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NASOLABIAL CYST: A VEILED RARITY IN THE REALM OF NON-ODONTOGENIC CYSTS

Oral Pathology

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ABSTRACT

Nasolabial cyst (NC), also known as Klestadt's cyst, is a rare non-odontogenic soft tissue cyst of the nasal alar region, accounting for only 0.7% of all non-odontogenic cysts. It presents as a localized upper lip swelling, often asymptomatic but sometimes causing cosmetic concerns. Diagnosis of a Nasolabial cyst is primarily clinical but may be confirmed through histopathological evaluation. Due to its rarity, NC is frequently misdiagnosed as odontogenic lesions. This paper reports a case of a 44-year-old female with a swelling near the right ala of nose, clinically suggestive of Nasolabial cyst. Complete surgical excision under local anesthesia was performed, and histopathological analysis confirmed the diagnosis, highlighting the need for accurate clinical recognition.

KEYWORDS

Nasolabial Cyst, Klestadt's cyst, Nonodontogenic cyst, soft tissue cyst

INTRODUCTION

Nasolabial cysts are rare, nonodontogenic soft-tissue lesions found in the anterior maxillary region, involving nasal vestibule, canine fossa, and sublabial region.[1,2] First described in 1882 by Zuckerkandl and later studied by Klestadt in 1953, these cysts are uncommon, affecting 1.6 per 100000 persons each year.[3,4]

They mainly affect women in their 4th to 5th decades of life and make up about 0.7% of all non-odontogenic cysts.[2] These cysts usually present as painless, slowly enlarging swellings that distort the nasolabial fold and elevate the nasal area.[5]

Although the exact cause remains unclear, the two main theories suggesting the cyst originates from either trapped nasolacrimal duct tissue or from embryonic fissural remnants.[6,7]

The present article aims to describe the clinical presentation, histopathological analysis and diagnosis of nasolabial cyst by means of an illustrative case report.

Case Report

A 44-year-old female presented to the outpatient department with a painless swelling in the right side of face adjacent to the nose for 6 months. Swelling was persistent and was gradually enlarging in size in the past 2 weeks.

There was no history of trauma, nasal obstruction, nasal discharge or bleeding. Her past medical history, personal history, and family history were non-contributory.

On extraoral examination, a swelling was observed on the right ala of the nose, which obliterated the nasolabial sulcus (Figure 1). On palpation, the swelling extended from the right lateral surface of the middle third of the nose to the mid-papillary region, about 2 cm below the lower border of the eye, measuring approximately 1.1 x 1.5 cm. The swelling was firm in consistency and non-tender on palpation.

Figure 1: Extraoral photograph of patient showing deformity of the nasolabial sulcus and elevation of the ala nasi on the right.

Intraoral examination revealed that the swelling extended from the mesial aspect of tooth 11 to the distal aspect of tooth 13, without crossing the midline, and with obliteration of the labial vestibule (Figure 2). The swelling was firm in consistency, non-tender, and showed no signs of bleeding or pus discharge.

Figure 2: Intraoral photograph of patient showing obliteration of the right labial vestibule.

By correlating clinical findings with patient history, we came to the provisional differential diagnosis of nasolabial cyst, mucocele or soft tissue cysts like sebaceous cyst.

OPG showed a diffuse radiolucency in relation to anterior maxilla. Computed tomography (CT) showed a hypodense cystic lesion of approx. 22 x 14 x 16 mm in the right nasal fossa. Based on the findings, a provisional diagnosis of a non-odontogenic/ soft tissue cyst or tumor was made. Surgical enucleation of the cyst was done under general anesthesia and specimen sent for histopathologic evaluation.

Macroscopic appearance of the specimen was of an 18 x 10 x 5 mm brownish soft tissue with irregular surface.

Microscopic examination H&E-stained soft tissue bit revealed a cyst wall with variability in epithelial lining, ranging from of pseudostratified columnar epithelium to stratified squamous epithelium, showing intermittent goblet-like mucin-producing cells (Figure 3-5).

The underlying connective tissue displayed moderately dense bundles of collagen fibers with the presence of a few chronic inflammatory cells

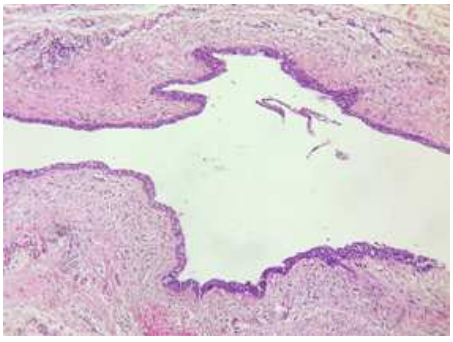

Figure 3: Photomicrograph shows cyst lining characterized by pseudostratified columnar epithelium (H & E Stain, x 100)

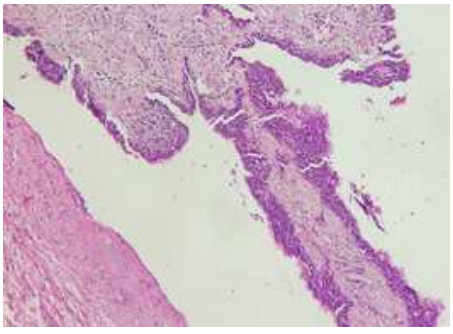

Figure 4: Photomicrograph shows focal areas covered by non-keratinized stratified squamous epithelium (H & E Stain, x 100)

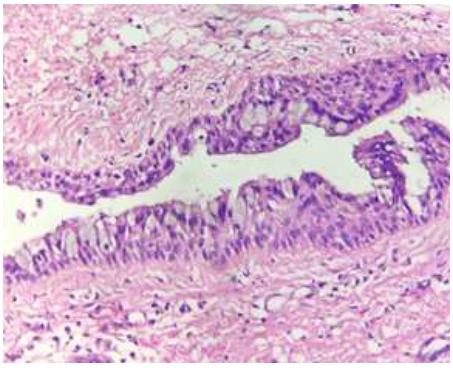

Figure 5: Photomicrograph shows pseudostratified columnar epithelium with intermittent occurrence of goblet like mucin producing cells (H & E Stain, x 400)

Depending upon the microscopic findings, we came to the final diagnosis of Nasolabial cyst. Follow up showed reduction in the swelling.

DISCUSSION

Nasolabial cysts were first identified by Zuckerkandl back in 1882 and are a distinctive type of soft tissue anomaly in the maxillofacial area.[4,8] Nasolabial cyst is a rare non-odontogenic cyst occurring in the nasolabial area.[5,9]

Over time, these cysts have been referred to by multiple names, including nasoalveolar cyst, Klestadt's cyst, nasal vestibular cyst, mucoid cyst of the nose, and nasoglobular cyst, reflecting the evolving understanding and classification within medicine.[4,11]

The specific term "nasolabial cyst" was later introduced by Rao in 1951 to accurately describe their location within the soft tissues at the nasolabial fold, just beneath the nasal wings.[12]

The term "nasolabial cyst" is now used instead of "nasoalveolar cyst" because the cyst is primarily located in the nasolabial fold, and the alveolar process is not directly involved, making the older term less accurate.[8]

These cysts typically appear in people during their middle age, particularly between the 4th and 5th decades of life.[1,13]

There is a notable gender bias, with females being affected four times more often than males, potentially due to hormonal factors or genetic predispositions that are not fully understood.[4,8]

Additionally, there seems to be a higher occurrence rate among individuals of African-American heritage, suggesting genetic or ethnic influences on how these cysts form or manifest.[4,14]

When it comes to the placement of these cysts, they are mostly found on one side of the face, with approximately 90% of cases being unilateral.[13] However, in about 10% of cases, they can appear on both sides. Interestingly, when they do occur on one side, there's a slight, unexplained preference for the left side.[9,13]

The exact cause of nasolabial cysts remains debated, with multiple theories proposed. One widely accepted view is Klestadt's embryonic sequestration hypothesis, which suggests that these cysts originate from epithelial remnants trapped during the fusion of the maxillary and lateral nasal processes.[8,15] Similarly, the "seed theory" attributes their formation to retained nasolacrimal duct epithelium due to their shared histological features and location.[5]

Bruggemann's 1920 theory, considered the most plausible, posits that nasolabial cysts arise from epithelial remnants of the lower anterior nasolacrimal duct.[13]

Some theories also implicate trauma in accelerating their formation by stimulating epithelial proliferation or inclusion within mesenchymal tissues.[9]

Despite variations in these perspectives, most research leans towards cysts developing from nasolacrimal duct remnants. These cysts, although congenital, typically do not manifest until adulthood, suggesting an additional environmental or physiological triggers.[13]

Nasolabial cysts are usually presented as a slow-growing, painless swelling near the base of the nostril, often on the upper lip.[4,8] The swelling, typically ranging from 1 to 5 cm, may extend into the nasal or oral vestibule, leading to obliteration of the nasolabial fold, elevation of the nasal ala, and nostril deformity.[13]

These cysts are soft, fluctuant, and best identified through bimanual palpation between the nasal floor and labial sulcus.[3,9]

While usually asymptomatic, infected nasolabial cysts can be painful and may rupture spontaneously, draining into the nasal or oral cavity, or rarely through a cutaneous fistula.[4,12]

Diagnosis is primarily clinical, with symptoms like nasal blockage or, in rare cases, epistaxis occurring in larger cysts.[11,16]

Nasolabial cysts, being soft tissue lesions, are generally not visible on routine radiographs unless they cause significant maxillary bone erosion.[3,8]

Advanced imaging, including computed tomography (CT) and magnetic resonance imaging (MRI), provides a clearer view of the cyst's structure, its relation to surrounding tissues, and potential bone involvement.[4,14] CT is preferred for its affordability, while MRI offers superior soft-tissue resolution.[11] Ultrasonography (USG) is also useful for defining cyst boundaries and origin in a non-invasive manner.[4]

Nasolabial cysts require careful differentiation from various odontogenic and non-odontogenic lesions in the anterior maxillary region. Common differentials include periapical abscesses, granulomas, radicular cysts, nasopalatine duct cysts, and dentigerous cysts. Neoplastic lesions, salivary gland tumors, mucoceles, minor salivary gland tumour, benign mesenchymal tumours, and dermoid or epidermoid cyst should also be considered.[1,10,14]

Odontogenic cysts like radicular and dentigerous cysts are intraosseous and appear radiolucent on imaging, unlike the extraosseous nasolabial cyst.[4,5] Periapical abscesses and granulomas originate from non-vital teeth, confirmed via vitality testing.[4]

Nasopalatine duct cysts are midline intraosseous lesions, whereas nasolabial cysts are soft tissue masses.[5,11] Dermoid and epidermoid cysts, typically seen in childhood, have a yellow mucosal hue, unlike

the pink or bluish tinge of nasolabial cysts.[9,13] Mucoceles can be differentiated from nasolabial cysts by their occurrence on the lower lip and a history of trauma.[12] Salivary gland tumors lack cystic consistency, further aiding in differentiation.[4]

Brown-Kelly was the first to describe the histopathology of this lesion in 1898.[3] Histopathological examination typically reveals a cyst lined with respiratory epithelium. The cyst lining may also consist of a mixture of epithelial types, such as stratified squamous, cuboidal, and pseudostratified squamous epithelium, along with goblet cells and inflammatory cells.[8,13] In some cases, particularly when infected, squamous metaplasia may occur.[3,13]

Complete surgical excision, usually via a sublabial approach, is the preferred treatment for nasolabial cysts, ensuring minimal morbidity and no recurrence.[4,12]

Alternative methods like aspiration, marsupialization, and sclerosing agent injection have high recurrence rates.[2,3]

CONCLUSION

Nasolabial cysts are rare, non-odontogenic soft-tissue cysts that should be considered in the differential diagnosis of upper lip and nasal swellings. Diagnosing this cyst requires advanced imaging and histopathological confirmation, as routine radiographs are often inadequate. Complete surgical excision is the preferred treatment, offering an excellent prognosis with minimal recurrence. Early recognition and proper management lead to optimal outcomes.

REFERENCES

1. V. S. Sharma, M. V. Subba Rao, Venkata Ramana, Jagannath Prasad, Pravin Tez. “Nasolabial CYST: A Case Report”. Journal of Evolution of Medical and Dental Sciences.2015;4(56);9855-9858.
2. Giongo CC, Antonello GM, Couto RT, Torriani MA. Nasolabial cyst: a case report. Rev Port Estomatol Med Dent Cir Maxilofac. 2014;55(1):55-9.
3. Kajla P, Lata J, Agrawal R. Nasolabial cyst: Review of literature and a case report. J Maxillofac Oral Surg. 2014;13(2):227-230.
4. Munde AD, Mishra SS, Patil S, et al. Nasoalveolar cyst - a case report. J Evolution Med Dent Sci 2021;10(45):4044- 4046.
5. Kumar A, Kishore M, Sinha G. Nasolabial Cyst – A Clinicopathological Case Report. Int J Med Sci Curr Res. 2022;5(2):287-291.
6. Nixdorf DR, Peters E, Lung KE. Clinical presentation and differential diagnosis of nasolabial cyst. J Can Dent Assoc.2003; 69:146–9.
7. Regezi JA, Sciubba JJ. Oral pathology: clinical-pathologic correlations. 2nd ed. Philadelphia: Saunders, WB; 1991.
8. Bouya M, Sarfi D, Ben Yahya I. Diagnosis and therapeutical aspects of nasolabial cyst: A case report. Adv Oral Maxillofac Surg.2022; 6:100262.
9. Sobhana CR, Babu S, N M S. Nasolabial cyst: A rare case report. IOSR J Dent Med Sci. 2017;16(6):69-73.
10. Rodrigues BTG, Fischer A, Romañach MJ, de Andrade BAB, de Almeida Freire N, Israel MS. Nasolabial cyst in an elderly patient: A case report. Gerodontology. 2020; 00:1–4.
11. Surej Kumar LK, Dilna S, Benoy S, Mathew CM. Nasolabial Cyst: a Diagnostic Dilemma. J Dent Shiraz Univ Med Sci. March 2022; 23(1): 72-75.
12. Shanmugapriya S, Manoharan GVMG, Regu P. Unusual predilection of nasolabial cyst - A rare case report. IOSR J Dent Med Sci. 2015;14(10):39-44.
13. Krishnan L, Pawar RD, Ghate GA, Moruskar AM, Shah S. A case report of nasoalveolar cyst: an aesthetic defect in left alar region. Int J Med Rev Case Rep. 2022;6(15):8-10.
14. Ahmed SA, Gombra V, Sircar K, Masood R. Nasolabial Cyst: A Case Report with Review of literature. Update Dent. Coll. j [Internet]. [cited 2024 Oct. 13];14(2):31-35.
15. Kajla P, Lata J, Agrawal R. Nasolabial cyst: review of literature and a case report. J Maxillofac Oral Surg. 2014 Jun;13(2):227-30.
16. Nilesh K. Nasolabial cyst: a rare non-odontogenic orofacial cyst. BMJ Case Rep. 2020;13(6): e235621.