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Case Report

Nasolabial cyst or Radicular cyst-A clinical dilemma influencing treatment

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Abstract

Background: Nasolabial cyst (NLC) is an uncommon, non-odontogenic cyst that exhibits slow growth in naso-alar region. Frequently asymptomatic, the only sign observed is elevation of upper lip and ala of nose on the affected side. The maxillary anterior region is also one of the most common sites of a more common radicular cyst. Keeping in mind the site preference, diagnosis of such lesions require a combined clinical, radiological and histopathological approach.
Case Presentation: This paper presents case of a 52-year-old male who reported with the chief complaint of a slow growing swelling on right side of face since last 3 years along with a review of histopathological parameters of nasolabial cyst.
Conclusion: The choice between odontogenic and non-odontogenic lesions resolved following investigations. Surgical excision was carried out followed by histopathological examination and concomitant endodontic treatment of the teeth involved.

Keywords: Naso-alar, Nasolabial cyst, Non-odontogenic, Radicular, Odontogenic, Cyst

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1. Introduction

Nasolabial cyst (NLC) is a developmental soft tissue cyst accounting for 0.7% of all non-odontogenic cysts.[1] It occurs at a mean age of 41.8 years and shows a significant female predilection.[2,3,4] This cyst was first reported by Klestadt in 1953.[5] It usually presents as an asymptomatic soft tissue swelling of the face, causing obliteration of the nasolabial fold, resulting in relative facial asymmetry.[6,7] The pathogenesis relates to fusion of lateral nasal and maxillary margins during development of tissues. If remnants persist at the caudal end, a NLC may result.[2]

The location of NLC coincides with the location of the most traumatized teeth or those commonly involved in cases of radicular cyst. Thus, presence of a non-vital or discolored tooth along with a radiolucency involving root apices in maxillary anterior segment should raise the suspicion of a radicular cyst also.[8,9]

2. Case Presentation

A 52-year-old male reported to the hospital with the chief complaint of painless swelling on the right side of face since last three years. This was also accompanied by pus discharge from the nose intermittently (especially during winter season). No trauma or relevant medical history was reported.

On extraoral examination, a diffuse swelling measuring approximately 3cm (superoinferiorly) x 2cm (mediolaterally) was seen on right middle third of the face, obliterating nasolabial fold. It extended from infraorbital margin superiorly to a line joining ala of the nose and angle of the mandible inferiorly and from right ala of nose medially to a line passing through outer canthus of eye laterally [**Figure 1**A]. Overlying skin did not show any sign of erythema or ulceration. On palpation, it was mildly tender and soft to firm in consistency. Intraorally, a diffuse swelling was seen in the right maxillary anterior region extending from 11 to 13 region, obliterating the labial vestibule and elevating the right ala of nose. Overlying mucosa appeared pink in **color with bluish hue [Figure 1B]. On palpation, it was soft,** fluctuant, mobile, non-tender and showed a positive slip

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sign. The related teeth 11, 12 and 13 were all non-vital; 11 being discolored as well. Orthopantomogram (OPG) revealed a well-defined, circular, unilocular radiolucency involving root apices of 11, 12 and 13, approaching the infraorbital rim. A periapical lesion was suspected and the patient was scheduled for endodontic therapy. Cone beam Computed Tomography (CBCT) revealed a low density cystic lesion involving soft tissues in right maxillary anterior region. Saucerization of the buccal plate of maxilla was seen in the same region [**Figure 1**C]. It was also seen to cause elevation of the floor of nasal cavity and upper lip. A slight resorption of anterior nasal spine on the right side could also be noted. Bringing together the clinical characteristics with the radiographic images, a provisional diagnosis of NLC was made and surgical excision was planned. The possibility of radicular cyst extruding from beneath the nasal mucosa, on the buccal cortical plate, however, could not be ruled out.

Excisional biopsy was performed using an intraoral sublabial approach. Upper gingivobuccal sulcus was incised below the pyriform aperture and tissues were dissected until an entire, smooth, well circumscribed cystic lesion was exposed [**Figure 2**A]. The cyst was located in close proximity to the root apex, which created the dilemma of a periapical lesion. However, the cyst was entirely extraosseous and was seen to indent the buccal plate of maxilla causing superficial saucerization. The excised tissue was received for histopathological examination. On gross examination, a single soft tissue bit depicting a cystic wall was received measuring 3.0 x 3.0 x 0.2 cm in size. It was whitish brown in colour and firm in consistency [**Figure 2**B,C]. Histopathological examination revealed presence of stratified squamous epithelium, 6-20 cell layer thick, continuing into pseudostratified epithelium at areas. Goblet cells were also seen in the lining. Overlying connective tissue showed moderately dense collagen fibre bundles arranged parallel to the cystic lumen along with mild inflammatory cell infiltrate [**Figure 2**D-F]. Thus, correlating with clinical and radiographic findings, a final diagnosis of NLC was made.

However, patient reported again with an extraoral swelling in the same region, after a period of five months. This time, the swelling was larger in size and tender. Overlying skin showed mild erythema. The swelling extended from right upper lip (nasolabial region) to infraorbital region, causing reduced eye opening on the affected side. Reportedly, this swelling appeared and grew within the past one week and had been associated with moderate to severe continuous pain. Intraorally, obliteration of gingivobuccal sulcus was seen. Suspecting periapical cyst, the patient was referred for endodontic treatment. Profuse pus discharge was noted on access opening. Following root canal treatment, the swelling and pain gradually resolved.

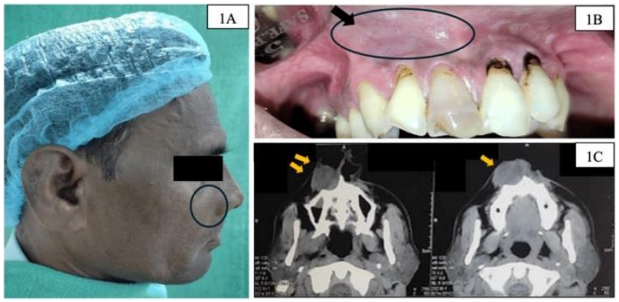

Figure 1: Extraoral, intraoral and radiological view; **A:** Photograph of patient showing diffuse swelling in right naso-alar region (marked with black arrow); **B:** Intraoral photograph showing obliteration of right labial vestibule and swelling with bluish pink hue (marked with black arrow); **C:** CT axial view showing extraosseous portion of cyst causing saucerization of buccal plate of maxilla (marked with yellow arrows)

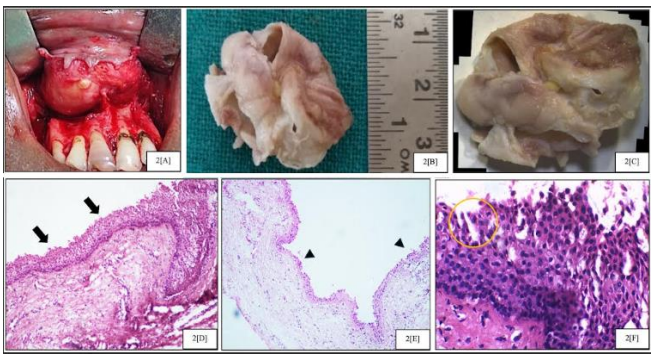

Figure 2: Surgical and histopathological view; **A:** Surgically exposed lesion in maxillary anterior region in the soft tissues above the apices of the anterior teeth; **B:** Gross specimen showing cystic wall white and brown in color; **C:** Stereomicroscopic view of the excised cyst wall; **D:** Cyst wall showing stratified squamous epithelial lining *(HE X100)* (marked with black arrow); **E:** Cystic lining composed of pseudostratified columnar epithelium *(HE X100)* (marked with black arrowhead); **F:** Presence of goblet cells in the epithelial lining *(HE X400)*.

3. Discussion

NLC is a benign, non-odontogenic soft tissue lesion that unveils as a cosmetic deformity on the face in almost all the cases. Presenting features primarily include slow growing swelling in the region of nasolabial fold. However, other symptoms like swelling in naso-alar region, lip, maxillary sinus and nostril obstruction have also been reported in 13.9%, 6.8%, 1.3% and 17.3% cases respectively.[2]

A higher predilection for females with male to female ratio of 1:3.6 is observed.[2] An age range of 30 to 50 years is seen in most of the cases,[6] though literature reports cases even in 8th decade of life.[7] This case showed a similar slow growing pattern but with the history of episodes of purulent discharge from nose.

Commonly, examination reveals a soft, fluctuant and non-tender swelling which is round in shape, mobile when

palpated between labial vestibule and mucosa of the nasal floor.[10]

Panoramic radiographs are of little importance when diagnosing NLC. CBCT imaging is preferred to obtain the correct dimensions and extension of the cyst.[11,12] NLC is typically recorded as a homogeneous, hypodense or hyperdense cystic lesion anterior to piriform aperture. Chinellato et al in 1984, emphasized the importance of occlusal radiographs in diagnosing NLC. [13] Most of the cases showed reversal of convexity of anterior and lateral edges of the floor of the nasal fossa and bone rarefaction in the affected area.[13]

Our case illustrated the common signs and symptoms seen in a patient with NLC but the presence of discoloured non vital teeth along with a periapical radiolucency was leading towards a periapical pathology. However, CT images (showing a well-defined expansile lesion in soft tissue) and histopathological images clearly defined NLC.

The chief histological finding under microscope is the presence of pseudostratified columnar epithelium along with stratified squamous epithelium. Also, most cases in literature report presence of more than one type of epithelium including combinations of pseudostratified, stratified squamous and cuboidal epithelium; with or without inflammatory changes of variable intensities. Considering the variability in epithelial lining in both the common odontogenic and non-odontogenic cysts, the question persisted whether these were two separate cysts persisting at the site or was it a radicular cyst from the beginning, which had either shown metaplastic changes or merged with the epithelium of the nasal floor.

Differential diagnosis of such lesions include a periapical lesion. Upper anterior teeth being the most common site, a radicular cyst involving non vital upper anterior teeth may be found extending peripherally into soft tissues. Histopathologically, one may find the presence of pseudostratified columnar epithelium and mucous cells in case of a radicular cyst showing metaplasia and prosoplasia respectively.[14] Due to inflammation, lining of radicular cyst may degenerate, followed by replacement with respiratory epithelium. While on the other hand, NLC may exhibit non keratinised stratified squamous epithelium along with inflammatory cells and cholesterol crystals in a number of cases.[15] Such cases pose a significant dilemma in diagnosis.

Other differential diagnosis would include Schwannoma which exhibits a soft, elastic subcutaneous solid mass. However, upper lip is a rare location and excision of such a lesion would show a yellowish jelly like mass. On the other hand, NLC on excision, would reveal mucoid or mucopurulent (if infected) fluid and a radicular cyst would show straw colored fluid.

An unusual intraoral epidermoid cyst in labial sulcus may also represent as a rubbery, sessile soft tissue swelling but such cysts are more common in childhood and an intraoral location would be a rare occurrence. Moreover, epidermoid cysts would present with yellowish discoloration on the surface. NLC or radicular cysts, on the other hand, are prevalent in young and middle aged adults and present with pink or pinkish blue hue on the mucosal surface as in our case.

This case highlights the challenges in diagnosing seemingly simple lesions even with clinical, radiological and histopathological evidence put together. Diagnostic dilemmas still do exist and make the practice of oral pathology intriguing and enigmatic.

4. Conclusion

NLC is an uncommon, asymptomatic, gradually progressing lesion which usually manifests after a duration of 2 to 3 years, till it becomes visibly apparent on the face. At the same time, this is a prevalent site for radicular cysts also. Clinically, cystic lesions in this area need to be crucially investigated, especially in cases involving perforation of the cortical plate of maxilla, which may either be due to pressure or due to odontogenic infection. Such cases lead to challenges in diagnosis.

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6. Conflicts of Interest

The authors declare no conflicts of interest.

References

1. Zhang J, Wu X, Ma J. A new transnasal approach of Nd: YAG laser treating nasolabial cysts. *Lasers Med Sci*. 2022;37(11):1321–4. 10.1007/s10103-021-03394-y
2. Sheikh AB, Chin OY, Fang CH, Liu JK, Baredes S, Eloy JA. Nasolabial cysts: A systematic review of 311 cases. Laryngoscope. 2016;126(1):60–6. doi: 10.1002/lary.25433.
3. el-Din K, el-Hamd AA. Nasolabial cyst: a report of eight cases and a review of the literature. *J Laryngol Otol.* 1999;113(8):747–9. doi: 10.1017/s0022215100145098.
4. Yuen HW, Julian CY, Samuel CL. Nasolabial cysts: clinical features, diagnosis, and treatment. *Br J Oral Maxillofac Surg*. 2007;45(4):293–7. doi: 10.1016/j.bjoms.2006.08.012
5. Klestadt W. Nasal cysts and the facial cleft cyst theory. *Ann Otol Rhinol Laryngol*. 1953;62(1):84–92. 10.1177/000348945306200108
6. Narain S. Nasolabial cyst: clinical presentation and differential diagnosis. *J Maxillofac Oral Surg*. 2015;14(1):7–10. 10.1007/s12663-011-0205-1
7. 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*. 2021;38(3):317–20. Doi: 10.1111/ger.12521
8. Shear M, Speight P. Nasolabial (Nasoalveolar) cyst. In: Shear M, Speight P, editors. Cysts of the oral and maxillofacial regions. Oxford, UK: Blackwell Munksgaard; 2007. p. 119-22. doi: 10.1002/9780470759769.ch10.
9. Martini EC, Coppla FM, Campagnoli EB, Bortoluzzi MC. Nasolabial Cyst Associated with Odontogenic Infection. *Case Rep Dent.* 2016:2016:8690593. doi: 10.1155/2016/8690593

10. Tanimoto K, Kakimoto N, Nishiyama H, Murakami S, Kishino M. MRI of nasoalveolar cyst: case report. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod*. 2005;99(2):221–4. Doi: 10.1016/j.tripleo.2004.08.002
11. Yerli H, Cabbarpur C, Aydin E: CT findings of a nasoalveolar cyst. *Br J Radiol*. 2009;82(976):e76-8. doi: 10.1259/bjr/24160007.
12. Kato H, Kanematsu M, Kusunoki Y, Harada H. Nasoalveolar cyst: imaging findings in three cases. *J Med Case Rep*. 2016;10(1):246. doi: 10.1186/s13256-016-1024-2
13. Chinellato LE, Damante JH: Contribution of radiographs to the diagnosis of naso-alveolar cyst. Oral Surg Oral Med Oral Pathol. 1984;58(6):729–35. doi: 10.1016/0030-4220(84)90044-6.
14. van Nuijs T, Jones P. Pseudostratified ciliated epithelium in a periapical cyst. *J Endod*. 1986;12(8):352-3. doi: 10.1016/S0099-2399(86)80037-1.
15. Rallan NS, Rallan M, Singh NN, Gadiputi S. Nasolabial cyst mimicking inflammatory cyst. *BMJ Case Rep*. 2013:2013009181. 10.1136/bcr-2013-009181

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