

## A Nasal Dorsal Mucosal Cyst After Rhinoplasty: A Case Report

Umut Tuncel<sup>1</sup>



<sup>1</sup> Liv Samsun Hospital,  
Hançerli, Fatih Sultan  
Mehmet Cd No:155, 55020  
İlkadım/Samsun, Turkey

### Abstract

We attended a patient's case of dorsal nasal cyst that emerged after 5 years following a rhinoplasty surgery. The patient presented to our clinic with a mass in her nose, which had existed for at least 12 months prior to the clinic visit. After the cyst etiology was diagnosed, the patient was treated with cyst excision by open rhinoplasty. The etiology of nasal dorsal mucoceles is unclear, however its development were able to be explained. Generally, two basic theories explain the nasal dorsal cysts which are the mucosal implantation or herniation. This case report aims to discuss on the management of the patient's nasal dorsal cysts especially in terms of disease's etiology.

**Keywords:** Nasal, dorsum, mucosal cyst, rhinoplasty.

*Address of corresponding  
author:*

*Liv Samsun Hospital,  
Hançerli, Fatih Sultan  
Mehmet Cd No:155, 55020  
İlkadım/Samsun, Turkey  
Email:  
drumuttuncel@gmail.com*

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Nasal dorsal cysts can be detected as early or late onset. The early-onset cyst is generally caused by mucosal graft implantation during the surgery. Meanwhile the usual cause for the the late-onset nasal dorsal cysts is defect in nasal bone or cartilaginous vault, which leads to mucosal herniation or migration. The dorsal nasal cyst is one of the rare complications after cosmetic rhinoplasty (Chang DY & Jin HR, 2008, Tracy LE & Badran K, 2014). Up to date only 26 cases of nasal dorsal cyst were documented in the literature (Aydogdu & Ozturk, 2015). Most of these cases were mucous-related with the most frequent localization is at the nasal dorsum. Other locations of nasal cysts were also reported such as at the nasal tip and medial canthal area (Giacomini PG, & Topazio D, 2014). Several circumstances were discussed in the etiology of the nasal dorsal cysts, in which common causes of the pathology are mucosal migration or ectopic free mucosal graft implantation during the surgery. In addition, foreign bodies, such as latex rubber fragments, have been stated as other cause of the cysts (Chang DY & Jin HR, 2008).

### Case Presentation

A 27-year-old female patient presented to our clinic with a 1-year history of slowly growing soft tissue mass at her nasal dorsum (Figure 1). Written consent was provided, by which the patient agreed to the use and analysis of her data. The patient had a cosmetic rhinoplasty 5 years ago. There was no infection or trauma after the surgery. During physical examination, an approximately 12×10 mm in sized, round, moderately mobile, semisolid, and painless soft tissue mass was detected on the midline of the nasal radix. Computed tomography (CT) scan demonstrated a nasal dorsal roof defect which include nasal bone and upper lateral cartilages (ULC) from radix to one top third of ULCs. In addition, a 16×14×10 mm sized low-density mass was found on the defected nasal bone extending towards ULC (Figure 2).

### Management And Outcome

Initially, when the patient presented at our clinic, we suspected the cause of the mucosal cyst may be due to the open nasal roof following a complication of previous rhinoplasty surgery. The patient was operated under general anesthesia employing an open rhinoplasty approach. In order to reach the cyst, the alar and ULC were supra-perichondrial dissected. During the dissection, we observed that the cyst comprises mucous with thin capsule within it (Figure 3). The capsule was removed after the light-yellow and viscous cyst content had been aspirated, in which the mucosal defect was then repaired with a 4/0 polydioxanone suture (PDS). After cleaning the surgical field with a 50-cc serum physiologic, the open roof was covered by shaping the costal cartilage transplant to resemble the dorsal aesthetic lines. PDS sutures were used to secure the costal cartilage transplant to ULC at two points. The nose was closed when all repairs were completed, and the cast was worn for one week. During this time, the patient was given antibiotics and anti-inflammatory medications.

During the follow up, the findings was uneventful, and a good aesthetic result was obtained.

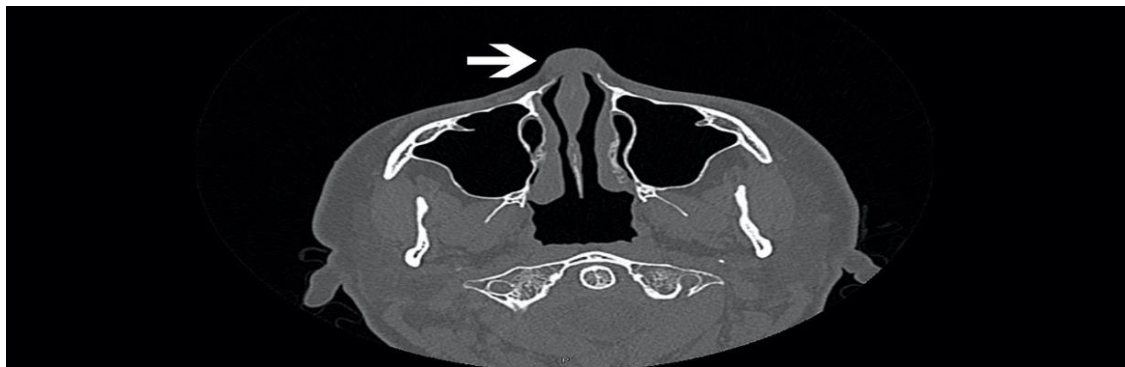
### Discussion

The etiology of nasal dorsal mucoceles is unclear, however, its development can be explained. Generally, two basic theories were commonly used to explain the nasal dorsal mucosal cysts which are mucosal implantation or herniation.

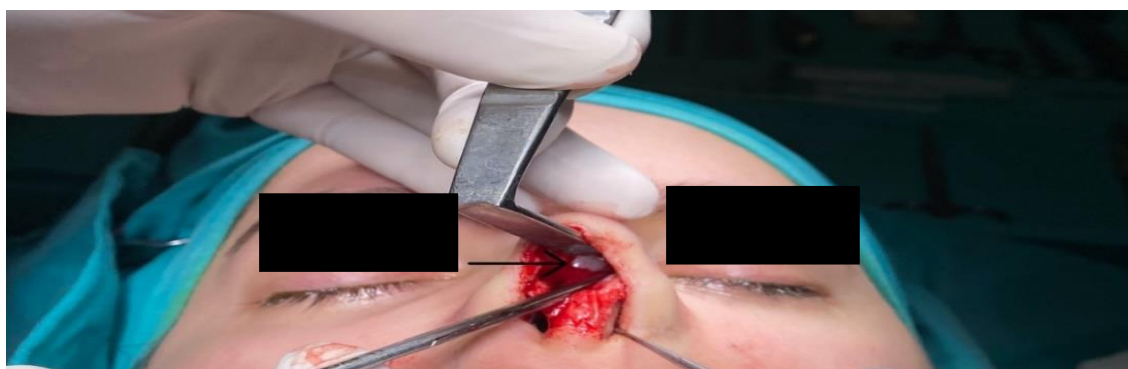
Surgery is commonly used treatment for a nasal dorsal mucocele. The surgical approach usually differs according to the cyst etiology and the location of the cyst. In the presented case, the nasal dorsal defect following the previous rhinoplasty surgery was perceived to be the reason for the cyst development. It is believed an open roof may likely caused a mucosal herniation in the surgical excised field.



**Figure 1:** A 27-year-old female patient was presented to our clinic with a mass on her nasal dorsum. Pre-operative photographs (A: frontal view, B: lateral view) show around moderately mobile, semisolid, and painless soft tissue mass on the midline of the nasal radix. Photographs (C: lateral view, D: frontal view) were taken 1 month after surgery showing successfully removed nasal cyst with a good aesthetic result.



**Figure 2:** There was a nasal dorsal roof defect on the CT scan, including a low-density mass located on the defected nasal bone extending towards upper lateral cartilages (ULC). White arrow shows soft tissue mass on the nasal dorsum.



**Figure 2:** The cyst contained mucous material inside with a very thin capsule. Black arrow shows mucosal cyst on the nasal dorsum.

This may be caused through a mechanism like contact inhibition, which is a process that involves cell growth being blocked when cells

encounter each other. In other case reports, the intercartilaginous incisions or the defects at the osteotomy lines may also be responsible for the

nasal mucoceles. This is especially reported in the differential diagnosis related to the soft tissue lesions at the nasal radix or glabella which may include the encephalocele, dermoid or epidermoid inclusion cysts and also epidermal inclusion cysts or skin origin cysts. Following the surgical history and existing nasal dorsal defect, we consider the lesion presented by the patient as postsurgical nasal dorsal cysts. The pathologic examination was not required in our case since the cyst and specimen that were surgically removed are macroscopically diagnosable.

There are various surgical methods used in the literature. However, direct open and open or closed approach rhinoplasty are the most commonly used technique. Other ways can be thought of as different variations of these. The surgical method selected should generally be based on the etiology and location of the cysts. Since the nasal dorsal cysts was believed to be caused by an open roof secondary to the previous resection rhinoplasty, closing the roof using a rib graft next to the excision of the cyst was preferred as the approach to manage this case.

### Disclosures

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