

Reconstruction of the defects in the middle of the nose with subcutaneous pedicled nasolabial island flap: report of two cases

Subkütanöz pediküllü nazolabial ada flebi ile burnun orta kısım defektlerinin onarımı: İki Olgu Sunumu

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Two cases with basal cell carcinomas on the middle of the nose were treated by using subcutaneous pedicled nasolabial island flap. There were no partial or total flap losses in either case and neither of the cases had local recurrence during the follow-up period. The subcutaneous pedicled nasolabial flap should be considered to be an alternative to the paramedian forehead flap for the reconstruction of defects on the middle of the nose. In this article two cases in whom subcutaneous pedicled nasolabial island flap method was applied for the reconstruction of middle defects of the nose are presented in the light of the literature.

Key Words: Basal cell carcinomas; island flaps; subcutaneous.

Burnun orta kısmında bazal hücreli karsinomu olan iki olgu superiyor tabanlı subkütan pediküllü nazolabial ada flepleri kullanılarak tedavi edildi. Ameliyat sonrası hiçbir olguda total veya parsiyel flep kaybı olmadı ve takip süresince lokal yinleme görülmedi. Burnun orta defektlerinin yeniden yapılandırılmasında subkütanöz pediküllü nazolabial flep, paramedian alın flebine alternatif olarak düşünülmelidir. Bu makalede burnun orta kısım defektlerinin onarımında subkütanöz pediküllü nazolabial ada flep yöntemi uygulanan iki olgu, literatür eşliğinde sunuldu.

Anahtar Sözcükler: Bazal hücreli karsinom; ada flepleri; subkütanöz.

The goals of reconstructing deformities of the nose acquired secondary to skin tumors include optimizing the donor-site aesthetics and reconstructing the area with similar types of tissue, when possible.^[1] Various skin flaps have been developed in order to repair defects involving different regions of the nose. The nasolabial area, which is an excellent donor-site because of its blood supply, makes loose tissue and redundant skin better choices for nose reconstruction. Many surgeons widely use

nasolabial flaps in alar nasal defects of small-to-moderate size.^[1-5]

Although a subcutaneous pedicled nasolabial flap is a useful method for the reconstruction of defects involving the lower one-third of the nose,^[2-5] the use of this flap in defects in the middle of the nose is uncommon. In this article, a superiorly-based subcutaneous pedicled nasolabial flap used for the reconstruction of middle nose defects

is presented. The results were satisfactory and esthetically acceptable for the patients.

Surgical technique

Patients underwent surgery for the excision of basal or squamous cell carcinomas under local anesthesia. The tumors were resected with 3-5 mm lateral margins. The surgical margins were examined with intraoperative frozen sections and confirmed to be free of tumor cells. The flap was designed in the nasolabial crease in a shape and size similar to the defect. The flap size ranged from 2.5x3 cm to 3x3.5 cm and it was raised on a 1-1.5 cm wide subcutaneous pedicle. The axis of the pedicle spanned from the nasolabial flap to the inner canthus. A tunnel was then created between the flap pedicle area and the defect, between the dermis and the subcutaneous fat. The flap was delivered from the tunnel and sutured to the defect site with 5-0 nylon. The donor area was closed with primary sutures. Both tumor defects contained only skin and subcutaneous tissue. The cartilage, bone, and nasal mucosa were intact.

CASE REPORT

Case 1– A 67-year-old male patient was referred to our clinic for the treatment of a basal cell carcinoma in the middle of the nose (Fig. 1). The tumor was excised with 5-mm lateral margins. A frozen section examination of the surgical margins was tumor-free. The skin defect was 3x3.5 cm. A similar-sized nasolabial island flap was prepared (Fig. 2). A subcutaneous tunnel was dissected from the base of the flap to the nasal defect. The skin island was transferred to the nose subcutaneously. The donor-site was closed primarily.



Fig. 1. Basal cell carcinoma on the middle of the nose.

Postoperatively, epidermolysis was detected on the skin island. Nevertheless, all surgical areas were healed in two weeks without any tissue necrosis (Fig. 3). The color and texture match were good at the reconstructed site. Donor-site morbidity was minimal (Fig. 4).

Case 2– A 65-year-old female patient sought evaluation of a nodular lesion on the nose (Fig. 5). The clinical diagnosis was basal cell carcinoma. After the tumor resection, the resulting defect was resurfaced with a 2.5x3 cm subcutaneous pedicled nasolabial island flap. The healing was uneventful and the aesthetic result was satisfactory (Fig. 6).

DISCUSSION

The nose is one of the important structures of the face, therefore a good aesthetic result of the nasal reconstruction is crucial. The basic reconstruction techniques use a V-Y advancement flap from the forehead to reconstruct the glabella, an island flap from the forehead to reconstruct the nasal dorsum and nasal tip, and a nasolabial flap to reconstruct an ala.^[6] The nasolabial flap is a versatile flap described for use in the lateral nasal wall, ala, columella, and intraoral reconstructions because of the laxity of the cheek.^[4,5,7,8] A modified application of the flap is described for total full-thickness defects of the alar margin.^[3,4] We used a nasolabial island flap for the repair of middle nasal defects and the results were considered as satisfactory.

The goal of the reconstruction of nasal defects is to obtain minimum deformities at the donor-site and a donor area similar to the reconstructed area with respect to color and texture. The size of the defect also influences the choice of donor skin for



Fig. 2. A subcutaneous pedicled nasolabial flap.



Fig. 3. Postoperative view at 6th days. Epidermolysis is seen on the surface of the flap.

nasal reconstruction; therefore, donor-sites with usable tissue parts are limited.^[9] Numerous techniques have been described for the reconstruction of nasal dorsum defects.^[6,9]

For large defects, the forehead flap is the standard treatment option. It provides an abundant source of tissue of similar texture for reconstruction. There are few local nasal flap options for the repair of middle nasal defects.^[10] Absence of suitable donor-sites and the large dimensions of the defects limit the use of local nasal flaps in this region.^[11]

Soft tissue defects of the nose after tumor excision are variable in depth and size. Healing by second intention is most useful for small wounds in concave areas. Full-thickness skin grafts may be a good choice when used to resurface a superficial defect or for defects too large for local flaps.



Fig. 5. Basal cell carcinoma on the middle of the nose.



Fig. 4. Postoperative view at 6th months.

Postoperatively, skin grafts are typically atrophic and hypopigmented or hyperpigmented, which could result in an unpredictable texture.^[12] We have not encountered such problems in our patients. The color and structural match of the flaps were acceptable for the patients.

Single-lobe transposition flaps (banner and rhomboid) give a slightly better result than a skin graft for defects smaller than 1.5 cm in the upper two-thirds of the nose with thin and lax skin.^[12] These flaps could not be used since the defects were big in our patients.

The bilobed flap is the flap of choice for repair of defects between 0.5 and 1.5 cm in the thick skin zones of the nose.^[12] However, such flaps also require additional incisions on the surface of the nose and leave permanent scars in adjacent tissues.^[13] Although the cosmetic results of this



Fig. 6. Postoperative view at 4th months.

flap were good, it can only be used for small sized defects. Subcutaneous pedicled nasolabial flaps can cover defects that are at least three times as big as the defects that can be covered with this flap.

The forehead flap remains a good flap for large, deep defects. In fact, the texture of the forehead flap does not match well, which results in a slightly unsatisfactory aesthetic outcome. Furthermore, the procedure has two steps and there is a tendency to get bulky and cause a significant donor defect.^[14] Uchinuma et al.^[15] compared the nasolabial and median forehead flaps and concluded that the nasolabial flaps achieved better results in alar reconstructions. There are also studies stating that there are no aesthetic differences between the two methods.^[16]

The nasolabial flap was described by Warren in 1840 for the reconstruction of nasal defects.^[1,17] The cutaneous pedicle nasolabial flap is inadequate in size and arc of rotation for resurfacing the dorsum.

Barron and Emmet^[18] first used a subcutaneous pedicled nasolabial flap for the reconstruction of a full thickness defect in the nasal ala. Hoping to achieve a more mobile flap, many authors have used subcutaneously-based nasolabial flaps.^[3-5,10,17,18] In the case of a subcutaneously-based flap, the dermal vascular plexus is disrupted, and the viability of the flap relies solely on the subcutaneous vessels. Fosko and Dzubow^[19] suggested that superior, subcutaneously-based pattern flaps are supplied by the musculocutaneous perforator branches of the superior labial artery and transverse facial artery. They further recommended avoiding excessive thinning of the flap's pedicle.^[19]

Small defects (<1.5 cm) can be treated with a variety of local flaps. There are not many options for the reconstruction of middle-sized (1.5-4 cm) dorsum nasal defects.^[16]

Recently, a lateral nasal artery pedicled nasolabial flap was described for nasal tip reconstruction; preparation of this flap is difficult and requires experience.^[1]

We used a subcutaneous pedicled nasolabial island flap that described different variations for alar area reconstructions. In this article, nasal dorsum reconstructions with a subcutaneous nasolabial flap that have been performed on two patients have been described. The defect dimensions varied

between 2.5x3 cm and 3x3.5 cm. There were no partial or total flap losses. One patient who smoked 20 cigarettes a day had epidermolysis on the flap, which healed with dressing changes. The aesthetic results were good in all patients and the patients were satisfied. The scar tissue at the donor-site of the flap at the nasolabial crease was minimal. Minimal deformation occurred in the alar groove.

Nasal framework reconstruction was not performed in these patients because the defects included skin and subcutaneous tissues in the patients. We think that this flap can be used in full thickness middle nasal defects. The cartilage and composite grafts can be attached to the flap in cases where nasal framework reconstruction is needed. This kind of application is performed in the reconstruction of ala nasi defects.^[2,3]

In conclusions, the advantages of this flap compared to other flaps commonly used for the repair of the defects in the middle of the nose can be stated as follows: it is easily prepared; the procedure can be performed under local anesthesia; it requires only one operation; donor-side deformities are at minimum, and the color and texture of the skin are very well matched. We recommend the use of the subcutaneous pedicle nasolabial island flap in the reconstruction of defects in the middle of the nose.

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