Journal of Otolaryngology and Neurotology Research
JONR, 3(1): 68-72
www.scitcentral.com

ISSN: 2641-6956

Case Report: Open Access

A Case Report on Nasolabial Cyst: Diagnosis and Management in Limited-Resources Settings

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Received May 22, 2019; Accepted May 23, 2019; Published March 25, 2020

ABSTRACT

Introduction: The nasolabial cyst is a rare non-odontogenic, soft-tissue characterized by its extra osseous location in the nasal alar region. Published African data of this condition are not easily available and according to the literature, most patients affected are women. The patient presenting this condition is a boy born and living in the Democratic Republic of Congo. Its pathogenesis remains uncertain. The diagnosis is essentially based on clinical findings. Bimanual palpation and imaging findings help to confirm the diagnostic.

Symptoms and clinical findings: This publication reports a case of an 18 year old boy with an 11 months' history of a non-painful swelling of the left nasolabial region which has progressively increased in size and caused facial deformity without facial numbness. Physical extra oral examination revealed on the left nasal ala a mass soft, fluctuant, well circumscribed, non-tender and mobile.

Diagnostic: The clinical presentation suggested a nasolabial cyst. The patient underwent a nasal marsupialisation under local anesthesia via the sub labial approach. The diagnostic of the nasolabial cyst was confirmed by histopathology.

Conclusion: Despite the rarity of published data of nasolabial cyst from the African region, the disease exists and every clinician should recognize the clinical characteristics of this lesion. The cure of this cyst can be obtained definitely in poor settings by nasal marsupialisation under local anesthesia which requires minimal equipment. The objective of this paper is to review the literature, discuss the epidemiology, the diagnosis and the management of this condition in poor settings.

Keywords: Nasolabial cyst, Non-odontogenic cyst, Transnasal marsupialization

Abbreviations: CT: Computerized Tomography; MRI: Magnetic Resonance Imaging; ENT: Ear, Nose and Throat

INTRODUCTION

The nasolabial cyst is an uncommon non-odontogenic masses that originate from maxillofacial soft-tissue in the nasal alar region. The first documentation of nasolabial cyst was done by Zuckerkandl in 1882 [1].

According to recent reviews on this condition, the nasolabial cyst is rarely diagnosed in Western countries but may be more frequent in other regions, e.g. Eastern Asia [2]. African statistics including Congolese's are not available.

The age of detection ranges from 12 to 75 years old; the nasolabial cysts predominantly affect people aged between 12 to 75; however, a peak incidence has been noted in the fourth and fifth decades of life, with a female predilection of

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Citation: Kikuhe N, Safari S, Claude MS, Kakande E & Namwagala J. (2020) A Case Report on Nasolabial Cyst: Diagnosis and Management in Limited-Resources Settings. J Otolaryngol Neurotol Res, 3(1): 68-72.

nearly 3:1 [3]. Our patient is a young 18 years old boy who had a swelling contiguous to the nose with fullness in the canine fossa and the nasal floor. The swelling causes the deformity of the nasolabial sulcus and the elevation of the ala nasi on the left. The nasolabial cyst is a fluctuant mass best palpated bimanually. It is lined by pseudostratified ciliated or non-ciliated columnar epithelium with goblet cells. To diagnose this condition, the literature suggests, in addition to clinical findings, to do imaging such CT scan and MRI which are not often available in some area of Africa and if present, they are expensive. Many techniques of efficient surgical excision have been described in the literature such endoscopic approach but they are costly and are not available in many places of low-income countries.

In this report, we have described one the rare cases of nasolabial cyst published from Democratic Republic of Congo with its clinical features, diagnosis and treatment.

CASE REPORT

Patient information

The patient described in the present work has signed informed consent.

An 18 years old boy reported on November 2017 in ENT department of our hospital with an 11 months' history of a non-painful swelling of the left nasolabial region which has progressively increased in size and caused facial deformity without facial numbness. No congenital deformity was noted. No history of trauma and fractures were reported.

This clinical presentation has left the young boy living in anxiety because of the facial deformity and the fear of getting incurable cancer. School mates and friends have been laughing at him and some relatives have been said that someone cast to him a spell so he has become a curse in the family. For this reason, the parents took him to the traditional healer in order to chase away the spell and got purified, unfortunately without success.

Clinical findings

Physical extra oral examination revealed asymmetry of the face and the deformation of the left nasolabial sulcus and elevation of the ala nasi on the left side.

On examination, there is a mass 7 × 6 cm occupying the region between the left upper alveolar ridges to the inferior border of the left zygomatic arch. The mass is soft, fluctuant, well circumscribed, non-tender and mobile over the underlying structures. Unilateral elevation of the nasal ala to the left side is noted.

Physical intraoral examination showed no trismus, a smooth mucosal covered mass in the gingival labial sulcus is seen at the upper left side displacing the upper left canine tooth. The mass is rounded, non-tender not bleed in contact and clearly circumscribed. The hard palate is normal. No bulge of the soft palate is noted. The gloss alveolar sulcus is free. No pathology is seen in glosso-alveolar and gingiva-alveolar sulci.

Diagnostic assessment

The plain periapical radiograph showed no bone destruction and dental alteration. CT and MRI were not done due to unavailability in our hospital and financial constraints. After surgical excision, the specimen was sent for biopsy. Histological findings revealed ciliated pseudostratified columnar epithelium. The diagnosis of a nasolabial cyst was retained by the pathologist **(Figure 1)**.

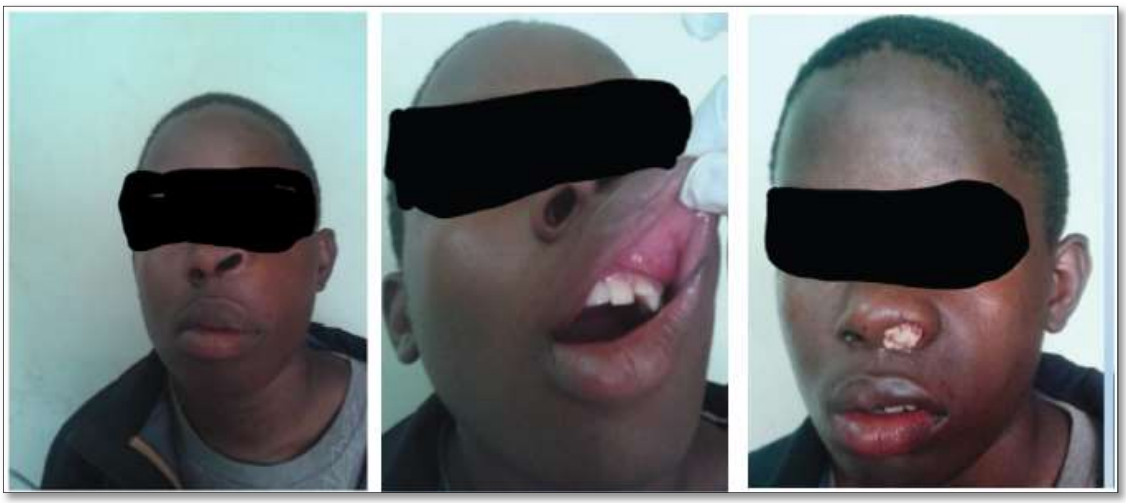

Figure 1. Before transnasal marsupialization.

After transnasal marsupialisation

Therapeutic intervention: A diagnosis of the nasolabial cyst was made and nasal marsupialisation excision via sub

labial approach under local anaesthesia was successfully done.

Follow-up and outcomes: No postoperative complications were seen and no lesion recurrence was noted after 12 months of follow up.

DISCUSSION

Nasolabial cyst in an uncommon lesion located near the alar cartilage extending into the superior nasolabial groove and the floor of the nasal vestibule. It is classified as a non-odontogenic, extra osseous cyst and is usually located in the area of the nasolabial sulcus, just below the ala nasi. It accounts for approximately 7% of maxillary cysts and is unilateral in 90% of cases and bilateral lesions have been reported in the literature. It represents about 0.7% of all cysts in the maxillofacial region and 2.5% of non-odontogenic cysts [2,3].

This case illustrates the classical clinical presentation of a nasolabial cyst. The clinical features described in many publications were observed in this case especially the effacement of the nasolabial sulcus and the elevation of the ala nasi. According to the literature some patients can be asymptomatic but most have at least one of the three following partial or complete nasal blockage, well-circumscribed swelling and local pain (all were found on our patient). Nevertheless, in order to appreciate the extension of the lesion and the bone erosion, CT scan and MRI were not done due to unavailability in our town and financial constraints. It was also difficult to compare our data to others because the published data about the same condition are not easily available.

Pathogenesis

The pathogenesis of nasolabial cysts is still uncertain. Two theories have been suggested to explain the origin of nasolabial cyst:

1. Klestadt in 1913 suggested that they arise from trapped epithelium at the point where the maxillary, medial nasal and lateral nasal processes fuse which become inclusion cyst (fissural cyst). However, a lack of evidence to support the idea of embryonic epithelial entrapment in this location prompted many researchers to discard this hypothesis.
2. Bruggeman in 1920 had suggested that nasolabial cysts develop from remnants of the embryonic nasolacrimal ducts (developmental cyst). This theory is supported by the fact that the nasolacrimal ducts are lined with pseudostratified columnar epithelium, which is the type of epithelium found in the nasolabial cyst cavity. Currently, it is the most widely accepted theory [4].

Diagnosis

Symptoms and signs: The nasolabial cyst is usually asymptomatic. The patient presents only when the cyst becomes infected or when it causes unilateral fullness in the nasolabial region. Patients initially noticed a fullness in the nasolabial region before it becomes symptomatic. Due to the particular presentation and location of these lesions, their diagnosis is almost exclusively clinical. The most common sign is enlargement causing facial asymmetry due to the displacement of the upper lip, with an elevation of the ala nasi and effacement of the nasolabial sulcus. Local pain, nasal obstruction, and concomitant infection which can lead to abrupt enlargement of the lesion may also be present. Occasionally in late presentation, it can present with nasal obstruction when it pushes on the inferior turbinate causing it to medialize [1-3].

On inspection, nasolabial cyst appears to be either normal pink or bluish in color. The cyst is best palpated bimanually with a finger in the floor of the nose and other in the labial sulcus. The cyst appears underneath the ala nasi as a painless fluctuant swelling extending laterally into the cheeks, often obliterating the nasolabial sulcus, and extending anteriorly into the lip and mucobuccal vestibule [2,3].

Imaging: Periapical radiographs, nasolabial cysts may present as a radiolucent area in the apical region of the maxillary incisors. Standard occlusal views show posterior displacement of the radiopaque line corresponding to the bony margins of the anterior nasal aperture.

In the absence of radiographic findings and when a more precise analysis of the borders of the lesion is required, CT SCAN is the imaging modality of choice. CT scans usually reveal a homogeneous, well-delimited cystic lesion in the lateral nasal region cystic lesion, with no contrast uptake. Larger lesions may be associated with bone remodeling of the underlying maxilla. CT is able to demonstrate soft tissue nature as well as bony involvement. As the cyst is benign there is no bony erosion other than expansible lesion causing thinning of the bone [5].

Ultrasonography does not offer much other than to reveal the cystic nature of these lesions, for example, well circumscribed, rounded or oval shapes and anechoic fluid-filled masses in the nasolabial sulcus region [5,6]. Magnetic Resonance Imaging (MRI) shows the characteristics of the fluid in T1 (low intense) and T2 (bright) views [2,5].

Histopathology

Histopathological examination reveals ciliated pseudostratified columnar epithelium and occasionally, stratified squamous epithelium. In a scanning electron microscopy study of the inner surface of nasolabial cysts, non-ciliated columnar epithelium with basal cells and goblet cells is found [3,4].

Differential diagnosis

Differential diagnosis of the nasolabial cyst includes:

a. **Odontogenic cyst:** It originates from tissues involved in tooth development. So careful examination will show evidence of non-vital tooth with radiolucency.

b. **Dentigerous cyst:** most common sites are mandibular third molar and maxillary third molar, large cysts tend to expand the outer plate (usually buccally).

c. **Dermoid or epidermoid cyst:** As opposed to the normal pink or bluish coloration of a nasolabial cyst, this cyst is yellow in color.

d. **Fibrous-osseous disease:** Painful, hard, bone is replaced by fibrous tissue [3,7].

TREATMENT

Treatment is aimed to prevent infection, to improve a cosmetic deformity and to establish a histopathological diagnosis.

The current treatment of nasolabial cyst is complete excision:

a. Surgical enucleation is easily achieved via a transoral sublabial approach.

b. Transnasal marsupialisation of the nasolabial cyst which opens into the nasal cavity has reported no recurrence of the cyst. It is the technique applied to our patient. It is 12 months since the excision was done no recurrence has been reported [8].

c. Recently, the alternative transnasal route was proposed by some authors: Endoscopic approach extends the nasal floor to the former cystic cavity and thus prepares an air-containing sinus. This technique appears to allow sufficient drainage of the new sinus and there were no signs of cyst recurrence [9-11].

d. Other modes of treatment that had been described are simple aspiration, injections with a sclerosing agent, destruction by cautery, needle aspiration and incision and drainage. However, these methods have been found associated with high recurrence rates [8,11].

CONCLUSION

From the literature and the present case, the diagnosis is based on clinical findings. Despite the rarity of the nasolabial cyst, the general practitioners, ENT specialists and dental practitioners should recognize the key features of these lesions in order to be able to distinguish them from the odontogenic origin and enable appropriate treatment. Therefore, a diagnostic hypothesis of nasolabial cyst should be based on clinical examination and imaging; and histopathology is necessary to confirm the diagnosis. CT and MRI are good to make a diagnosis but clinical examination can be enough to get a diagnosis of nasolabial cyst in poor settings. Once the diagnosis is established, the optimal treatment consists of complete excision using sophisticated equipment but nasal marsupialisation can guarantee good prognosis and rare recurrences.

DECLARATIONS

Ethics approval and consent to participate

Not applicable

Consent for publication

Written informed consent for publication of his clinical details and clinical images was obtained from the patient.

Availability of data and materials

The datasets used and analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no conflicts of interest.

Funding

This study received no financial support.

Acknowledgement

We are grateful to Dr. Jeef Mutambala, Mrs Namushukuru Yvette and Mbindule Eugénie for helpful advice regarding data collecting and assist in the preparation of the manuscript.

Author's contributions

1. **Nzanzu Kikuhe** collected the data and wrote the initial draft of the manuscript. He also performed the operation and collected the data.
2. **Sekabuhoro Safari** was involved in the preoperative and postoperative evaluation of the patient.
3. **Munyaneza Sekimonyo Claude** was involved in the preoperative and postoperative evaluation of the patient.
4. **Emily Kakande** contributed to analysis and interpretation of the data.
5. **Justine Namwagala** reviewed the final manuscript.

All of the authors contributed to drafting and critically revising the paper and gave final approval of the version to be published.

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