



## Nasal dorsal mucous cyst formation: a rare and preventable complication of rhinoplasty

### Nazal dorsal müköz kist oluşumu: Rinoplastinin nadir ve önlenbilir komplikasyonu

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Nasal dorsal mucous cyst formation after rhinoplasty is a rare and preventable complication in otorhinolaryngological area. To prevent this complication bony, cartilage, and mucous remnants should be removed meticulously. Maintaining mucosal integrity during cartilage incisions and osteotomy and completing all osteotomies are very important in preventing mucous cyst formation. The treatment of this complication is the complete excision of the cyst with its capsule. In this article, we report a case of nasal dorsal cyst that developed within six months after rhinoplasty with a brief review of the literature.

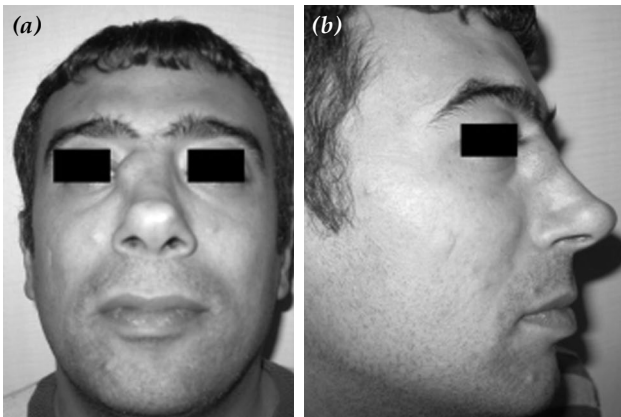
**Key Words:** Complication; mucous cyst; rhinoplasty; surgical approach.

Rinoplasti sonrasında nazal dorsal müköz kist oluşumu kulak burun boğaz alanında nadir görülen ve önlenbilir bir komplikasyondur. Bu komplikasyonun önlenmesi için kemik, kıkırdak ve mukoza kalıntıları titizlikle çıkarılmalıdır. Kıkırdak insizyonu ve osteotomi sırasında mukozal bütünlüğün korunması ve bütün osteotomilerin tamamlanması müköz kist oluşumunun önlenmesinde önem taşımaktadır. Bu komplikasyonun tedavisi, kistin kapsülüyle birlikte tamamen çıkarılmasıdır. Bu yazıda, rinoplasti sonrası altı ay içinde gelişen nazal dorsal kist olgusu, kısa bir literatür derlemesi ile sunuldu.

**Anahtar Sözcükler:** Komplikasyon; müköz kist; rinoplasti; cerrahi yaklaşım.

Rhinoplasty is mostly performed electively for cosmetic and/or functional reasons. Following surgery many undesired, mostly cosmetic consequences may be encountered. Nasal dorsal mucous cyst formation after rhinoplasty is a very rare complication.<sup>[1-5]</sup> Other causes such as edema, hematoma, infection, abscess formation, paraffinoma, callus and scar tissue formation should be considered in the

differential diagnosis.<sup>[1]</sup> In previously published cases the mucous cysts have been reported to appear within several months or years. The glabellar region, bony and cartilaginous nasal dorsum, area over the alar cartilages and alar base are the most reported sites.<sup>[2-4]</sup> Our report presents a patient with mucous cyst formation following rhinoplasty and our approach to this complication.



**Figure 1.** The photographs of the patient before operation from (a) anterior, and (b) lateral view.

### CASE REPORT

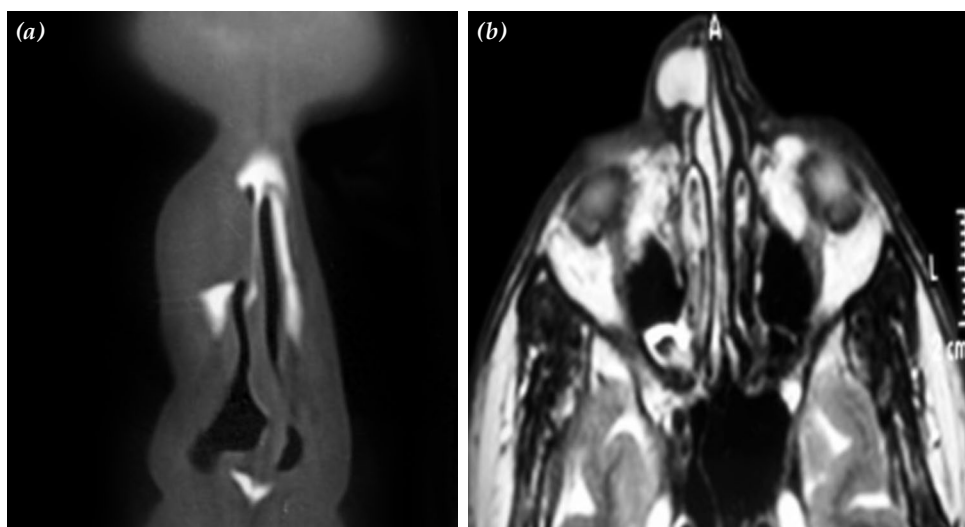
A 33-year-old male underwent closed approach rhinoplasty in 2003. He had a history of nasal trauma 15 years before. The early postoperative period was uneventful but six months later he came back with a slowly-growing nasal dorsal mass.

On physical examination there was a subcutaneous 1.5x1.5 cm soft, mobile mass on the right side of the superior nasal dorsum, and the nasal septum was deviated to the left (figure 1). Paranasal computed tomography showed a well circumscribed cystic mass located on the right nasal bone adjacent to the orbit, and magnetic resonance images showed the cyst related with the nasal cavity (figure 2).

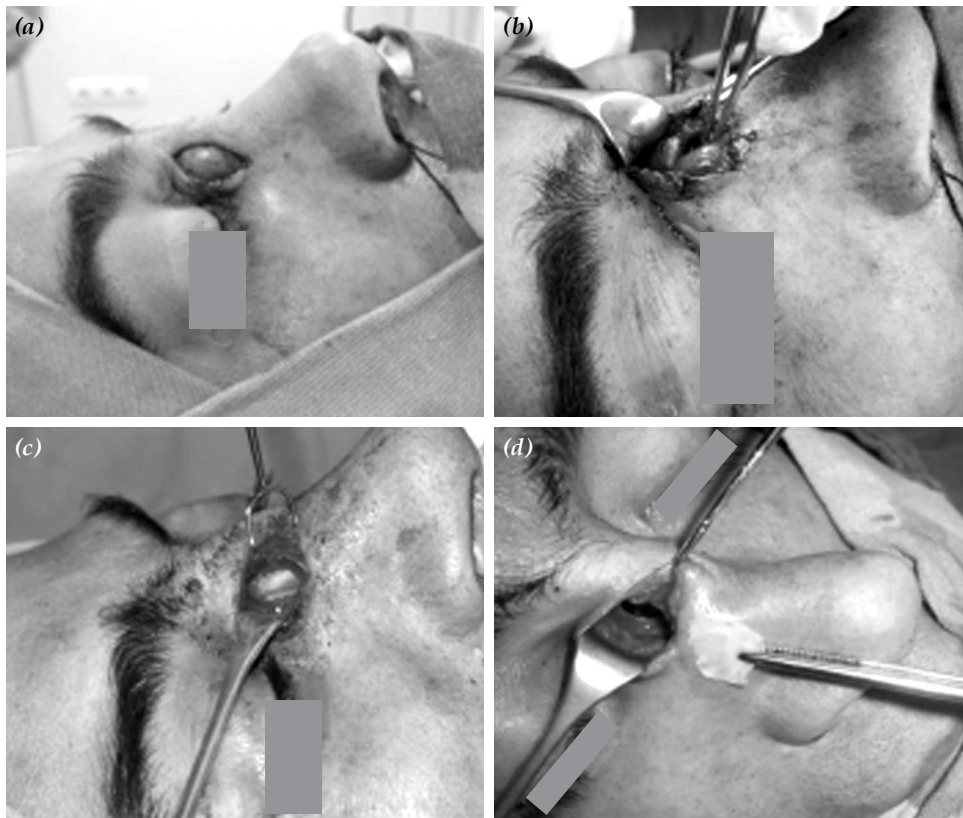
We performed a 1.5 cm vertical skin incision and excised the cyst with its capsule. We also observed an approximately 0.5 cm bone defect on the right nasal bone (figure 3a, b). After performing septoplasty with Cottle technique we repaired the bone defect with a septal bone graft to avoid any recurrence (figure 3c, d). The bone graft was placed in between the internal nasal mucosa and bone, and an external nasal splint was applied. Histopathological examination demonstrated mucous cyst. We didn't observe recurrence or any other complications in a follow-up period of one year (figure 4).

### DISCUSSION

Mucous cyst formation after rhinoplasty is a very rare soft tissue complication. In the initial reports it was proposed that mucosal herniation was responsible for the formation of mucous cysts. Although this theory seems reasonable, no connection between cyst capsule and nasal mucosa has yet been shown.<sup>[2,3,5]</sup> Therefore the most reasonable explanation for this complication appears to be the proliferation of ectopic or displaced mucous membranes, acting as free grafts, caused by improper clearing of mucous epithelial remnants attached to bone or cartilage either in situ or as part of an autogenous graft. In our case the cyst capsule had no connection with the nasal mucosa as well. A previous report of post rhinoplasty mucous cyst appearing in the nasal tip supports the concept of free mucosal grafts in an ectopic



**Figure 2.** (a) Computed tomography image, coronal section shows the mass located on the right nasal bone adjacent to the orbit, and (b) magnetic resonance image, axial section shows the relation of the well circumscribed mass with nasal cavity.



**Figure 3.** (a) Shows the vertical skin incision and the cyst. (b) The bone defect on the right nasal bone is seen under the cyst. (c) The splint inside the nasal cavity is seen from the defect and (d) the bone graft harvested from septum is shown.

position rather than herniation. It has also been suggested that cyst formation may be due to occlusion of sebaceous glands by scar tissue formation,<sup>[2]</sup> seeding of mucous tissue during osteotomies, or incomplete removal of remnants.

According to published reports there are two important points emphasized to prevent this complication. All bony, cartilage, and mucous remnants should be removed meticulously. Maintaining mucosal integrity during cartilage incisions and osteotomies and completing all osteotomies are also very important.<sup>[1-5]</sup> Kotzur and Gubisch<sup>[3]</sup> suggest the formation of an intact mucoperichondrial tube to access the bony structures of the nose to maintain mucosal integrity as well as the septum.

Complete excision of the mucous cyst with its capsule is the treatment for this complication. After excision of the cyst reconstruction of the surgical defect should also be performed. There are several surgical techniques such as endonasal approach, open rhinoplasty technique, external cutaneous

incisions and even endoscopic approach.<sup>[1-5]</sup> The main problem in the endonasal approach is limited exposure. Open techniques provide better exposure than endonasal techniques. Bracaglia et al.<sup>[5]</sup> obtained better exposure by using nasal endoscopy through an intercartilaginous incision. The external cutaneous incision is thought to form



**Figure 4.** Photographs of the patient after one year (a) lateral and (b) anterior view.

scar tissue, but no cosmetic problem has been reported after using this approach. The size and location of the mucous cyst affect the surgeon's choice. We performed an external cutaneous approach because of cranial and lateral location of the cyst and no complication has occurred after procedure.

In conclusion mucous cyst formation after rhinoplasty is a rare and preventable complication and treatment of this complication consists of complete excision of the cyst no matter which technique is chosen.

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