

Unmasking a Rare Extraosseous Facial Cyst: A Case Report of a Nasolabial Cyst

Dr. Gowtham M¹, Dr. Anshul Chatrath²

^{1,2}Department of Otorhinolaryngology, Santosh Medical College and Hospital, Ghaziabad, Uttar Pradesh, India

Abstract: *Nasolabial cyst is a rare, non-odontogenic developmental cyst arising within the soft tissues of the nasolabial fold, typically presenting as a slowly enlarging swelling causing cosmetic deformity and, occasionally, nasal obstruction. We report the case of a 22-year-old woman who presented with a painless swelling over the left nasal ala of 7–8 months duration associated with progressive ipsilateral nasal obstruction. Clinical examination revealed a soft-to-firm, mobile swelling in the left nasolabial region with obliteration of the nasolabial fold. Computed tomography demonstrated a well-defined cystic lesion producing smooth scalloping of the adjacent maxillary bone without bony destruction, while ultrasonography confirmed a cystic lesion containing dependent mobile debris without internal vascularity. The patient underwent complete surgical excision through a sublabial approach. Histopathological examination demonstrated a cyst lined predominantly by pseudostratified ciliated columnar epithelium with numerous goblet cells, confirming the diagnosis of a nasolabial cyst. Nasolabial cysts are believed to arise from embryonic remnants of the nasolacrimal duct and should be considered in the differential diagnosis of unilateral nasolabial swellings. Complete surgical excision remains the treatment of choice, providing excellent functional and cosmetic outcomes with a minimal risk of recurrence. Early recognition, appropriate imaging, and definitive surgical management are essential for achieving favourable clinical outcomes.*

Keywords: Nasolabial cyst; Klestadt's cyst; non-odontogenic cyst; Nasolacrimal duct remnant; Sublabial excision; Extraosseous cyst

1. Introduction

Nasolabial cyst, also known as the nasoalveolar cyst, nasovestibular cyst, subalar cyst, or Klestadt's cyst, is a rare non-odontogenic developmental cyst occurring within the soft tissues beneath the nasal ala. It was first described by Zuckerkandl in 1882 and accounts for approximately 0.7% of all maxillofacial cysts. [9] Unlike odontogenic cysts, nasolabial cysts are entirely extraosseous and usually present as a slowly enlarging swelling in the nasolabial fold. [2,9]

Although the exact pathogenesis remains controversial, the most widely accepted theory suggests that these cysts arise from embryonic remnants of the nasolacrimal duct. An alternative hypothesis proposes epithelial entrapment between the medial and lateral nasal processes during embryological fusion. [2,9] Nasolabial cysts predominantly affect women, usually during the fourth and fifth decades of life, and are unilateral in nearly 90% of cases. [1,5,9] Patients commonly present with a painless swelling causing cosmetic deformity, nasal obstruction, or, less frequently, pain secondary to infection. [1,2,5] Owing to their rarity and variable clinical presentation, diagnosis may be delayed. Cross-sectional imaging, particularly computed tomography and ultrasonography, plays an important role in confirming the diagnosis, assessing adjacent bony remodelling, and excluding other cystic lesions of the maxillofacial region. [2,5] We present a case of a unilateral nasolabial cyst in a 22-year-old female, an age group in which this lesion is relatively uncommon, successfully managed by complete surgical excision through a sublabial approach with excellent functional and cosmetic outcomes.

2. Case Presentation

A 22-year-old woman presented to the Department of Otorhinolaryngology at Santosh Medical College and Hospital, Ghaziabad, with complaints of a painless swelling

over the left nasal ala for approximately 7–8 months, associated with progressively worsening left-sided nasal obstruction. The swelling had gradually increased in size over time. There was no history of pain, nasal discharge, epistaxis, fever, facial trauma, previous nasal surgery, or constitutional symptoms.

On clinical examination, a soft-to-firm, well-circumscribed, freely mobile swelling measuring approximately 3 × 4 cm was noted in the left nasolabial region, producing obliteration of the left nasolabial fold. The overlying skin appeared normal without erythema or ulceration. Intraoral examination demonstrated fullness of the left gingivolabial sulcus without mucosal ulceration. There was no cervical lymphadenopathy, and the remainder of the otorhinolaryngological examination was unremarkable.



Figure 1: Clinical photograph demonstrating obliteration of the left nasolabial fold due to the underlying cystic swelling

Radiological Evaluation

Computed tomography (CT) of the face demonstrated a well-defined cystic lesion measuring approximately 3×4 cm within the left nasolabial region. The lesion showed mildly increased attenuation consistent with proteinaceous cystic

contents and produced smooth scalloping of the adjacent anterior maxillary cortex without evidence of bony destruction, calcification, or fat density. These findings were suggestive of an extraosseous developmental cyst.



Figure 2: Axial CT scan showing a well-defined cystic lesion within the left nasolabial region with smooth scalloping of the adjacent maxillary bone.

Ultrasonography demonstrated a completely cystic lesion containing dependent mobile internal debris without internal septations or mural nodules. Colour Doppler examination showed no significant internal vascularity. These imaging findings were consistent with a unilateral nasolabial cyst containing proteinaceous secretions or old haemorrhagic debris.

Surgical Management

Complete surgical excision was performed under general anaesthesia using a left sublabial approach, selected to avoid an external scar and provide optimal cosmetic results.

Following a sublabial incision, careful circumferential dissection was carried out to separate the cyst from the surrounding soft tissues. Intraoperative decompression of the cyst by aspiration of its contents was performed to facilitate dissection and improve visualization of the posterior attachments. The cyst was subsequently removed in its entirety with meticulous preservation of the surrounding structures.

On cut section, the cyst contained turbid brown fluid with dark brown sediment, suggestive of proteinaceous and haemorrhagic contents. The specimen was submitted for histopathological examination.



Figure 3: Intraoperative photograph demonstrating complete sublabial dissection and excision of the nasolabial cyst.

Histopathological Examination

Microscopic examination revealed a cyst wall lined predominantly by pseudostratified ciliated columnar epithelium containing numerous goblet cells, with focal areas

of squamous metaplasia. The cyst wall consisted of fibro collagenous connective tissue with mild chronic inflammatory cell infiltration. These findings were consistent with the diagnosis of a nasolabial cyst.

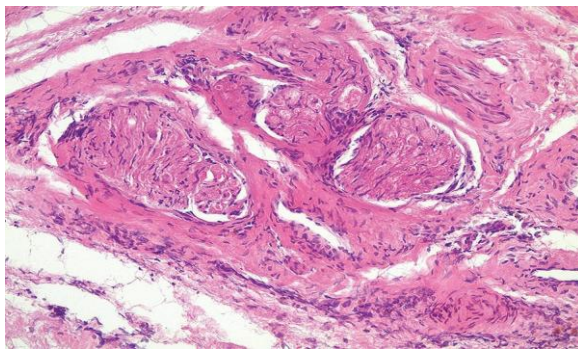


Figure 4: Histopathological section showing pseudostratified columnar epithelial lining with abundant goblet cells (H&E stain)

3. Discussion

Nasolabial cyst is an uncommon, benign, extraosseous developmental cyst of the maxillofacial region. Despite its rarity, it should be considered in the differential diagnosis of a painless swelling involving the nasal ala or nasolabial fold. The lesion predominantly affects women and is most commonly diagnosed during the fourth and fifth decades of life, although younger patients, as in the present case, may also be affected. The most widely accepted embryological theory attributes its origin to epithelial remnants of the nasolacrimal duct. An alternative hypothesis proposes epithelial entrapment during fusion of the medial and lateral nasal processes. Regardless of its origin, the lesion develops within the soft tissues of the nasolabial fold, explaining its characteristic extraosseous location.

Clinically, patients usually present with a slowly enlarging painless swelling resulting in obliteration of the nasolabial fold, elevation of the nasal ala, cosmetic deformity, and varying degrees of nasal obstruction. Infection may

occasionally lead to pain, erythema, and spontaneous drainage. In the present case, progressive unilateral nasal obstruction associated with a painless facial swelling was the predominant presentation.

Imaging plays an important role in confirming the diagnosis and excluding other cystic lesions. CT typically demonstrates a well-defined soft tissue lesion causing smooth pressure remodelling of the adjacent maxillary bone without osseous destruction, while ultrasonography confirms the cystic nature of the lesion and excludes vascular malformations. Histopathological examination remains the gold standard for definitive diagnosis, characteristically demonstrating pseudostratified ciliated columnar epithelium with goblet cells. The differential diagnosis includes odontogenic cysts, nasopalatine duct cyst, epidermoid cyst, dermoid cyst, dentoalveolar abscess, and benign salivary gland lesions. Careful clinical examination combined with imaging findings usually allows accurate preoperative diagnosis.

Complete surgical excision remains the treatment of choice. The traditional intraoral sublabial approach provides excellent exposure, allows complete removal of the cyst wall, avoids visible facial scars, and is associated with low recurrence rates. Although endoscopic trans nasal marsupialization has emerged as a minimally invasive alternative in selected cases, complete enucleation remains the preferred approach for larger lesions. In the present case, intraoperative decompression facilitated safe circumferential dissection and complete excision, resulting in an excellent cosmetic and functional outcome without postoperative complications.

4. Conclusion

Nasolabial cyst is a rare, benign, non-odontogenic developmental cyst that should be considered in patients presenting with a painless swelling of the nasolabial region associated with cosmetic deformity or nasal obstruction. Accurate diagnosis relies on careful clinical evaluation supported by appropriate imaging, while histopathological examination confirms the diagnosis. Complete surgical excision through an intraoral sublabial approach remains the gold standard treatment, offering excellent cosmetic results and a very low risk of recurrence.

References

- [1] Choi JH, Cho JH, Kang HJ, Chae SW, Lee SH, Hwang SJ, et al. Nasolabial cyst: a retrospective analysis of 18 cases. *Ear Nose Throat J.* 2002;81(2):94-96.
- [2] Nixdorf DR, Peters E, Lung KE. Clinical presentation and differential diagnosis of nasolabial cyst. *J Can Dent Assoc.* 2003;69(3):146-149.
- [3] Barzilai M. Bilateral nonalveolar cysts: case report. *Clin Radiol.* 1994;49(2):140-141.
- [4] Marcoviceanu MP, Metzger MC, Deppe H, Freudenberg N, Schmelzeisen R. Report of rare bilateral nasolabial cysts. *J Craniomaxillofac Surg.* 2009;37(2):83-86.
- [5] Yuen HW, Julian CY, Samuel CL. Nasolabial cysts: clinical features, diagnosis, and treatment. *Br J Oral Maxillofac Surg.* 2007;45(4):293-297.
- [6] Sahin C. Nasolabial cyst. *Case Rep Med.* 2009; 2009:586201.
- [7] Su CY, Chien CY, Hwang CF. A new trans nasal approach to endoscopic marsupialization of the nasolabial cyst. *Laryngoscope.* 1999;109(7 Pt 1):1116-1118.
- [8] Lee JY, Baek BJ, Byun JY, Chang HS, Lee BD, Kim DW. Comparison of conventional excision via a sublabial approach and trans nasal marsupialization for the treatment of nasolabial cysts: a prospective randomized study. *Clin Exp Otorhinolaryngology.* 2009;2(2):85-89.
- [9] Allard RH. Nasolabial cyst: review of the literature and report of seven cases. *Int J Oral Surg.* 1982;11(6):351-359.
- [10] Janardhan N, Venkateswarlu V, Rajesh Kumar S, Narasimharaju BG. Role of cryosurgery in the surgical management of nonalveolar cyst. *Indian J Otolaryngol Head Neck Surg.* 2013;65(Suppl 2):376-379.