Reconstruction of the nasal tip with medial frontal flap

Reconstrução da ponta nasal com retalho médio frontal

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ABSTRACT

The reconstruction of surgical defects generated by the excision of nasal tumors is a challenge for dermatologic surgeons due to the rigid structure and low mobility in the region. Among the alternatives to repair these defects is the pedicled frontal interpolation flap, especially where there is involvement of two or more aesthetic units of the nose. The present study reports the case of a patient with basal cell carcinoma involving the alae, tip, and columella of the nose, in which surgical repair after resection was carried out with pedicled frontal interpolation flap or medial frontal flap with excellent cosmetic results.
Keywords: carcinoma, basal cell; surgical flaps; reconstructive surgical procedures

RESUMO

A reconstrução dos defeitos cirúrgicos gerados pela excisão de tumores nasais é um desafio para os cirurgiões dermatológicos devido à estrutura rígida e de pouca mobilidade da região. Dentre as alternativas para a cobertura destes defeitos destaca-se o retalho frontal interpolar pediculado, principalmente nos casos em que há o envolvimento de duas ou mais unidades estéticas do nariz. Neste trabalho relata-se o caso de paciente com carcinoma basocelular envolvendo as asas, ponta e columela do nariz, em cujo reparo cirúrgico após a ressecção, utilizou-se o retalho frontal interpolar pediculado ou retalho médio frontal, com excelente resultado cosmético.
Palavras-chave: *carcinoma basocelular; retalhos cirúrgicos; procedimentos cirúrgicos reconstrutivos*

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INTRODUCTION

The nasal pyramid is the most common site for the emergence of malignant tumors in the head and neck, particularly in areas with great exposure to the sun, such as the nasal alae (45%), the nasal dorsum (17%) and the nasal tip (5.5%). 1 Basal cell carcinoma (BCC) is the most common malignant neoplasia, accounting for approximately 75% of those lesions, followed by squamous cell carcinoma (SCC), which accounts for 15% of cases and, more rarely, by melanoma, which in dermatology corresponds to 4% of all cutaneous malignancies.[2]

The reconstruction of surgical defects caused by the excision of nasal tumors is a challenge for dermatologic surgeons, due to the complex anatomy and limited availability of remaining skin in the site to perform the correction.[2,3]

Burget & Menick revolutionized nasal reconstruction surgery with the introduction of the concept of *aesthetic subunits*

of the nose, based on differences in the skin's elasticity, color, contour and texture, contributing to the refinement of nasal surgery.[4]

Total thickness skin grafts can yield good results, however there is risk of depressed scars, dyschromias, and alterations in the shape of the nose. The results obtained with pedicled flaps are always superior than those obtained with grafts, precisely due to the reduction of those risks. 5 In the present study the authors present a method for the reconstruction of the alae, tip, and columella of the nose using a pedicled interpolated frontal flap after the excision of a BCC involving those subunits.

CASE REPORT

A 70-year-old Caucasian patient, originally from a rural area of the Northern Brazilian State of Amazonas, sought medical care complaining of a slow growing sore in the nasal tip, which had emerged one year before. The clinical examination evidenced an exulcerated and crusted plaque with pearly borders, of terebrant aspect, located in the nasal tip and alae, with invasion of the upper third of the columella. (Figure 1)

Histopathological examination confirmed the clinical hypothesis of BCC. Surgical excision with a 5 mm margin resulted in the bilateral removal of the nasal alae and columella. (Figure 2) The preparation of the flap used the paramedian frontal region as donor area. The flap was dissected in the subcutaneous plane up to the medial-lateral glabellar region. Doppler examination was not used to identify the supratrochlear artery. The closure process of the donor area was then performed by approximation. The portions in this area that could not be completely approximated were left to heal by second intention. No cartilage structure was used for remodeling the nose. (Figure 3) The second surgical event – which comprised the transection of the pedicle – was carried out four weeks after. Calcium alginate was used in the dressing. The surgical margins were free of the tumor and the patient recovered uneventfully and with excellent cosmetic result. (Figure 4)

DISCUSSION

The cutaneous flaps used for nasal reconstruction have great versatility in their application.[1] Numerous techniques can be used for the closure of surgical defects caused by the excision of tumors in the nose, such as the primary synthesis, advancement flap, transposition flap, bilobed flap, grafts, or combinations of techniques. [3]

The frontal region skin is recognized as the best donor area for nasal coverage, due to the appropriateness of its color and texture, with the interpolated frontal skin flaps used to treat great losses of substance affecting more than one aesthetic unit, and defects that affect cartilage and/or the mucosa.[1,6] Furthermore,

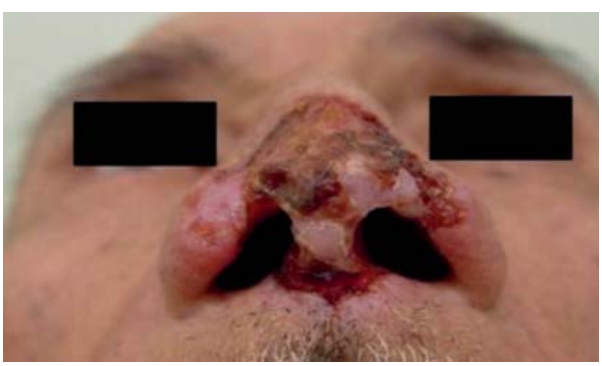

Figure 1: Basal cell carcinoma compromising nasal alae, tip, and columella

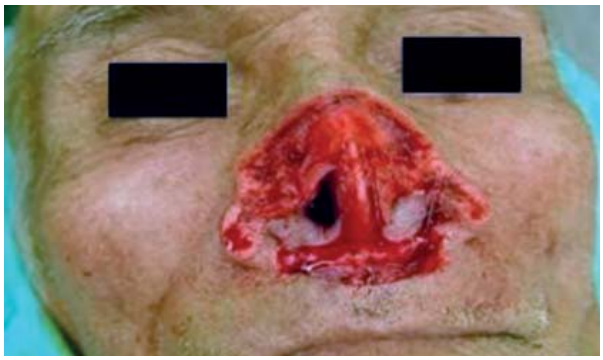

Figure 2: Large surgical defect after excision of lesion

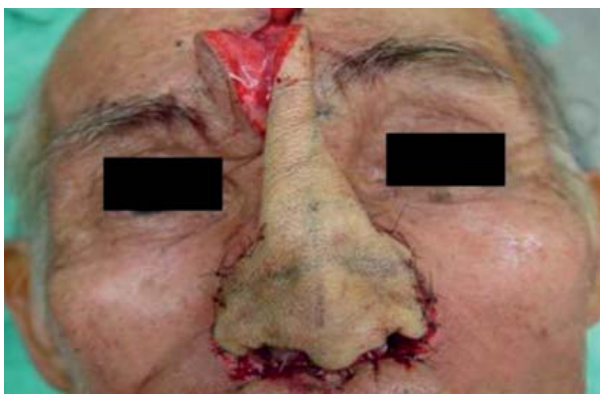

Figure 3: Pedicled frontal interpolated flap used for closing the surgical wound in the nose

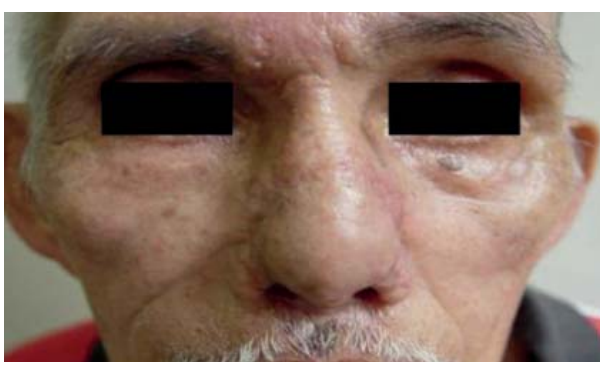

Figure 4: Final aesthetic result

the arterial blood flow concept and venous drainage are of utmost importance for the design of the flap. The forehead is nourished by a rich vascular network supplied by the supratrochlear, supraorbital, and superficial temporal arteries.[7] In the case described, the patient had full thickness compromise with involvement of the nasal alae, columella, and tip due to BCC.

The post-operative difficulties are most present in the first 24 hours, when the patient needs to remain with the nostrils occluded due to the dressing, and in the need for a second surgical event for the resection of the pedicle – which must be carried out four weeks later. As disadvantages of the technique, the authors highlight the presence of frontal scarring and of deformity in the eyebrow line. [2,7]

The dermatologic surgeon must recognize the various types of cutaneous flaps since there is a growing incidence of nasal tumors. Thus, the authors present an interesting method for reconstruction of nasal defects using a pedicled frontal interpolated flap with excellent aesthetic results. ●

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