Original Article

Nasolabial cyst: Clinical presentation and surgical outcome of 14 cases with literature review

Gurung U, Tamang N, Tripathi P

Ganeshman Memorial Academy of ENT-Head and Neck Studies, Maharajgunj Medical Campus, Institute of Medicine, Kathmandu, Nepal.

Corresponding author: Dr Urmila Gurung

Email: dr.urmila.gurung@gmail.com

Abstract

Introduction: Nasolabial cyst is a rare, developmental, non-odontogenic cyst in the nasal alar region. The study aimed to assess the clinical characteristics, intra-operative findings, complications and recurrence following sublabial excision of nasolabial cyst and review the related literature.

Methods: It was a retrospective chart review of 14 cases of nasolabial cysts who underwent excision via sublabial approach in a tertiary center from December 2014 to May 2017**.** The data on clinical characteristics, intra-operative findings, complications and recurrence were assessed.

Results: Fourteen patients consisted of 9 females and 5 males. The age ranged from 22 to 73 years. Alar fullness was common presentation for all while 3 patients had associated pain. Two patients noted nasal obstruction. The cyst was located on left in 8 and on right side in 6 patients. The size ranged from 1.5 x1.5 to 4 x 4 cm^2. All patients had the cyst excised totally via sublabial approach. Post-operatively, 8 patients developed cheek swelling which subsided within 2 weeks. None of the patients had gingival or tooth numbness or wound gape. There was no recurrence noted in follow up ranging from 3 to 30 months.

Conclusions: Nasolabial cyst is a slow growing, unilateral cyst in the nasal alar region, common in female in the fourth and fifth decade. Sublabial excision is the standard treatment with no recurrence however it has risk of intra-operative rupture of cyst and complications like cheek swelling, bruising, facial pain, facial numbness, numbness of teeth or gingiva. Transnasal endoscopic marsupialization is a new treatment modality.

Keywords: Nasolabial cyst, rare, sublabial excision, transnasal endoscopic marsupialization

Introduction

Nasolabial cyst is a developmental, nonodontogenic cyst located in the nasal alar region.[1,2,3]It was initially described by Zuckerkandl in 1882 [4,6] and was investigated further by Klestadt in 1953 hence deriving the name Klestadt cyst. Rao later named it as nasolabial cyst in 1951 based on its location between the upper lip and nasal vestibule.[1] It does have other synonyms like nasoalveolar cyst, nasovestibular cyst, mucoid cyst, subalar cyst, mucoid cyst, maxillary cyst, nasoglobular cyst.[1]

Nasolabial cyst is considered rare affecting 1.6 per 100,000 persons per year [6] and accounts for 0.3% -0.7% of maxillary and mandibular cyst. [5,7]It usually affects females (4:1) of African American origin in the fourth and fifth decade of life.[1,6] It is unilateral in90% with left side involvement being more predominant.[1,6,8]

The cyst usually presents as painless, slowly growing, swelling in the nasolabial fold causing elevation of the ala of nose and upper lip. [2,3,4] It is basically diagnosed clinically but CT scan and MRI help in assessing the extent and relation of lesion to the surrounding

structure.[1,3] Excision of the cyst via sublabial approach is the standard treatment .[2,4,6,7]

The aim of the study was to assess the clinical characteristics, intra-operative findings, complications and recurrence following sublabial excision of nasolabial cyst and also review the related literature.

Methods

It was a retrospective study carried out in Ganesh Man Singh Memorial Academy of ENT- Head & Neck Studies, Tribhuvan University Teaching Hospital, Kathmandu, Nepal. Fourteen patients with clinical diagnosis of nasolabial cyst who underwent sublabial excision of the cyst between December 2014 to May 2017were included in the study. The medical records of these patients were assessed with regards to patient demographics, clinical features and their duration, surgical treatment, complications and recurrence in out-patient follow up. For those who failed to attend hospital for follow up were contacted by telephone to ask for recurrence of the cyst. The data was entered in Microsoft excel for analysis. Literature was reviewed for similar studies and newer treatment modalities.

Results

There were a total of 14 patients comprising of 9 females and 5 males. The age ranged from 22 to 73 years, with the mean age being 38. All of the patients presented with alar fullness while 3 patients had associated pain. Two patients noted nasal obstruction of which one had partial and the other had total nasal obstruction. One patient had history of trauma prior to the onset of the cyst. The interval between onset of symptom to ENT consultation ranged from two months to three years.

The cyst was located on left side in 8 patients (57.14%) and on right side in 6 patients (42.86%). The size ranged from 1.5 x1.5 to 4 x 4 cm^2 (Table 1).

All fourteen patients had the cyst excised totally via sublabial approach. The cyst ruptured intra-operatively in 2 patients. With regard to post-operative complications, 8 patients developed cheek swelling which subsided within 2 weeks. None of the patients had gingival or tooth numbness nor wound gape. There was no recurrence noted in follow up ranging from 3 to 30 months (Table 2).

Table 1. Patient demographics and symptomatology.

Patient No.	Age	Sex	Duration of disease	Laterality	Nasal ala fullness	Nasal blockage	Pain
1	22	F	7 months	Right	Yes	No	No
2	23	M	1 year	Left	Yes	No	No
3	66	F	1 year	Right	Yes	No	Yes
4	30	M	2 months	Left	Yes	Partial	Yes
5	28	F	2 years	Left	Yes	No	No
6	23	F	1 years	Left	Yes	No	No
7	32	M	3 months	Left	Yes	No	No
8	24	M	8 months	Right	Yes	No	No
9	73	M	1 year	Left	Yes	No	No
10	44	F	1 year	Left	Yes	Yes	No
11	40	F	3 years	Right	Yes	No	No
12	50	F	3 years	Right	Yes	No	Yes
13	46	F	6 months	Right	Yes	No	No
14	36	F	2 months	Left	Yes	No	No

Table 2. Intra-operative findings, post-op complications and follow ups.

PatientNo.	Intraoperative findings			Post-op complications			Follow up	Recurrence
	Intra-op size (cm)	Intraop rupture of cyst	Excision in toto	Lip / cheek swelling	Gingival / tooth numbness	Wound gape		
1	3x2	No	Yes	No	No	No	2 ½ yr	No
2	3x3	No	Yes	Yes	No	No	2 ½ yr	No
3	1.5x1.5	No	Yes	No	No	No	2 ½ yr	No
4	4x5	No	Yes	No	No	No	2 ½ yr	No
5	3x3	Yes	Yes	No	No	No	2 1/2	No
6	4x3	No	Yes	Yes	No	No	2 yr	No
7	3x3	No	Yes	Yes	No	No	2 yrs	No
8	3x2	No	Yes	No	No	No	1 ½ yr	No
9	3x3	No	Yes	Yes	No	No	1 yr	No
10	2x2	No	Yes	Yes	No	No	8 months	No
11	4x4	No	Yes	Yes	No	No	6 months	No
12	2x0.5	No	Yes	No	No	No	6 months	No
13	2x2	No	Yes	Yes	No	No	3 months	No
14	3x4	Yes	Yes	Yes	No	No	3 months	No

Discussion

The pathogenesis of nasolabial cyst is not exactly known. However, there are three theories. The first theory presumed it to arise from inflamed mucus glands. Klestadt proposed the second theory which stated that these cysts originate from embryonic epithelium entrapped in the developmental fissures between the lateral nasal and maxillary processes hence the nomenclature fissural cyst. Bruggemann's most accepted theory describes it to be remnants of the lower anterior part of the nasolacrimal duct.[1,7,8] This theory is reinforced by the fact that it shares the same pseudostratified columnar epithelium like the nasolacrimal duct. [1,5]

Although it is considered rare worldwide, case series of 18 patients in 5 years by Yuen et al and 57 patients in 8 years by Chao et al [5] gives the impression of it being commonly diagnosed in Asians. Our case series of 14 patients treated in the same institute over 2 ½ years supports this observation.

All the patients in our case series presented with unilateral alar fullness predominantly on the left side with females being more affected than males. This is in accordance to the literature indicating 4:1 female male ratio with 90% unilaterality, commonly on the left side.[1,6,8] The time interval between the onset of symptom to presentation ranged from 2 months to 3 years. Late presentation could be due to the slow growing, painless nature of the lesion. The lesion may at times become painful due to infection as it lies close to the nasal cavity and teeth.[6]Consultation is sought mostly due to nasal blockage, cosmesis and infection.[1] In our case series, all 14 patients presented with alar fullness, amongst which 3 had pain as well. Two patients noted nasal obstruction of which one had partial and the other had total nasal obstruction.

It is diagnosed clinically with bidigital palpation revealing a cystic swelling between the nasal vestibule floor and gingivolabial sulcus.Nevertheless, radiological investigation like computed tomography (CT) and magnetic resonance Imaging (MRI) may be useful in diagnosis and determination of surgical approach.[5,6] CT scan shows a homogenous, cystic lesion anterior to the pyriform aperture with no bony erosion typically.[5] Remodelling of the underlying bone however can be seen in larger cysts.[7] Its MRI characteristics includes homogeneous intermediate intensity T1 signals and homogeneous high intensity T2 signals.[7]

Differentials for nasolabial cyst include odontogenic and non-odontogenic lesions in the anterior maxilla and nasal ala like radicular cyst, nasopalatine duct cyst, dentigerous cyst, epidermoid cyst, schwannoma, neurofibroma.[3,4]Odontogenic cysts are intraosseous while nasolabial cysts are extraosseous.[5]

Surgical excision via sublabial approach is the standard treatment of choice. [2,4,6,7]Intra-operatively, there is a risk of rupturing of the cyst due to its adherence to the nasal floor mucosa hence requiring excision of a part of nasal floor mucosa with the cyst.[2] The cyst ruptured intra-operatively in 2 out of the 14 cases in our study. Complications like cheek swelling, bruising, facial pain, facial numbness, numbness of teeth or gingiva, oroantral fistula can occur in this approach[2,4,5] To avoid risk of sensory damage and fistula, an alternative incision, Neumann incision used by endodontist for alveoloplasties has been recommended by Urraca MP.[4] In our study, 8 patients developed cheek swelling which subsided within 2 weeks. No other complications were encountered.

Su et al in 1999 described a new technique of transnasal marsupialization of the nasolabial cyst.[9] Lee et al prospectively compared the outcome of conventional excision via sublabial approach with transnasal marsupialization of nasolabial cyst in 20 patients in 2009. The transnasal marsupialization was microdebrider assisted using nasal endoscope under local anesthetic in outpatient clinic. This group had shorter operating time, less post operative pain, less hospital stays and less complication rates as compared to the sublabial excision group hence it was considered a better option from the two. There was no recurrence noted in both the groups in 1 year follow up.[2] Similar inference was drawn by Chao W et al who retrospectively analyzed of 57 patients who underwent transnasal endoscopic marsupialization and sublabial excision of the nasolabial cyst. [5]

The outcome of marsupialized nasolabial cyst is an air-containing sinus with persistent opening at the anterior or anterolateral nasal floor as noted by Su et al endoscopically and radiologically.[9] The key to avoidance of recurrence in transnasal marsupialization of the cyst is to make a wide opening hence avoiding mucus collection in the pocket.[2] This procedure has been recommended in large cyst with significant protrusion into the nasal cavity.[5]

Conclusion

Nasolabial cyst is a slow growing, unilateral cyst in the nasal alar region, common in female in the fourth and fifth decade. Sublabial excision is the standard treatment with no recurrence however has risk of intra-operative rupture of cyst and complications like cheek swelling, bruising, facial pain, facial numbness, numbness of teeth or gingiva. Transnasal endoscopic marsupialization is a new treatment modality.

Conflict of interest: None declared.

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