

# Conventional Nasolabial Cyst Excision with Endoscopic Assistance

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## ABSTRACT

**Introduction:** nasolabial cyst is an uncommon condition. Diagnosis of this condition is purely based on its clinical presentation. It is a slow growing, benign swelling of gradual onset which can cause pressure induced osteolytic changes. Hence imaging helps in management. Out of different treatment modalities, sublabial approach is still a good approach for treatment. Nasal endoscope assistance in sublabial approach helps in proper visualization of dissecting margins. Aim of our study was to present clinical profile, its management with conventional and also assisted with nasal endoscope

**Material and methods:** 4 cases were selected by simple random sampling and clinically diagnosed as nasolabial cyst. These cases presented to our tertiary centre ie. BYL Nair charitable hospital from July 2015- September 2018.

**Result:** female predominance was seen more in adult age group with mean age of 40 years. Mean duration of appearance of swelling was 1.8 years. After clinico radiological confirmation of diagnosis the cases underwent sublabial surgical excision of cyst.

**Conclusion:** nasolabial cyst excision by sublabial approach with nasal endoscope assistance is our successfully used method. Using nasal endoscope in sublabial approach helps in improvising result of the technique.

**Keywords:** Nasal Endoscope, Nasolabial Cyst, Sublabial Approach.

## INTRODUCTION

Nasolabial cyst are non odontogenic cysts and have various nomenclatures like nasoalveolar cyst or Klesdath tumour.<sup>1</sup> It clinically presents as benign, slow growing, non-tender, soft swelling over anterior maxillary area. It is near to superior gingiobuccal sulcus, lateral to base of nasal ala along the nasolabial fold. It causes obliteration of nasolabial fissure, widening of nasal aperture, elevation of upper lip and ala of nose. In case of large size, it can obstruct the ipsilateral nasal air flow leading to sensation of nasal blockage. It is rare and having a 0.7% chance of occurrence in maxillary and mandibular cyst.<sup>2</sup> It is usually unilateral but can be seen bilateral in 10-11% cases in some literature.<sup>3,4,5</sup>

Etiology of nasolabial cyst according to some hypothesis states that it is an embryogenic origin remnant of nasolacrimal duct or the trapped epithelium at the fusion of maxillary, medial nasal, and lateral nasal processes. The former theory is more accepted as nasolabial cyst is lined by a pseudo-stratified epithelium similar to the lining of the nasolacrimal duct.<sup>4</sup> It can be triggered by trauma or surgical intervention like aspiration, drainage or by dental procedure.

Diagnosis is done on the basis of clinical presentation and radiological imaging like Computed tomography (CT) and MRI of PNS (Paranasal nasal sinuses). CT scan is more specific than MRI as it shows soft tissue involvement of bone which is rare in nasolabial cyst. Any doubt about the change in lesion consistency, Fine needle aspiration cytology (FNAC) will help in detection of malignant transformation which is rare but can be possible as shown in literature.<sup>6</sup>

Various modalities of treatment are frequently used i.e. excision of cyst through sublabial approach or newer procedures like endoscopic transnasal conventional, or microdebrider assisted cyst marsupialisation.<sup>7</sup> Post operative complications like hematoma or recurrence are rare with all these techniques.

Aim of our study was to present clinical profile, its management with conventional and also assisted with nasal endoscope (i.e. using 30<sup>0</sup> endoscope of 4mm diameter) through sublabial approach.

## MATERIAL AND METHODS

Hereby we are presenting 4 cases which are clinically diagnosed as a nasolabial cyst. Cases were selected by simple random sampling. Diagnosis of nasolabial cyst is essentially done by its clinical presentation as a long standing, painless and non-compressive history, bimanual palpation and its specific location at nasolabial fold. Cases included cystic swelling at nasolabial fissure. Cases which are firm to hard at nasolabial area like maxillary malignancy, periapical cyst, abscess or granuloma, extended sinonasal neoplastic or non-neoplastic lesion, facial cellulitis, periodontal abscess, dentigerous cyst, dermoid cyst were excluded. These cases presented to our ENT – OPD of our tertiary care hospital i.e. BYL Nair charitable Hospital from July 2015- September

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2018.

Surgery of nasolabial cyst excision was done and supervised by our senior authors. Surgical intervention was done by either of two methods viz. 1) conventional method and 2) combined method (endoscopic assisted conventional approach). We have done nasolabial cyst excision under general anaesthesia with locally infiltrated with 2% lignocaine with adrenaline. All surgical steps of incision and dissection were same for both the methods. In combined approach, we have used the 30° nasal endoscope of 4mm diameter through sublabial approach through dissecting plane to visualise the postero-superior margin of cyst. Combined approach helps in preventing rupture and recurrence of cyst.

Informed and willing consent for surgery was taken from each case. Following nasolabial cyst excision, patients were assessed every monthly till 6 month for evaluation of recurrence.

The data entered with appropriate statistical software. Microsoft office 2007 was used to make tables. Descriptive statistics like mean was used to interpret the data.

**RESULT**

Four cases randomly presented to ENT- OPD and were clinically diagnosed as nasolabial cyst. In our study, age of presentation of nasolabial cyst ranged from 30-50 years with an average of 40 years. Out of 4 cases of nasolabial cyst, there were 3 females (Table-1). The onset of the swelling to clinical presentation in ENT OPD was ranges from 8 months to 3 years, hence mean duration of presentation is 1.8year. None other than one patient had history of trauma to face due to assault.

**Clinico- Radiological Presentation**

Most of our cases, clinically presented with a slow growing swelling around GB sulcus, soft, cystic, fluctuant, non-tender and mobile. Due to large size of the swelling, there is elevation of floor of the nose with widening of ala and inferior turbinate medialisation simulating a unilateral nasal obstruction. Due to a large nasolabial cyst, ipsilateral nasolabial fold get obliterated (Fig-1) and causes facial asymmetry. Even though all cases were right handed, there were no side preference. Bimanual palpation, reveals a fluctuating swelling between the nasal vestibule and the gingivolabial sulcus, which helps to confirm the clinical diagnosis

All the patients were investigated with ultrasonography of local lesion. Due to long standing lesion, we proceeded with computed tomography of paranasal sinuses (PNS) in Fig: 2, 3 to evaluate lesion, soft tissue and involvement of bone. MRI PNS is important to know extension of lesion and soft tissue involvement in case of suspecting bony erosion.

A long standing lesion can give rise to pressure related erosion of maxillary bone (Fig: 2). FNAC is a helpful tool

in detection of benign or malignant cystic lesions. Hence after the course of antibiotics, we proceeded with FNAC



**Figure-1:** Right nasolabial cyst  
➔: Obliteration of right nasolabial fold, widening of ala, facial asymmetry



**Figure-2:** Coronal image of CT PNS: well defined, homogenous density, irregular soft tissue contour at right nasal ala abutting antero-inferior part of septum



**Figure-3:** Axial image of CT shows: soft tissue lesion involving right maxillary bone abutting and partial erosion

Total No	Male: Female	Right: Left	Traumatic: Non-Traumatic history
4	1:3	2:2	1:3

**Table-1:** Variable demographic distribution of cases

Surgical Method	No of nasolabial cyst	Rupture of cyst	Complete cyst excision along with cyst wall	Post-operative Average visual analogue Scale	Sequalae of approach	Follow up after 6 months
Conventional Approach	2	1	2	4	Localised numbness, swelling	No recurrence
Combined Approach	2	0	2	2	Localised numbness, swelling	No recurrence

**Table: 2- Surgical Approach**

under aseptic conditions. In most of our cases, the lining of the mucinous cyst was cuboidal or psuedostratified ciliated columnar epithelium. After clinic-radiologically confirmed diagnosis of nasolabial cyst, we proceeded with surgical excision.

### Surgical Approach

For the treatment of nasolabial cyst excision; we have used two methods viz. 1] Conventional method i.e. by a sublabial approach (Fig: 4) and 2] Combined method i.e. sublabial incision approach with the use of nasal endoscope of 30° and 4 mm diameter. We preferred the combined approach technique in lesions more than 2cm in either dimension detected on ultrasonography.

With routine sublabial dissection; one cyst got ruptured, even though the cystic wall was completely excised. In combined method, because of magnified endoscopic visualisation of cystic wall margins, complete cyst excision was possible with less chances of rupture. Although combined technique is comparatively time consuming but the advantage of use of endoscope gives a magnified view. In combined method, outcomes are better.

In our study, immediate post-operative sequelae was localised pain, which we had calibrated on visual analogue scale (VAS). On VAS from 0-10 where '0' is no pain and '10' is unbearable pain. On an average, traditional method has 4 scale and combined approach shows 2 scale i.e. less pain due to good visualisation and proper identification of hemostatic plane. We found all 4 cases (Table: 2) had ipsilateral localised numbness, mild local facial swelling which subsided spontaneously with cold application, anti-inflammatory, multivitamins supplement medication. Post-operative common complications like hematoma, secondary infection were not found. In follow up period of 6 months of

our series, there was no recurrence.

### DISCUSSION

Nasolabial cyst have various nomenclature like mucoid cyst, maxillary cyst, wind cyst, nasovestibular cyst, fissural cyst, subalar cyst and nasoglobular cyst; Thoma suggested nasoalveolar cyst, while Rio gave the name nasolabial cyst in 1951.<sup>8,9</sup> Klestadt investigated nasolabial cysts in depth, hence cyst was named as Klestadt cyst in his honor.<sup>10</sup>

Even though most of the studies have explained it as developmental cyst, it shows its appearance in adult life only, with an average age of 45 years which is 40 years in our study.<sup>3,11</sup> In our study, for the sex dominance, female are common with 3:1 female: male ratio. It is similar to study of Aquilino et al.<sup>3,11</sup>

In our study, all cases were unilateral while in study of M. Barzilai, Chandrasekharan R et al, Enoki AM et al show 10-11% of bilateral occurrence.<sup>3,4,5,12</sup> In our study, there is no side preference for nasolabial lesion whereas in study of Choy JH of 18 cases shows left: right ratio 55.6%: 44.6%.<sup>2</sup>

As per study of El-Hamd, patients usually reported for therapy when swelling increased in size. Its consequences lead to nasal blockage or change in facial symmetry as seen in our patients.<sup>13</sup> Nasolabial cyst is the rare condition where probable diagnosis is made on clinical basis due to its location and presentation. In all our cases, we preferred CT Scan imaging first and then FNAC as study of Gomes et al suggested the same.<sup>14</sup> Doubtful situation like change in consistency of cyst (firm instead of cystic) and chances of malignant transformation are very rare as stated in study of F. López-Ríos et al.<sup>6</sup> In cases a long standing cyst can lead to pressure related bone eroding changes. This can divert the mind towards malignancy especially in case of maxillary bone erosion. This is published in study of Atterbury RA et al and Shear M which is also seen in one patient of our study.<sup>15,16</sup>

Various treatment modalities are available like injection of sclerosing agents in the cyst, sublabial surgical excision, endoscopic conventional or microdebrider assisted transnasal marsupialization methods.<sup>7,17</sup> Even then most of the studies prefer to undergo a sublabial approach as it gives a wide exposure, control of bleeding, complete excision of cyst wall, with no scar.<sup>2,7</sup> We preferred to go for combined approach with endoscope since we have a magnified view and can completely excise the cyst along with its wall. Since the surgery is directly under vision, there are less chances of post-operative infection and recurrence. In our procedure



**Figure-4:** Excision of cyst through sublabial approach

combined approach has given comparatively better result in terms of post operative outcome, consequence and recurrence.

## CONCLUSION

Nasolabial cyst is an uncommon entity. Probable diagnosis made essentially on the basis of clinical profile while imaging helps in evaluating the further extent of lesion. Sublabial approach with endoscope (combined method) for complete excision of cyst is our preferred modality of treatment.

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