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Nasolabial Cyst: A Sporadic Disease Entity

By Delwar AHM

Abstract- *Background:* The formation of the maxilla is associated with the fusion of different types of embryological elements. If any primitive ectodermal cells buried in the embryonic fusion, there is a formation of a cyst. Nasolabial or nasoalveolar cyst is one of them. It is a rare and non-odontogenic, soft tissue origin occurs beneath the alar nasal.

Methods: It is a cohort retrospective study of 09 cases in the Department of Otolaryngology and Head-Neck Surgery, Cumilla Medical College, and Cumilla Medical Centre, Bangladesh, from 01 July 2016 to 31 June 2019.

Result: Incidence of the nasolabial cyst, out of total routine ENT operations was 0.13%. Of them, the female was 07(77.78%), the male 02(22.22%), 10-30 years were 02(22.22%), 31-50 years 05(55.56%), and 51 years and above 02(22.22%) in which lower age was 20 years, highest 55, mean 40.78, and the standard deviation 6.43. The laterality exhibited only unilateral, in which the right side was 06(66.67%) and left 03(33.33%).

Keywords: *nasolabial, nasoalveolar, cyst, FNAC (fine needle aspiration cytology), OPG (orthopantomogram), CT (computed tomography), MRI (magnetic resonance imaging).*

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Conclusion: As a developmental origin, it needs excision of the cyst before the occurrence of any complications.

Keywords: nasolabial, nasoalveolar, cyst, FNAC (fine needle aspiration cytology), OPG (orthopantomogram), CT (computed tomography), MRI (magnetic resonance imaging).

I. Introduction

A cyst may be defined as a closed sac or pouch with a definitive wall that contains fluid, semisolid, or solid. It is an abnormal structure resulting from developmental anomalies, obstruction of duct or parasitic infection. As a jaw cyst, sometimes it is called as nasoalveolar cyst. But it is strictly non-odontogenic and occurs outside the bone. As the alveolar isn't involved, the nasolabial is preferable to the nasoalveolar cyst [1]. It originates from the soft tissue of the maxillofacial region in the lateral half of the nasal floor, anterior to the inferior turbinate [2]. The cyst associated with maxilla, may be separated into a medial and a lateral group in which the nasolabial is in lateral group [3] (Figure-1). They enlarge to splay the nostril and cause of fullness of the upper lip [4]. Zuckerkandl first described the nasolabial cyst in 1882, supported by the Allard RHB in 1982 [5]. From that time, it reported as two theories about the developmental anomalies of the cyst. One kept that it is due to the persistence of embryonic nasolacrimal duct, and the other is embryonic fissured cyst [6] [7]. In 1953, Klestadt WD postulated that the lesion is a fissured cyst, accepted by most of all researchers. It develops from the pitfall of embryonic nasal tissue, which caught in the facial cleft and formed by amalgamating of the maxillary, medial, and lateral nasal process [8]. After that, all scientists classified the maxillary jaw cyst on the basis of Klestadt theory [9]. Due to development from nasal mucosa, they line by columnar (respiratory) epithelium but may show metaplasia to the squamous epithelium in the presence of infection as because of facial cellulitis [10]. The frequency of age was a peak in the fourth and fifth decade [11]. Gender epidemiology shows female preponderance in all studies [12]. In some cases, the patient faces difficulties following catchable of an upper denture and incidentally the cyst diagnosed. Sometime the patient may present with a huge growth with facial deformity [13]. The most cases were unilateral, but a few cases presented with bilateral nasolabial cyst [14]. The cysts are fluctuant, and on bimanual palpation, fluctuation may elicit between the swelling on the floor of the nose and that in the lateral sulcus. The investigation includes confirming the diagnosis of the cyst is radiology, histology, CT, and MRI [15]. Except for the traditional method of sub-labial transoral approach of enucleation of the cyst, some surgeons tried to establish a new trans-nasal approach to endoscopic marsupialization of the nasolabial cyst [16].

The study finds out the relative incidence, presenting feature of the nasolabial cyst, and is discussing the advantages of the traditional and new method of surgical procedures for it.

II. Methods and Materials

It is a cohort retrospective study of 09 cases in the two tertiary care hospitals from 01 July 2016 to 31 June 2019. For three years period, 7099 routine ENT operations performed in which the nasolabial cyst was 09. All patients were clinically diagnosed as a nasolabial cyst, and confirmed by history, examination, and investigations such as FNAC, OPG, and CT scan

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whichever were needed. The following data collected about the patients: Gender, age, laterality, personal history, presenting feature, investigation, treatment, and complications. Statistical software SAS used to calculate all data.

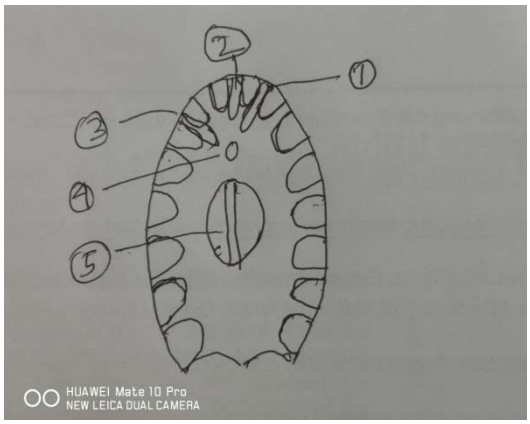


Figure-1: Cyst associated with fusion of Maxilla; 1. Nasolabial or nasoalveolar. 2. Median alveolar. 3. Lateral alveolar. 4. Nasopalatine. 5. Median palatine



Figure-2: Right nasolabial cyst in a female



Figure-3: Right nasolabial cyst in a male



Figure-4: Left nasolabial cyst in a female

III. Results

Incidence of the nasolabial cyst, out of total routine ENT operations, was 0.13% [Chart-1]. Of them, the female was 07(77.78%), the male 02(22.22%) [Figure-5], 10-30 years were 02(22.22%), 31-50 years 05(55.56%), and 51 years and above 02(22.22%) [Figure-5], the lowest age of patient was 20 years, highest 55, mean 47.78, and the standard deviation 6.43. Among them, all cases were unilateral (100%) in which right was 06(66.67%), and left 03(33.33%) [Figure-5]; Personal history exhibited diabetes mellitus was 02(22.22%), and non-diabetic 07(77.78%), hypertensive was 01(11.11%), and non-hypertensive 08(88.89%), betel leaf and nut chewer were 07(77.78%), and non-betel chewer 02(22.22%), the smoker was 03(33.33%), and non-smoker 06(66.67%) [Figure-6]; Presenting features revealed that unilateral facial swelling near the alar nasi was 08(88.89%), feeling of nasal blockage 05(55.56%), and painful facial swelling 01(11.11%) [Figure-6]; Investigations, FNAC, and OPG performed all cases 09(100%), and CT scan 02(22.22%) [Figure-7]; All cases treated surgically, enucleation of the cyst through sub-labial transoral approach under general anesthesia 07(77.78%), and local anesthesia 02(22.22%) [Figure-7]. About local anesthesia, I used a cotton swab soaked with 10-15% lidocaine spray with xylometazoline drop 0.1%, placing in the nasal fossa which shrinkage the turbinate, act as a local anesthetic, and at the same time, prevention of entry of blood to nasopharynx and mouth. I infiltrated Inj. Lignocaine 2% with adrenalin 1:200000 in the sub-labial, lateral nasal wall, and infraorbital area. Regarding follow-up, the patient came every week for three weeks and after three months. Post-operative complications found in 03(33.33%) patients in which 02(22.22%) presented with facial swelling, and 01(11.11%) numbness in upper incisor teeth up to three weeks [Figure-7]. After three months, they didn't show any complaint. The new trans-

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nasal approach to endoscopic marsupialization of the cyst didn't practice in our study.

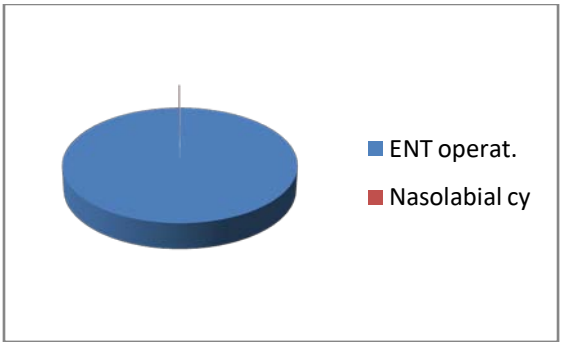


Chart-1: n-7099[ENT operation-7099; Nasolabial cyst-09(0.13%)]

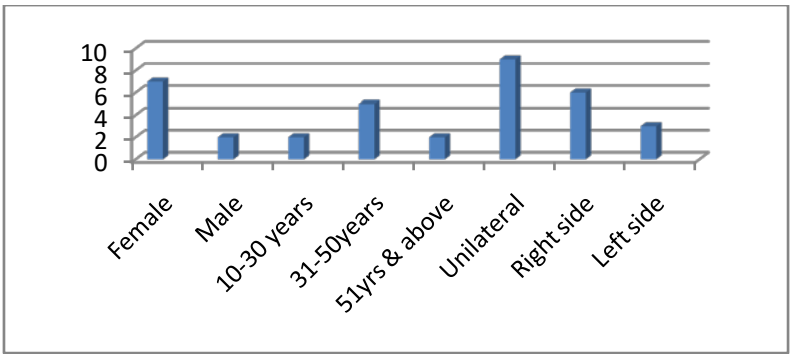


Figure-5: Gender, Age and Side distribution.[n-9; female-7(77.78%): male-2(22.22%):10-30yr-2(22.22%):31-50yr-5(55.56%):51 yr &above-2(22.22%): Right unilat-6(66.67%): left unilat-3(33.33%)]

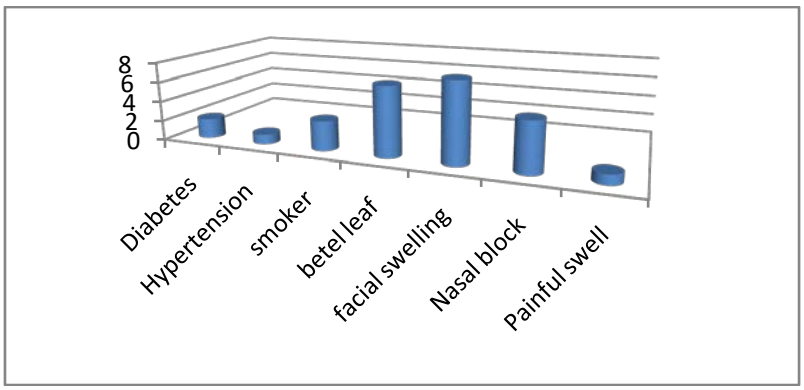


Figure-6: Personal history and Presenting feature. [n-9; Diabetes-2(22.22%): Hypertension-1(11.11%): Smoker-3(33.33%): Betel leaf-7(77.78%): Facial swelling-8(88.89%): Nasal blockage-5(55.56%): Painful facial swelling-1(11.11%)]

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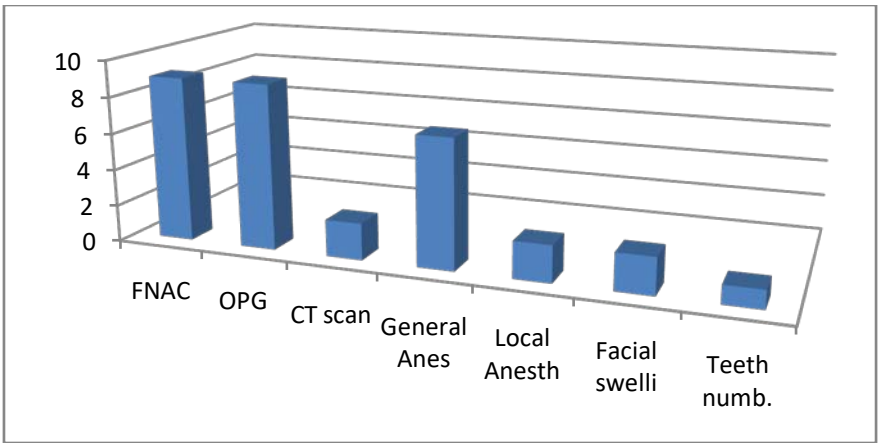


Figure-7: Investigations, Anesthesia and complications. [n-9; fnac-9(100%):opg-9(100%): ct-2(22.22%): general anesthesia-7(77.78%): local anesthesia-2(22.22%): facial swelling-2(22.22%): upper incisor numb.-1(11.11%)

IV. Discussion

The nasolabial cyst is a sporadic and rare lesion. Sher M et al. showed that only 21 examples recorded in the archives of the Department of Oral Pathology of the University of the Witwatersrand over 46 years [1]. Roed-Petersen B reviewed his presentations with only five cases [17]. Many articles were case reports only [18] [19]. All work held up the present series that only nine cases in two tertiary care hospitals for three years.

Considering gender epidemiology, the female was 07(77.78%) more than the male 02(22.22%) kept up my study by all other research. All the University of the Witwatersrand patients has been women [1]. Kuriloff DB, in 1987 reported 19 women and seven men in his study [10]. Vasconcelos RF et al. (1999) recorded that 13 out of 15 patients were women [12].

Regarding age, 31-50 years of age was more sufferer 05(55.56%), other 04, each 02(22.22%) were below 30 years and above 51 years. Sher M reported peak frequency in the fourth and fifth decades supported me series [1] and consistent with Walsh-Waring GP and Graamans K et al. Study [20] [21].

About laterality, bilateral were absent in the present study, right was 06(66.67%), and left 03(33.33%) compatible with Choi et al. reported unilateral case was 18 patients [2]. Roed-Petersen B displayed, among 116 patients, 13 was bilateral presentation against me [17]. Satu M et al. treated 20 patients from 1965 to 2014; only one patient showed bilateral [22].

Personal history revealed, diabetes was 02(22.22%), and hypertension 01(11.11%) in the current study supported by Vinayak KM et al. series exhibited a case report of 73 years [23], Sato M showed a case of 67 years suffered from diabetes and hypertension [22]. No other studies reported about smoking and betel leaf and nut chewer. It is important to know it before surgery and anesthesia. They may be suffered from post-operative and anesthetic complications and need more attention.

The traditional presenting symptoms showed unilateral facial swelling near alar nasal was 08(88.89%) in me report, persistence with Chinellato LEM et al. presented, 100% cases had facial swelling [24]. The feeling of the nasal blockage was 05(55.56%), supported by Vinayak KM and Rao RV study [23] [25]. They exhibited the development of swelling reached the wide dimension causing difficulty in using dentures, breathing obstruction, and facial asymmetry. 01(11.11%) of the patient presented with painful facial swelling, consistent with Sher M et al. observation, commented that an infected cyst is painful and may discharge into the nose [1].

About the investigation, I did FNAC and OPG for 100% cases, supported by Seward GR; reported radiology is usual investigation to distinguish the lesion from odontogenic or non-odontogenic [15]. FNAC is an minimum invasive procedure to know the cellular pattern of the swelling, is it malignant or benign. FNAC reported that there were goblet cells, ciliated cells, basal cells, and flat squamous cells, supported by Sher M et al. [1]. Radiology exhibited the area of the nasolabial cyst, produce radiolucency of the alveolar process above the apices of the incisor teeth. This radiolucency is due to depression of the labial surface of the maxilla due to the nasolabial cyst. CT scan did in 02(22.22%) cases, was above fifty years, supported by Choi et al. revealed the scan shows a well-demarcated, low-density lesion lateral to pyriform fossa [2]. MRI didn't do in any patient of the study, but Tanimoto K et al. Showed that MRI confirmed the lesion was extra-osseous, may have scalloping of the underlying bone [26]. Maximum patients have low income in our Government Hospitals. So always minimum costing was thinking in our mind.

Regarding treatment, it is important to know that nasolabial cysts are extra-osseous but subperiosteal, so I followed the traditional method of sub-labial transoral and enucleation of all cysts, held up by Nixdrop DR and

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Yen HW series [27] [28]. The post-operative complication in my study was 3(33.33%) like facial swelling and numbness, which was return to normal after three months of operation [29].

A new surgical method of trans-nasal approach to endoscopic marsupialization of the nasolabial cyst started a group of surgeons. Su CY in 1999 showed that all but except one in their 16 cases treated successfully [16]. Another surgeon Cho WC in 2008 presented 57 patients in which trans-nasal endoscopic marsupialization did 34, and the sub-labial excision 23 [11]. They experienced post-surgical complications in the sub-labial groups like hematoma, infection, and oroantral fistula supported by Bull TR et al. Series [30]. Post-surgical sequelae included in the sub-labial approach was toothache, swelling, and numbness in contrast to trans-nasal endoscopic marsupialization, one patient feeling an air-bubble like the sensation when she pressed over the previous site of cyst.

V. Conclusion

The nasolabial cyst is an uncommon and sporadic disease. There is a generalized agreement that it is embryological origin than producing symptom after birth it shows symptoms in middle age. Surgery is the option of treatment, may be done by the traditional sub-labial approach or new trans-nasal endoscopic marsupialization. A new approach needs more study to establish as a choice-able technique.

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Conflict of interest: No competing interest.

Ethical approval: The study was approved by Institutional Ethics Committee.

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