

THE RECONSTRUCTION OF NASAL ALLA DEFECTS WITH NASOLABIAL FLAP – CASE REPORT

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Abstract: Restitution of function and aesthetic appearance of the nasal alla can only be achieved with a very good knowledge of the local and loco-regional anatomy so that, depending on the size of the post-excisional defect, one can use the best surgical procedure with resulting coverage as close to physiological. From all the local flaps, the article presents a case report of a nasolabial flap used for defect coverage on the right alla. As highlighted in the article, the most frequently used method of reconstructing the nasal alla is this type of flap, which provided good aesthetic and functional outcomes.

Cuvinte cheie: reconstrucția aripiei nazale, nazogenian, bazocelular

Rezumat: Funcționalitatea și aspectul estetic al nasului, postoperator, pot fi obținute numai printr-o bună cunoaștere a anatomiei loco-regionale, astfel încât, în funcție de defectul postexcizional obținut în urma exciziei formațiunilor tumorale, chirurgul să poată alege cea mai potrivită tehnică chirurgicală reconstructivă, cu cele mai bune rezultate. Articolul prezintă un caz clinic în care s-a folosit lamboul nazogenian ca metodă reconstructivă a aripiei nazale drepte, în urma exciziei unei formațiuni tumorale. După cum evidențiază și articolul, cea mai folosită metodă reconstructivă a aripiei nazale rămâne lamboul nazogenian.

INTRODUCTION

Nasal alla defects, either traumatic or after the excision of a tumour, are difficult to reconstruct without distorting the natural aspect of the damaged nasal subunit or symmetry. Over time, plastic surgeons have tried to find different methods of entire nose reconstruction or just a nose subunit, some with good aesthetic and functional results, others without. The most suitable for covering these defects still remains the nasolabial flap, either with inferior pedicle, or with superior pedicle, depending on the size, depth and location of the defect.

PURPOSE

The purpose of the study is to that the most frequently used method of reconstructing the nasal alla is the nasolabial flap.

METHODS

The nasolabial flap is still the most used flap in reconstructing the alla defects. This fact can be observed in a statistical study conducted in Plastic Surgery Clinic of the Clinical Emergency Hospital, in Bucharest, from January to December 2012. Thus, from a number of 29 chronic patients with nose impairment, 25 cases were nasal tumours, representing 86,20%, 4 cases were congenital malformations of the nasal pyramid, 13,20%. Of the 25 cases of tumours of the nasal pyramid, 2 were benign (8%) and 23 were malignant tumours (92%), including basal cell carcinoma and squamous cell carcinoma. From the 29 chronic patients, 5 of them had tumours located on the nasal alla, meaning 17,2%. For these 5 patients, the defects resulting after excision of the tumours were covered

in 60% of the cases with nasolabial flap – 3 cases, and in 40% of the cases with other types of flaps – 2 cases.

After tumour excision, the pieces excised were sent for histopathological examination. The most representative case was that of a patient with recurrent basal cell carcinoma.

Cutaneous basal cell carcinoma has its origins from epidermic pluripotent cells, and it is more common in female patients after the age of 50. Basal cell carcinoma was first described by Jacob Arthur, in 1827, in Dublin, as a rodent ulcer.(1) Recent studies have shown that nearly two thirds of basal cell carcinomas are located on the face and neck, fact explained by the prolonged exposure of these regions to ultraviolet light. The main treatment for basal cell carcinoma still remains the surgical one. Surgical resection with margins kept in oncologic safety limits has a 10% relapse rate. Incomplete resection of the tumour often shows a more than 30% relapse rate.(2,3) Lately, more and more surgeons use Moh's technique in excising the carcinoma, in order to obtain free tumour invasion margins.

CLINICAL CASE

This is a case report of a defect, after tumour excision, with a 2,5 cm diameter, in the right nasal alla.

A female patient, 83 years old, presented herself in our clinic with an ulcerated tumour about 2 cm in diameter, with a brown-gray colour, with hemorrhaging spots, relatively well defined edges, with uneven surface, looking like a cauliflower, with small adherence to the deep plans, with no pain spontaneous or on palpation, with a slow development within 2 years. The patient knew herself with a history of basal cell epithelioma in the right alla, which underwent surgery 4 years before, and also a history of hypertension (figure no. 1).

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CLINICAL ASPECTS

Markings for the flap design were made previously to the excision. The excision of the carcinoma was performed with 4 mm safety margins. The alla cartilage did not present any tumoral aspect, so it was not included in the excision. The orientation of the flap's pedicle is usually set by the location of the defect and the angle of rotation or advancement of the flap needed to cover the defect. Flap thickness is also set by the depth of the defect. The flap is based on a vascular complex sustained by the facial artery that goes from deep tissue to the surface (figure no. 2).

Figure no. 1. Basal cell epithelioma in the right alla

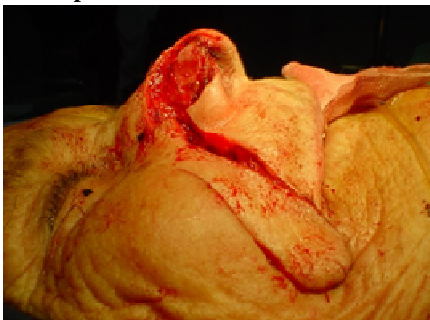


Figure no. 2. Aspect after tumour excision



In this case report, the reconstruction of the right alla defect was performed with a nasolabial flap with superior pedicle. The donor site, the nasolabial sulcus, was infiltrated with 1% lidocaine, in a dilution of 1:100000. The plan of dissection was beneath the subcutaneous fat of the flap and superficial to the underlying muscular fascia, in an inferior-superior and lateral-medial direction.(4) Dissection is continued until the flap can be freely transposed over the defect. Keeping into consideration the contraction of the flap, the incision should be placed at 1 mm outside the dimensions of the defect. We thinned the flap's base, and had an incision at this level, in order to avoid dog ears at the base of the pedicle. To avoid second surgery, flap's pedicle cut, the flap's base was cut as narrow as 15 mm, to maintain flap viability, but also to avoid loops. Primary closure of the donor site was performed with 4-0 Prolene sutures. The covering flap was also sutured onto the receiving site with 4-0 Prolene (figures no. 3, and 4).

Figure no. 3. Flap at the level of the defect



Sutures were removed later, at 10-12 days. The patient was instructed to keep a good and delicate local hygiene and to avoid sun exposure at least for 6 months.

Figure no. 4. Suture at the level of the defect



After 3 weeks, histopathological examination revealed an infiltrative basal cell carcinoma, ulcerous, affecting the deep dermis, hypodermis and muscle fibres, with tumour-free margins. The patient was followed-up for 2 years, with no signs of relapse.

DISCUSSIONS

In tumour excisions which leave a less than 1 cm defect, the specialty literature indicates a per secundam wound closure.

In general, surgeons close small defects with primary suture. Average size defects that exceed 1,5-2 cm are covered either with free split skin graft, with the disadvantage of not following the natural contour of the nose, or with local flaps, in the attempt to preserve the natural aspect of the nasal subunit.(5)

In nasal alla defect coverage, the surgeons' choice still remains the nasolabial flap, which brings good aesthetic outcomes and follows the natural curved contour of the alla. Usually, the nasolabial flap needs two surgery steps. In the second step, the surgeon cuts off the base of the flap and models the nasal contour.

In this case report, the second step was discarded. Because the flap was tailored sufficiently narrow as to allow flap viability and rotation, while lifting and rotating the flap, there were no dog ears or excess tissue that needed to be cut off, so the donor site could be closed by primary suture. The flap's pedicle recreated perfectly the nasolabial sulcus.

CONCLUSIONS

Establishing indications and contraindications in nose reconstruction are influenced by many factors. These are: etiology, mechanisms of production, lesion and biological status of the patient.

Most common pathology of the nose, and by default of nasal allae, remains the tumours, representing 41% of all patients with alar pathology, admitted in our clinic in 2012.

A free-cancer cell excision limit allows obtaining lower relapse rates. Judicious choice of reconstructive procedures adapted to each situation individually, leads to good functional and aesthetic results.

In our clinic, the most common methods of reconstruction remain local flaps, the most used flap – 57% of all flap reconstruction cases – the nasolabial rotated flap, either with superior pedicle, or with inferior pedicle, which has demonstrated its versatility and convinced the surgeons by the aesthetic results obtained.

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