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Nasolabial Cyst: A Rare Cause of Nasal Obstruction—A Case Report

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Abstract

Nasolabial cysts are rare non-odontogenic, soft-tissue, developmental cysts typically found in the sublabial area and anterior maxillary region. These cysts present as slowly enlarging, asymptomatic, and non-painful swellings, often causing effacement of the nasolabial fold and occasionally nasal obstruction. The diagnosis is primarily clinical, with radiological findings being non-specific. However, computed tomography may provide further details. Surgical removal through a sublabial approach is the treatment of choice, confirming the diagnosis and preventing recurrence. This article reports a case of a nasolabial cyst with nasal obstruction, successfully treated by enucleation via the vestibular approach.

Subject Areas

Otorhinolaryngology

Keywords

Nasolabial Cyst, Non Odontogenic Cyst, Nasal Obstruction, Case Report

1. Introduction

Nasolabial cysts, also known as nasoalveolar cysts or Klestadt's tumors, are rare, benign, non-odontogenic soft tissue cysts located in the nasolabial fold. It is a submucosal and extraosseous lesion that accounts for approximately 0.6% of all jaw cysts, making it an uncommon clinical entity [1] [2].

First described by Zuckerkandl in 1882, nasolabial cysts predominantly occur in the third to fifth decades of life and exhibit a notable female predilection, being three to four times more common in women, particularly among Black women [2]. In 90% of cases, these cysts are unilateral, with bilateral presentations observed in only 10% [3].

The pathogenesis of nasolabial cysts remains uncertain, though Bruggemann's 1920 theory—suggesting their origin from remnants of epithelium in the anterior lower nasolacrimal duct—remains widely accepted. While developmental in nature, these cysts typically present in adulthood as painless, localized swellings with varying degrees of nasal obstruction. Given their characteristic location and presentation, diagnosis is almost exclusively clinical [3].

The aim of this article is to discuss the clinical and radiological presentation of the nasolabial cyst, as well as the therapeutic options, through the analysis of a clinical case.

2. Case Presentation

A 56-year-old woman consulted the dental treatment center in Casablanca for a right nasolabial swelling that had been evolving for a year, associated with unilateral nasal obstruction. The interrogation did not reveal any particular medical history.

Exobuccal examination showed facial asymmetry due to slight right nasolabial swelling with elevation of the right nostril and effacement of the nasolabial fold (**Figure 1**).

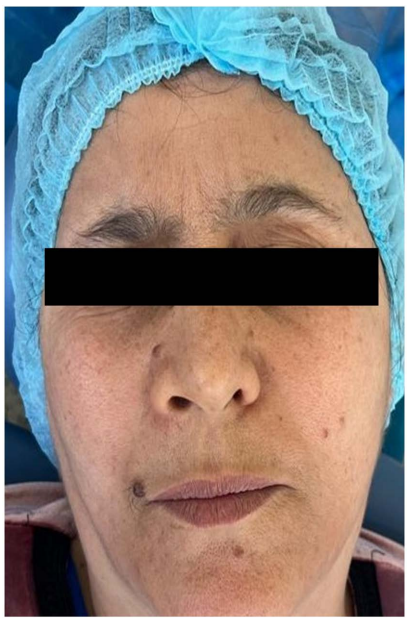

Figure 1. Extra oral view: an elevation of the right nostril.

Endobuccal clinical examination revealed a filling of the vestibular sulcus from 11 to 13, covered by mucosa with a normal appearance. On palpation, the mass was painless and mobile relative to the bony plane (**Figure 2**). Vitality tests were negative for 11 and 21 and positive for the other teeth.

Panoramic radiological examination did not reveal any cystic-like image (**Figure 3**).

Axial Computed tomography showed a well-defined oval mass that appeared

isodense to hypodense in the right nasal region. There is a slight mass effect on the maxilla, causing a slight scalloping without any bone destruction (Figure 4).

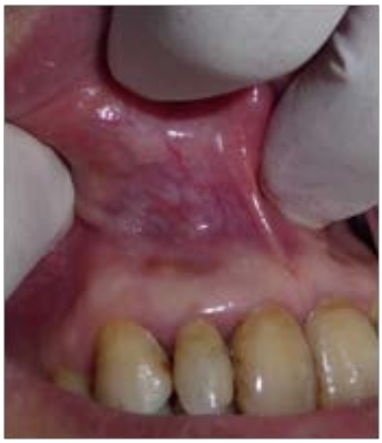

Figure 2. Intra-oral view: swelling of the vestibular area.

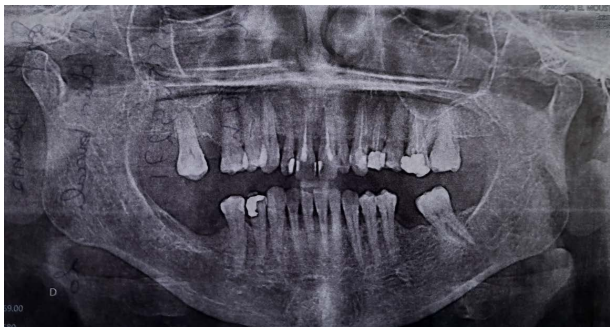

Figure 3. Radiological examination: No particularities, No cystic image.

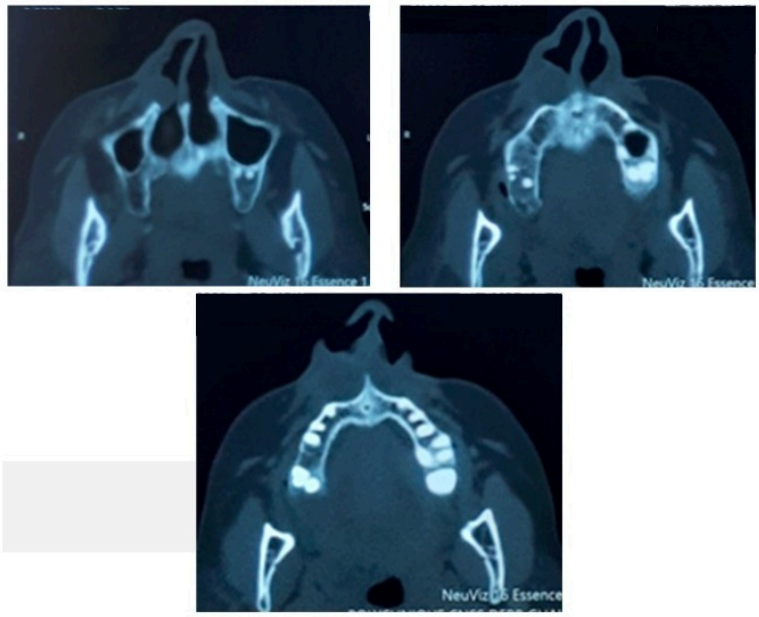

Figure 4. Axial Computed tomography: a well-defined oval mass in the right nasal region, without any bone destruction.

A final diagnosis of a unilateral nasolabial cyst was given based on the clinical and radiological findings.

The management of this patient consisted of surgical enucleation of the cyst under local anesthesia. A partial-thickness vestibular incision was made above the mucogingival line, followed by blunt dissection (Figure 5). Once the lesion was exposed (Figure 6), it was carefully cleaved and enucleated (Figure 7). Hemostasis was achieved, and the flap was repositioned and sutured with simple stitches.

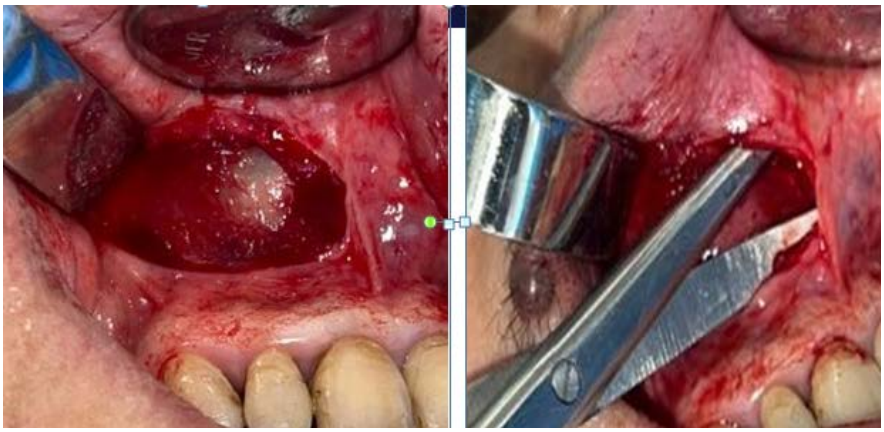

Figure 5. Vestibular incision and mucosal flap elevation.

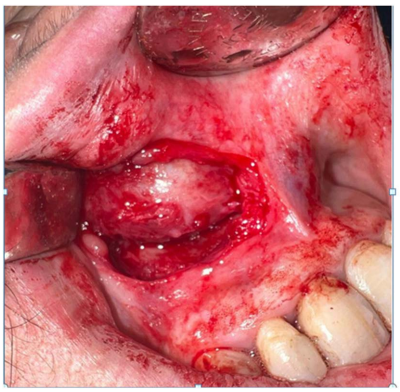

Figure 6. Exposure of the cystic lesion.

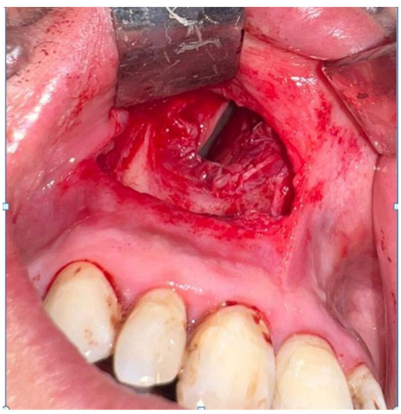

Figure 7. Enucleation of the cystic lesion.

Anatomopathological examination of the surgical specimen showed a fibrous cystic wall, lined by a regular thin squamous epithelium, containing numerous mucosecretory cells, confirming the non-odontogenic origin of the cyst.

The patient was seen 10 days after surgery for removal of the sutures. She remains well at 6-month follow-up.

3. Discussion

Nasolabial cysts are rare nonodontogenic soft-tissue lesions primarily located in the nasal vestibule, canine fossa, and sublabial region, with possible extension to the lower nasal meatus and the floor of the nasal cavity near the vestibule [4]. They account for approximately 0.6% of all maxillofacial cysts and only 2.5% of non-odontogenic maxillofacial cysts [5].

Their rarity is highlighted by large-scale studies: in an analysis of 8000 cystic lesions of the oral cavity over a 10-year period, Allard identified only seven cases of nasolabial cysts. Similarly, Kuriloff reported only 26 cases over 18 years [6]. These cysts are more common in Black women, with a sex ratio of 4:1, and they typically occur between the ages of 40 and 50 years [4] [6].

The etiopathogenesis of the nasolabial cyst remains a subject of complex debate, with various theories attempting to explain its origin and location. Bruggemann's theory (1920) is among the most widely accepted, proposing that the nasolabial cyst arises from epithelial remnants in the lower anterior part of the nasolacrimal duct. Another theory, Klestadt's theory (1913), suggests that the cyst forms due to the invagination of ectodermal debris between the nasal and medial processes, categorizing it as a fissural cyst [4] [5] [7]. Both theories agree that the nasolabial cyst is of developmental origin, although it typically does not present until adulthood, as observed in the case of our patient.

The clinical features of the nasolabial cyst are distinct and facilitate its diagnosis. In 1967, Bull *et al.* described the submucosal location of nasolabial cysts at the anterior nasal floor as a pathognomonic feature [3] [4]. From this position, the cyst can extend in three directions: towards the nasolabial fold, the buccal vestibule, or the nasal vestibule. This extension can lead to noticeable facial deformities, including the elevation of the nasal alae and the effacement of the nasolabial fold [4]. On palpation, a bidigital examination reveals a painless, soft or fluctuating lesion that evolves slowly, and remains mobile in relation to the bone plane [5] [6].

In more advanced stages, the growth of the cyst can cause partial or complete nasal obstruction, resulting from the elevation of the nasal floor and superior displacement of the anterior portion of the inferior turbinate [8]. These signs were observed in our patient, who presented with clinical features that are highly characteristic of a nasolabial cyst.

Classically, radiological examination using a panoramic view does not reveal nasolabial cysts unless they cause significant maxillary bone erosion [5] [9].

However, Seward described two potential radiographic features: increased

radiolucency adjacent to the apical region of the incisors and deformation of the radiopaque line corresponding to the inferior border of the piriform aperture [9]. In the case of our patient, no radiographic signs were observed, which aligns with the majority of authors.

Computed tomography (CT) and magnetic resonance imaging (MRI) provide a more detailed and reliable assessment of the cystic nature of the lesion, its relationship with the nasal wings and maxillary bone, and the presence or absence of bony involvement [5] [10]. These advanced imaging techniques were instrumental in diagnosing the nasolabial cyst in our patient.

Nasolabial cysts must be differentiated from soft tissue lesions such as salivary duct cysts and dermoid cysts, as well as jawbone lesions like periapical and dentigerous cysts, which primarily affect surrounding tissues only after cortical perforation. The extraosseous location of nasolabial cysts simplifies the differential diagnosis. However, the most relevant differential diagnosis is a dentoalveolar abscess, which can be easily ruled out by testing the vitality of the affected teeth [4] [5] [7].

Histopathological examination is required to confirm the diagnosis. It reveals respiratory epithelium and ciliated pseudostratified columnar with goblet cells [4] [9] [11].

The most effective treatment for nasolabial cysts is complete enucleation via a vestibular approach. This method aims to prevent infection, establish a histopathological diagnosis, and improve the facial deformity caused by the cyst. Intraoperative nasal mucosal perforation, though a common complication, can be sutured or left to heal spontaneously if small [4] [9] [10]. Fortunately, such complications were not observed in our case.

Other treatments, such as endoscopic excision, marsupialization, surgical excision, incision and drainage, injection of sclerotic agents, simple aspiration, and cauterization, may be used. However, they are associated with higher recurrence rates [5].

4. Conclusion

Nasolabial cysts, even though rare, should attract the attention of dental practitioners and oral surgeons. Diagnosis is made clinically and confirmed histopathologically. Complete enucleation is the treatment of choice, with a low recurrence rate when performed correctly.

Conflicts of Interest

The authors declare no conflicts of interest.

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