

# Nasoalveolar Cyst

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## ABSTRACT

Nasoalveolar cyst is a nonodontogenic, soft tissue cyst characterized by its extraosseous location in the nasal alar region. It is synonymous with nasolabial cyst, nasal vestibule cyst, nasal wing cyst and mucoïd cyst of the nose. It also called Kleistad's cyst. In this study, we would like to highlight the clinical presentation and the radiological features of nasolabial cyst in order to assist other healthcare providers in the diagnosis and treatment of this uncommon entity.

**Keywords:** Nasoalveolar cyst, Nasal vestibule.

## INTRODUCTION

Nasoalveolar cysts (NAC) are rare, nonodontogenic, soft tissue lesions that constitute about 0.7% of all jaw cysts.<sup>1,2</sup> It was first described by Zuckerkandl in 1882.<sup>3</sup> These cysts, unless infected, cause painless swelling around the nasal vestibule and upper lip and, infrequently, lead to nasal stuffiness.<sup>3,4</sup> Typically, they appear as a swelling at canine fossa, upper lip, gingivolabial sulcus, nasal alae and nasal vestibule.<sup>3</sup> With increasing size, nasoalveolar cyst may impinge on the anteroinferior turbinate and push against the septum. Long-standing pressure may cause erosion of the nasal floor or premaxilla.<sup>5</sup> NAC is mostly unilateral and is more commonly located on left side. Although figures differ, there are reports stating that NACs occur more frequent in women.<sup>3</sup> Bilaterality is reported in about 10% of patients.<sup>3,6</sup> Despite the fact that they are soft tissue cysts and are situated extraosseously they may sometimes cause bone destruction.<sup>6</sup> In this report, a bilateral NAC case is presented and its clinical features as well as surgical treatment methods are discussed.

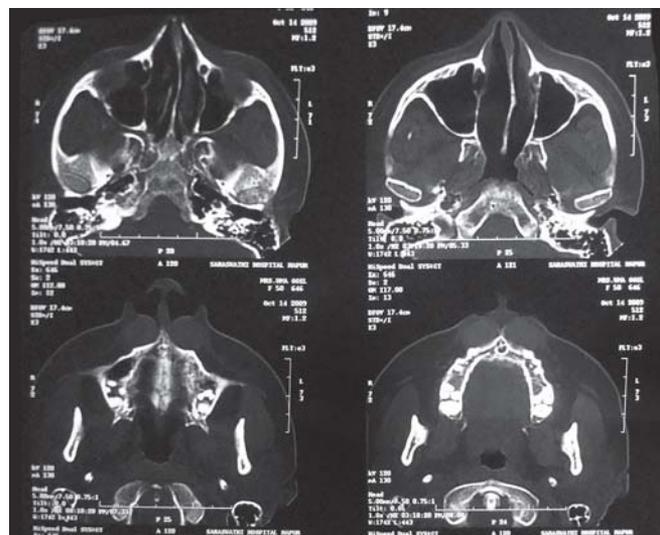
## CASE REPORT

A 30-year-old female patient complaining of bilateral nasal obstruction and fullness around the upper lip and nasal alae was admitted to our clinic. The lesions were painless and had increased gradually in size in about 2 years. Otorhinolaryngologic examination revealed mobile, fluctuant, bilateral masses partially blocking both nostrils and displacing both gingivobuccal sulci. Anterior rhinoscopy exhibited bilateral masses elevating the nasal vestibule floor and inferiorly occluding nasal passage on both sides. Computed tomography of paranasal sinuses

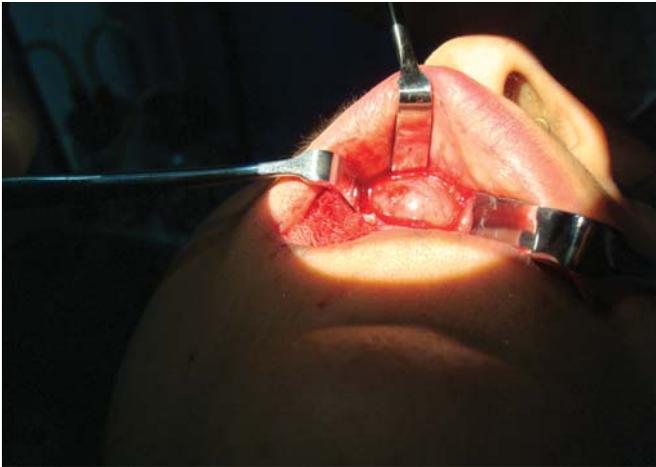
revealed bilateral cystic masses of 2 × 2 cm size on left and of 1 × 1 size on right (Fig. 1). The rest of the patient's medical history was unremarkable. She was hospitalized and bilateral NACs were planned to be excised through a sublabial approach. Complete excision of the cysts was achieved via a 5 cm sublabial incision extending to both sides from the midline which was followed by blunt and sharp dissection to free the lesions from surrounding tissues (Fig. 2). Histopathological examination showed that cyst wall was lined with a double layer squamous epithelium. No recurrence has been reported after 12 months of surgery.

## DISCUSSION

Nasoalveolar cysts present as swelling in the soft tissue beneath the alae of the nose.<sup>7</sup> The diagnosis is confirmed



**Fig. 1:** CT axial section showing bilateral nasoalveolar cyst



**Fig. 2:** Intraoperative excision of cyst

by histopathological examination of the tissue as well as the clinical features. They constitute 0.7% of all jaw cysts and are more frequently seen in women, black race and in 4 to 5 decades.<sup>3,4</sup> Even though they are developmental in origin, clinical manifestations do not exist until adulthood.<sup>8</sup> They tend to be unilateral and are mostly located on the left. Bilaterality of NACs was reported to be 11.2%.<sup>2</sup> Histologically, they are commonly made up of mature and condensed connective tissue that is most frequently lined by pseudostratified columnar epithelium.<sup>3,8</sup> In our case, the cyst was lined by squamous epithelium, possibly owing to the fact that pluripotent embryonic epithelial nests have the capacity of transformation from respiratory to squamous epithelium.<sup>8</sup> Regarding the pathogenesis of NAC, there are various theories of origin. The most widely accepted assumption is suggested by Klestadt.<sup>1,6</sup> According to this, cysts are derived from trapped epithelium in the line of fusion between lateral nasal, medial nasal and maxillary processes; so they may be termed as 'fissural cysts'.<sup>6</sup> According to Klestadt, fissural cysts may be of midline or lateral type. Lateral fissural cysts are a group of three cysts, the most medial of which is the globulomaxillary cyst, while the nasolabial cyst is the most lateral and anterior just below the alae. In between these two, NAC can develop. On the contrary, Wesley stated that NAC developed from inferior remnant of the nasolacrimal canal.<sup>2</sup> Another theory involves entrapment of ectoderm within nasolacrimal duct.<sup>5</sup> The diagnosis can be established by correlating clinical and histopathological findings.<sup>9</sup> The presence of a fluctuating rounded mass in the region beside the ala nasi should raise the suspicion of a nasoalveolar cyst.<sup>6</sup> It occupies a submucosal position in the anterior nasal floor and may elevate and displace inferior turbinate.<sup>10</sup> The lesion is usually not painful, unless it is secondarily infected.<sup>11</sup> The lesion may spontaneously rupture and drain nasally, orally

or even though rarely, via a cutaneous fistula.<sup>11</sup> Bimanual palpation with one hand on nasal floor and the other on gingivobuccal sulcus provides a good method of examination.<sup>7</sup> Most of the authors agree that plain radiographs would not demonstrate any abnormal findings, as in our case.<sup>1,6</sup> The localization and structure of the cyst can be demonstrated with CT scans,<sup>12</sup> especially the relation of the cyst to the surrounding tissues and in assessment of bony erosion can be imaged.<sup>13</sup> These types of cystic lesions should be differentiated from infections and odontogenic cystic lesions. Infections, such as large furuncles in the vestibule of the nose, may present with similar findings. Odontogenic cystic lesions include primordial, radicular and dentigerous cysts.<sup>3,5</sup> Treatment of choice for these cysts is surgical resection via sublabbial approach which can even be performed under local anesthesia, as in our case.<sup>9</sup> The incision should be made in the gingivobuccal fold over the convexity of the swelling, rather than through the mucoperiosteum. During the excision of larger cysts extending to the nasal floor, dissection should be made carefully in order to avoid perforation.<sup>8</sup> Recurrence after treatment has not been reported up to now, and malignant degeneration had been determined in one case only.<sup>9</sup> Alternatively, endoscopic cyst marsupialization via transnasal approach can be considered for treatment.<sup>14</sup> Aspiration of the cyst and injection of sclerosing agents constitute other methods of treatment and are rarely used.<sup>15</sup> Consequently, NAC should be considered in the differential diagnosis in patients who have a cystic mass in the nasal vestibular area that is accompanied by swelling and nasal obstruction.

## REFERENCES

1. Chinellato LE, Damante JH. Contribution of radiographs to the diagnosis of nasoalveolar cyst. *Oral Surg Oral Med Oral Pathol* 1984;58:729-35.
2. Wesley RK, Scannell T, Nathan LE. Nasolabial cyst: Presentation of a case with a review of the literature. *J Oral Maxillofac Surg* 1984;42:188-192.
3. El-Din K, El-Hamd AA. Nasolabial cyst: A report of eight cases and a review of the literature. *J Laryngol Otol* 1999;113:747-49.
4. Fishman RA. Pathologic quiz case 2: Nasolabial (nasoalveolar) cyst. *Arch Otolaryngol* 1983;109:348-51.
5. Liu ES, Kridel RW. Evaluation of nasoalveolar cysts for the plastic surgeon. *Arch Facial Plast Surg* 2003;5:185-88.
6. Barzilai M. Case report: Bilateral nasoalveolar cysts. *Clin Radiol* 1994;49:140-41.
7. Choi JH, Cho JH, Kang HJ, Chae SW, Lee SH, Hwang SJ, et al. Nasolabial cyst: A retrospective analysis of 18 cases. *Ear Nose Throat J* 2002;81:94-96.
8. Ulubil SA, Aslan I, Basaran B, Baserer N. Radiology quiz case 2. *Arch Otolaryngol Head Neck Surg* 2003;129:374-77.

9. Lopez-Rios F, Lassaletta-Atienza L, Domingo-Carrasso C, Martinez-Tello FJ. Nasolabial cyst. Report of a case with extensive apocrine change. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 1997;84:404-06.
10. Yanagisawa E, Scher DA. Endoscopic view of a nasoalveolar cyst. *Ear Nose Throat J* 2002;81:202-04.
11. Nixdorf DR, Peters E, Lung KE. Clinical presentation and differential diagnosis of nasolabial cyst. *J Can Dent Assoc* 2003; 69:146-49.
12. Hashida T, Usui M. CT image of nasoalveolar cyst. *Br J Oral Maxillofac Surg* 2000;38:83-84.
13. Cohen MA, Hertzanu Y. Huge growth potential of the nasolabial cyst. *Oral Surg Oral Med Oral Pathol* 1985;59:441-45.
14. Su CY, Chien CY, Hwang CF. A new transnasal approach to endoscopic marsupialization of the nasolabial cyst. *Laryngoscope* 1999;109:1116-18.
15. David VC, O'Connell JE. Nasolabial cyst. *Clin Otolaryngol* 1986;11:5-8.