an excellent prognosis.

Keywords: *Nasolabial cyst, non-odontogenic cyst, facial swelling, CT scan, surgical excision.*

Introduction

Nasolabial cysts, also known as nasoalveolar or Klestadt cysts, are rare, non-odontogenic developmental cysts found in the soft tissue of the upper lip and nasal vestibule. Their embryological origin is believed to stem from remnants of the nasolacrimal duct epithelium [1]. These cysts account for approximately 0.3–0.7% of all maxillofacial cysts [2]. They predominantly affect middle-aged adults, with a female predilection, typically manifesting as a painless swelling in the nasolabial fold [3]. Larger lesions may result in nasal obstruction or cosmetic deformity. Given their soft-tissue nature, nasolabial cysts are not visible on standard radiographs, making advanced imaging modalities like CT or magnetic resonance imaging (MRI) crucial for diagnosis. Surgical excision, commonly performed via a sublabial approach, or endoscopic marsupialization are the primary treatment options. This report describes a case of a nasolabial cyst in a 37-year-old male, discussing its diagnosis, management, and important differential considerations.

Case Report

A 37-year-old male presented to the outpatient department complaining of a progressive swelling in the right nasolabial area that had developed over the past three years. The swelling was associated with intermittent mild pain and occasional nasal obstruction on the ipsilateral side. The patient denied any history of trauma, discharge, or previous surgical intervention in the region.

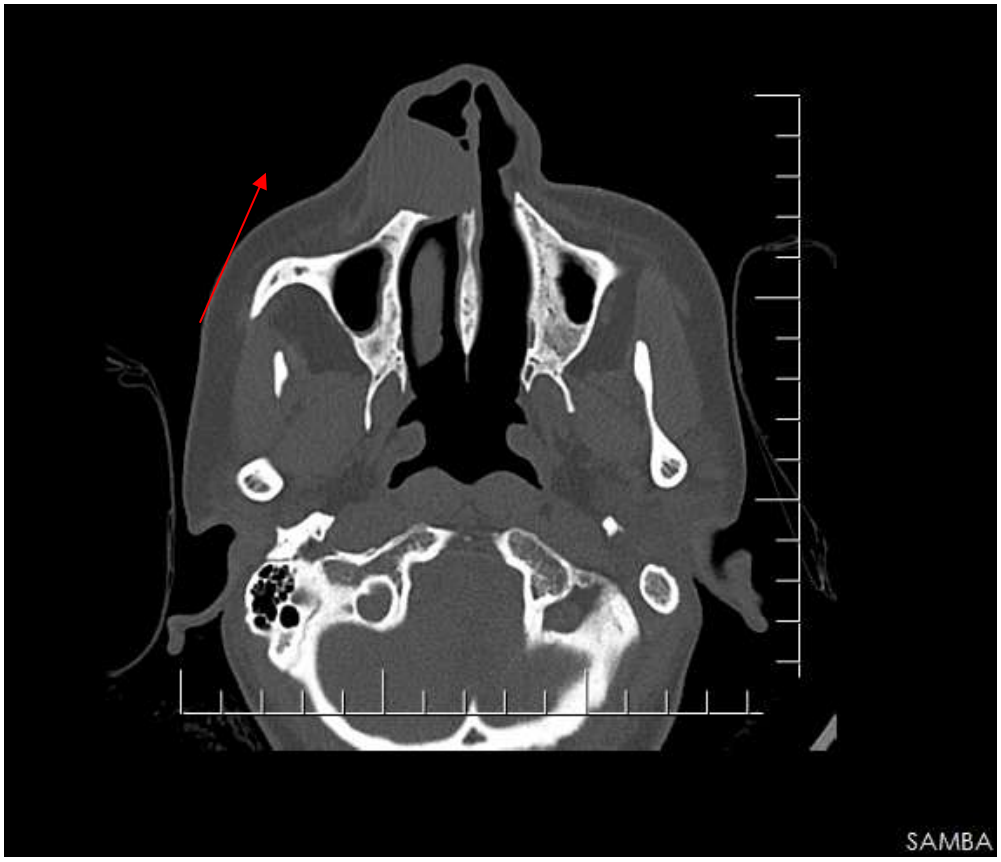
Clinical Examination: Extraoral inspection revealed a subtle fullness in the right nasolabial fold. Intraorally, a fluctuant, non-tender mass was palpable in the upper right buccal sulcus. The overlying mucosa appeared normal, and no tooth mobility or discoloration was noted.

Investigations: A **well-circumscribed soft-tissue density lesion** is identified in the right nasolabial region, measuring approximately 2.9×2.7 cm on coronal images, with an average density of 75 Hounsfield Units (HU). This lesion is noted to abut both the **right inferior turbinate region** and the **nasal septum**. There is no evidence of fat or calcification within the lesion. The lesion causes **scalloping of the underlying right maxillary bone** but shows no signs of intraosseous involvement. Additionally, the CT scan reveals a **mildly deviated nasal septum to the right side with a bony spur**, **right middle and inferior turbinate hypertrophy**, and **medialization of the right uncinate process with a type I insertion**.

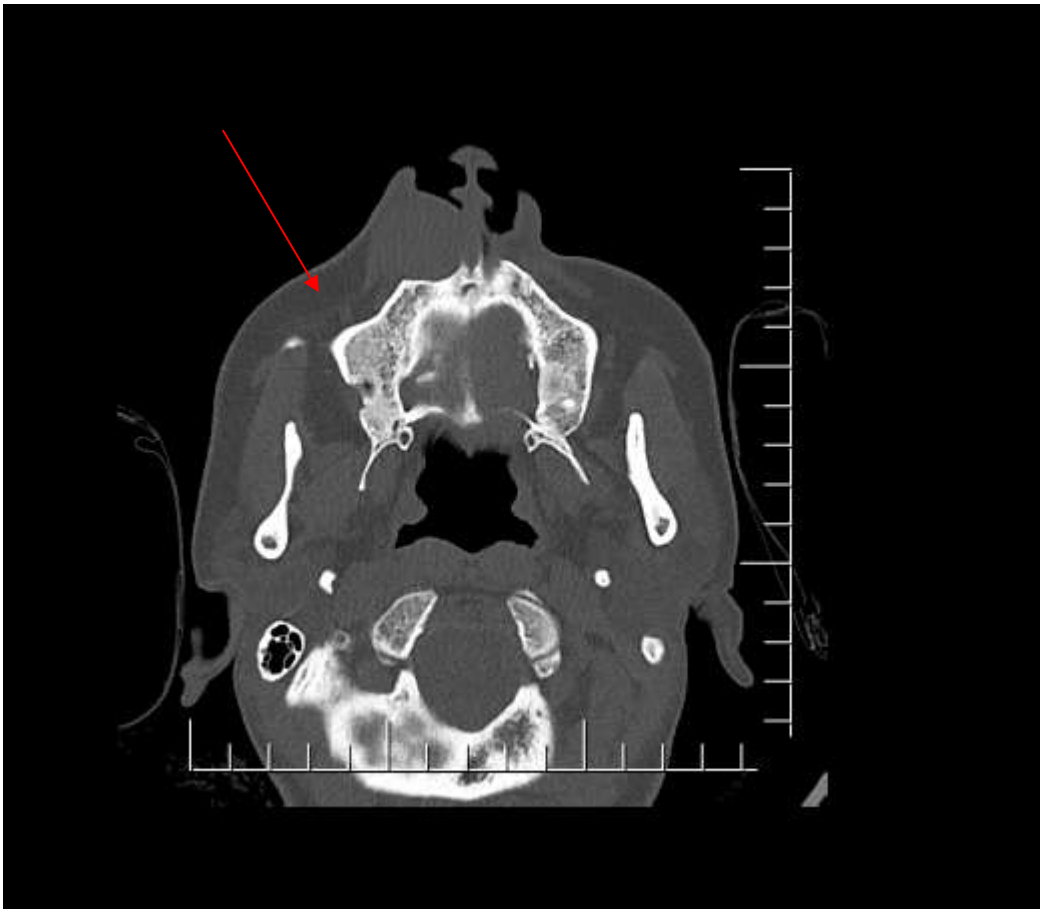
Treatment: Under local anesthesia, an intraoral sublabial incision was made. The cyst was carefully dissected and completely removed. The excised lesion was then sent for histopathological examination.

Histopathology: Microscopic examination revealed a cyst lined with pseudostratified columnar epithelium containing goblet cells, which is consistent with the diagnosis of a nasolabial cyst.

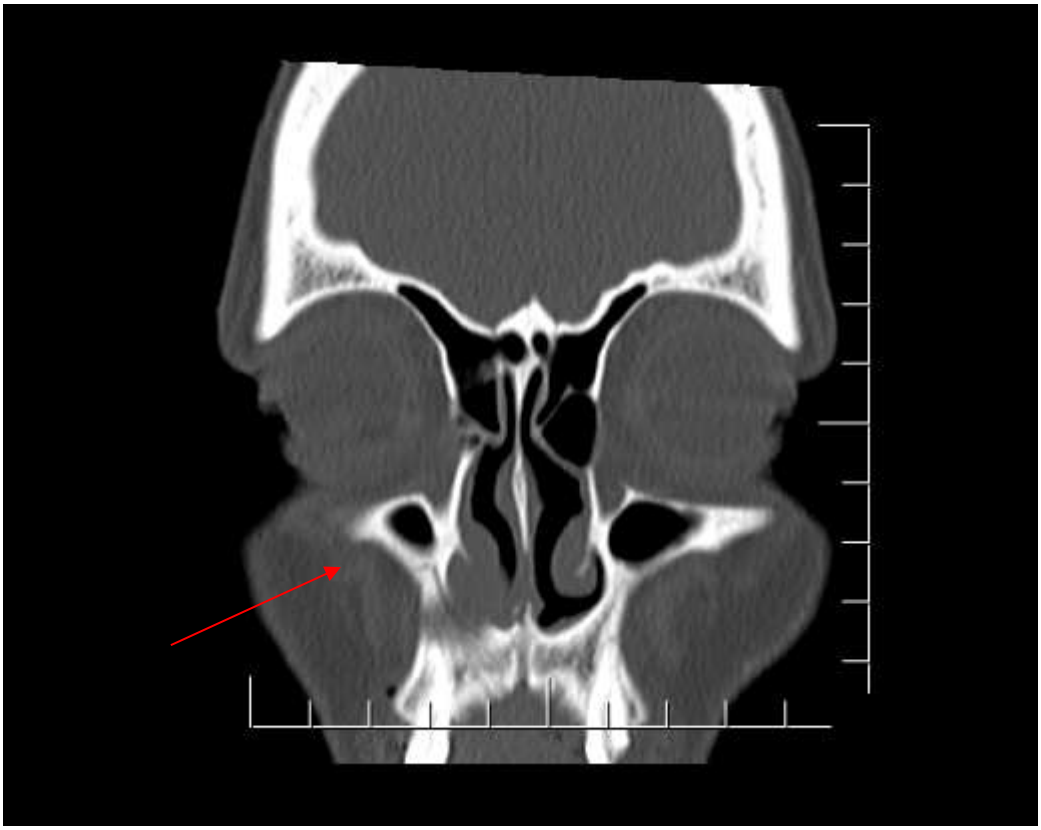
Follow-up: The postoperative course was uneventful. The patient was followed up at two months, demonstrating complete resolution of symptoms and no evidence of recurrence.



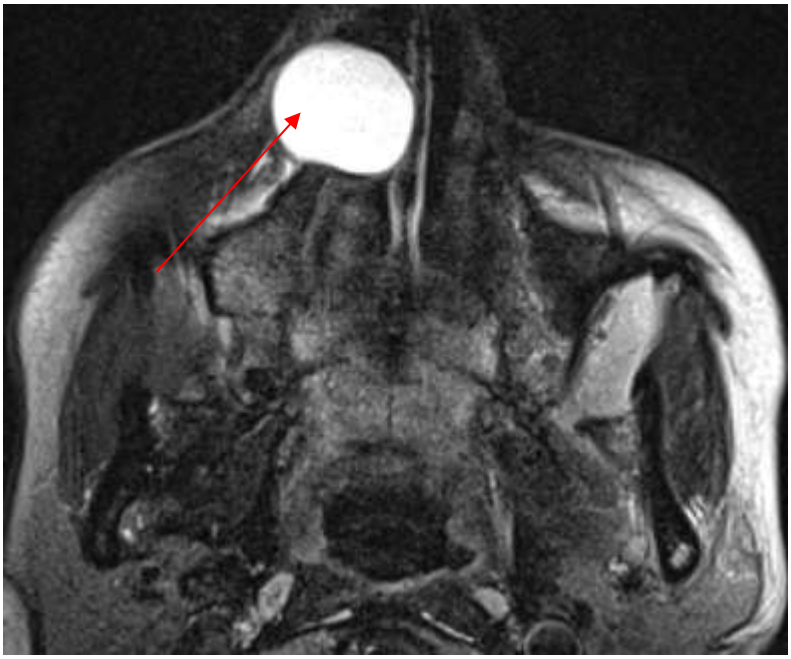
CT PNS AXIAL IMAGES SHOWING RIGHT NASOLABIAL CYST



RIGHT NASOLABIAL CYST SCALLOPING THE RIGHT MAXILLARY BONE.



NASOLABIAL CYST ON CORONAL PNS IMAGES ABUTTING THE RIGHT INFERIOR TURBINATE AND NASAL SEPTUM.



MRI T2 SEQUENCE SHOWING CYSTIC NATURE OF THE LESION SEEN AS HYPERINTENSITY.

Discussion

Nasolabial cysts are rare, non-odontogenic, epithelial-lined soft-tissue cysts primarily found in the nasolabial sulcus. First described by Zuckerkandl in 1882 and further characterized by Klestadt in 1953, their origin is attributed to embryonic remnants of the nasolacrimal duct or anomalies during facial process fusion [1, 2].

Clinical Features: Most patients present in their fourth to fifth decade of life, with a noted 3:1 female predominance [3]. The typical presentation is a painless swelling in the nasolabial fold, often leading to elevation of the nasal ala. Larger cysts can cause nasal vestibule obstruction or facial deformity. Infected cysts may become tender and erythematous.

Radiological Characteristics and Differential Diagnosis: Due to their extraosseous nature, nasolabial cysts are typically not visible on plain radiographs. **CT imaging is invaluable for assessing the extent of the lesion, its relationship to surrounding structures, and any associated bony remodeling, which is crucial for differentiating it from other pathologies.** In our case, CT revealed scalloping of the maxilla without intraosseous extension, supporting its soft-tissue origin [4].

Radiological differentiation from other conditions is key:

- **Periapical (radicular) cysts:** These are odontogenic cysts that develop in association with non-vital teeth. Radiologically, they manifest as **well-defined, periapical radiolucencies with a clear lamina dura surrounding the lesion, indicating an intraosseous origin** [6]. This contrasts sharply with the soft-tissue density and extraosseous nature of a nasolabial cyst.
- **Nasopalatine duct cyst:** Also known as an incisive canal cyst, this is the most common non-odontogenic cyst of the oral cavity. It presents as a **midline palatal swelling and appears as a well-circumscribed radiolucency within the nasopalatine canal on radiographs and CT scans, often with a "heart-shaped" or oval appearance due to the superimposition of the nasal spine** [7]. Unlike nasolabial cysts, it is clearly intraosseous.
- **Dermoid/epidermoid cysts:** While these can occur in the head and neck region, they are often **midline in location and typically appear as well-defined, unilocular cystic lesions on imaging. On CT, their density can vary depending on their contents (e.g., keratin, fat), and they may exhibit a "doughy" consistency on palpation. However, they lack the specific anatomical location and typical pseudostratified columnar epithelial lining of a nasolabial cyst** [8].
- **Benign soft tissue tumors (e.g., lipomas, neurofibromas):** These are generally **solid lesions on imaging, unlike the cystic nature of a nasolabial cyst. Lipomas will appear as fat-density lesions on CT, while neurofibromas might show a "target sign" or "fascicular sign" on MRI. They typically do not cause bony remodeling or scalloping in the same manner as a pressure effect from a growing cyst.**
- **Odontogenic keratocyst (OKC)/Keratocystic odontogenic tumor (KCOT):** While often intraosseous, large KCOTs can present as soft tissue swellings if they perforate the bone. Radiologically, KCOTs are characterized by their **multilocular or unilocular radiolucent appearance with scalloped margins and a tendency to grow along the medullary spaces, causing minimal bony expansion. Their histological features, particularly the corrugated parakeratinized epithelial lining, clearly differentiate them from nasolabial cysts.**
- **Periapical abscess:** This is an acute inflammatory process usually associated with a non-vital tooth. Radiologically, it might present as a **diffuse radiolucency or widening of the periodontal ligament space around the tooth apex. Clinically, it's acutely painful with signs of inflammation (redness, warmth, tenderness), unlike the typically slow-growing and painless nature of a nasolabial cyst.**

Histopathology: The cyst lining typically consists of pseudostratified columnar epithelium with goblet cells, sometimes undergoing squamous metaplasia if chronically inflamed [5]. This pattern was consistent with our histological findings.
Management: Complete surgical excision remains the treatment of choice. The sublabial approach offers direct access with minimal cosmetic impact. Endoscopic marsupialization has emerged as a less invasive alternative with good results, particularly for medially extending cysts [4]. Aspiration and simple drainage are not recommended due to high recurrence rates.

Prognosis: Recurrence is rare following complete excision. Malignant transformation is exceptionally rare, with very few documented cases in the literature [8].

Conclusion

Nasolabial cysts, though rare, should be included in the differential diagnosis of swellings in the anterior maxillofacial region. Clinical examination, strongly supported by advanced imaging like CT, is essential for accurate diagnosis and for differentiating it from other conditions, especially those with intraosseous involvement. Complete surgical excision remains the definitive treatment, offering an excellent prognosis with minimal recurrence. Awareness of its distinguishing features and radiological characteristics helps ensure appropriate and timely management.

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