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Management of Infected Klestadt's Cyst in the Left Maxillary Region - A Case Report

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Abstract: ***Nasolabial cysts are rare, non-odontogenic soft tissue lesions occurring beneath the nasal alar region. They account for approximately 0.7% of all maxillofacial cysts and 2.5% of non-odontogenic cysts [3,6]. Infection is an uncommon complication but can alter the clinical presentation by introducing pain, tenderness, and discharge. This report presents a case of a 38-year-old female with an infected nasolabial cyst in the left maxilla, highlighting clinical presentation, imaging findings, surgical management, and histopathological correlation. Complete excision was performed via a sublabial approach, and the patient remained recurrence-free after one year of follow-up.***

Keywords: Nasolabial cyst, Klestadt's cyst, non-odontogenic cyst, sublabial excision

1. Introduction

Nasolabial cysts were first described by Zuckerkandl in 1821 and later studied by Klestadt in 1953, after whom the lesion was named [1,4]. Rao introduced the term "nasolabial," which is now preferred over "nasoalveolar" [1]. These cysts are developmental in origin, arising from epithelial remnants trapped during facial process fusion or from persistent nasolacrimal duct epithelium [1,7,8].

Clinically, nasolabial cysts present as unilateral swellings in the nasolabial area, causing elevation of the nasal bridge and upper lip projection. They are typically slow-growing and asymptomatic unless infected [4].

2. Case Report

A 38-year-old female presented with a swelling in the left upper maxilla, which had initially been small but gradually increased in size. Clinical examination revealed a soft, 2.5 × 2.5 cm swelling extending from the 21 to 24 region, with normal overlying mucosa. The lesion was noted to be recurrent in nature, associated with mild pain and intermittent discharge, and aspiration yielded purulent material, confirming the presence of an infected cyst.

CT paranasal sinus imaging demonstrated a well-circumscribed, rounded soft tissue swelling in the left alar nasal region measuring 2.9 × 2.6 × 2.8 cm, bulging into the nasal cavity without maxillary bone involvement, suggestive of a nasolabial cyst.

Surgical excision was performed via a sublabial incision. The lesion was removed intact and sent for histopathological examination, which revealed multilayered pseudostratified epithelium with focal snouting and apocrine changes. Clinical, radiographic, and histopathological findings confirmed the diagnosis of a nasolabial cyst. The patient was followed up for one year, with no recurrence reported.

3. Discussion

Nasolabial cysts are rare, non-odontogenic, soft tissue cysts that typically present as painless swellings in the nasolabial region, often causing obliteration of the nasolabial fold and facial asymmetry. They are usually slow-growing and lined by respiratory epithelium, with infection being an uncommon complication.

In the present case, the lesion was recurrent and aspiration revealed purulent material, indicating secondary infection. Infection can alter the clinical presentation by introducing pain, tenderness, or discharge, and may mimic odontogenic cysts or other inflammatory lesions, thereby complicating diagnosis. Histopathology remains the gold standard for confirmation, demonstrating cystic lining with inflammatory changes in infected cases.

Surgical excision via a sublabial approach is considered the treatment of choice, ensuring complete removal of the cyst wall to prevent recurrence. Infected cysts, as in this case, highlight the importance of timely intervention and thorough excision, as incomplete removal or delayed management may predispose to repeated episodes of infection and recurrence.

Pathogenesis

Two main theories explain nasolabial cyst development:

- Inclusion of epithelial cells during fusion of facial processes.
- Persistence of nasolacrimal duct epithelium [1].

Trauma has also been suggested as a contributing factor [7,8].

Incidence

Nasolabial cysts are rare, accounting for 0.7% of all maxillofacial cysts and 2.5% of non-odontogenic cysts. They are unilateral in 90% of cases and bilateral in 10% [6].

Clinical Features

Lesions may cause facial deformity by expanding anteriorly or into the pyriform aperture. They can extend into the gingivolabial sulcus or facial soft tissue, leading to upper lip

swelling, obliteration of the nasolabial fold, and elevation of the nasal floor [7]. Pain is uncommon unless secondary infection occurs [7,8].

Diagnosis

Diagnosis is based on clinical features, bimanual palpation, and imaging. CT provides accurate lesion dimensions. Differential diagnoses include periapical abscess, dentigerous cyst, nasal furuncle, dermoid cyst, and epidermoid cyst [6,7].

4. Treatment

Several modalities have been described for the management of nasolabial cysts, including endoscopic marsupialization, surgical excision, incision and drainage, injection of sclerotic agents, simple aspiration, and cauterization. However, except for endoscopic marsupialization and complete surgical excision, most of these techniques are associated with a high recurrence rate [6].

The primary indications for surgery are to establish a definitive diagnosis, prevent secondary infection, and correct cosmetic deformity. The most commonly employed technique is intraoral enucleation via a sublabial incision in the upper buccal sulcus under local anesthesia. This approach provides a wide surgical field, facilitates complete excision, and minimizes the risk of tearing the nasal mucosa or entering the maxillary sinus.

Another surgical option is the Neumann incision, which is particularly advantageous for large cysts, as it allows complete excision and provides optimal access to the pyriform aperture. In 1999, Su et al. described endoscopic transnasal marsupialization, an effective and simple alternative [5]. This approach is especially useful for large lesions extending to the nasal floor, where the conventional sublabial approach carries a higher risk of perforation. The endoscopic technique offers several advantages, including the creation of a wide opening for ventilation and drainage, reduced recurrence rates, shorter operating time compared to translabial enucleation, feasibility under local anesthesia in an outpatient setting, and less postoperative facial edema and pain [7].

In cases where the cyst is infected and cannot be excised completely, cryotherapy may be employed. A cryoprobe applied for 60 seconds at –30 to –40 °C causes tissue destruction through freezing, targeting residual cystic wall remnants [8]. Other treatment options such as injection of sclerotic substances, marsupialization, and simple aspiration have been reported, but they are less reliable due to higher recurrence rates.

The goal of treatment is complete excision, which prevents recurrence, establishes histopathological diagnosis, and corrects cosmetic deformity. Care must be taken to avoid rupture of the cyst, and it should be removed intact. Because of its close relationship to the nasal floor, perforation of the nasal mucosa may occur during removal. Small perforations can be left untreated, whereas larger ones require suturing [10].

Follow-up

In the present case, the patient was followed up for one year postoperatively, with no recurrence observed.

5. Conclusion

Nasolabial cysts are uncommon developmental lesions that usually present as painless swellings with cosmetic deformity. Infection, though rare, can modify the clinical picture by introducing pain, tenderness, and discharge, as observed in the present case. Accurate diagnosis requires correlation of clinical findings, imaging, and histopathology. Complete surgical excision via the intraoral sublabial approach remains the gold standard, ensuring intact removal of the cyst wall and minimizing recurrence. Infected cysts highlight the importance of early intervention, as timely excision not only establishes definitive diagnosis but also alleviates symptoms, restores facial aesthetics, and prevents repeated episodes of infection. This case underscores the need for awareness of atypical presentations and reinforces the role of thorough surgical management in achieving optimal patient outcomes.

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Figures

Figure 1: Extraoral photograph depicting obliteration of the left nasolabial fold

Figure 2: Aspiration revealing sero-sanguinous fluid with purulent content, indicating an infected cyst

Figure 3: CT axial section showing a well-defined cystic lesion in the left maxillary region

Figure 4: Surgical exposure of the cyst through a sublabial approach

Figure 5: Lesion excised in toto

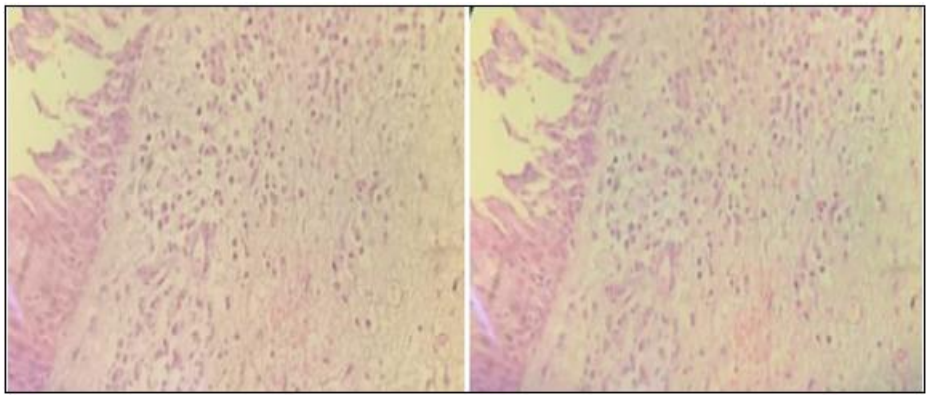

Figure 6: Microscopic view of the excised specimen on histopathological examination