

# Surgical options for treatment of lip and perioral tumors: report of 5 cases\*

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**Abstract:** Basal cell and squamous cell carcinomas are the main neoplasms of lip and perioral location. We describe different techniques of successful surgical reconstruction, including flaps or simple incision and suture. Using the latter technique satisfactory results were demonstrated, although the incision made removed more than a third of the lip, contrary to the literature. Our goal is to emphasize that the common sense and experience of the surgeon should prevail in the choice of reconstructive method. Moreover, even if the priority is complete excision of the lesion, we cannot ignore the aesthetic and functional recovery objective.

**Keywords:** Carcinoma, basal cell; Carcinoma, squamous cell; Surgical flaps

## INTRODUCTION

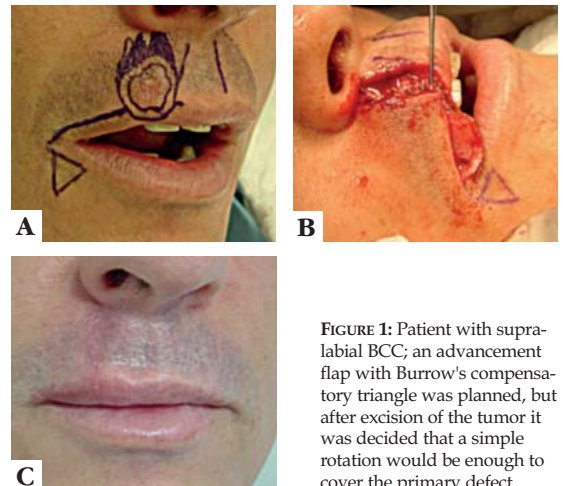
The authors present five cases of surgical options for the treatment of lip and perioral tumors performed in patients with squamous cell and basal cell carcinoma, as they are the main malignant neoplasms of the face and the excisions may cause tissue loss, resulting in distortions of the anatomical unit.

## CASE REPORT

The surgeries were performed under local anesthesia. In the three first cases, patients presented supralabial basal cell carcinoma. For the first patient an advancement flap with Burrow's compensatory triangle was initially planned; however, after excision of the tumor it was decided that a simple rotation would be enough to cover the primary defect (Figure 1). The second patient had an island flap (or a dermis-fat pedicle) performed, in addition to a wedge resection of the orbicularis muscle to diminish the primary defect (Figure 2). The third was surgically treated with full thickness wedge, with primary closure (Figure 3). The patients described in the two last cases presented infra-labial squamous cell carcinoma and the fourth case was treated with lesion excision and rotation of advancement flap with upper Burrow's triangle, also known as Bernard's Unilateral Technique (Figure 4). In the last case W-plasty technique was used and excision of Burrow's upper triangle was not necessary (Figure 5).

## DISCUSSION

Basal Cell Carcinoma is the most frequent malignant cutaneous tumor, representing 71.4% of all malignant skin tumors. It presents slow growth and rarely metastasizes.<sup>1</sup> When it affects the mucosa, it usually begins by contiguity, from adjacent skin. The Squamous Cell Carcinoma is the second most common malignant skin tumor (21.7%), with possibility of disseminating metastases.<sup>1</sup> When recurrent, they are biologically more aggressive than the primary ones.<sup>2</sup>



**FIGURE 1:** Patient with supralabial BCC; an advancement flap with Burrow's compensatory triangle was planned, but after excision of the tumor it was decided that a simple rotation would be enough to cover the primary defect

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FIGURE 2: Patient with supralabial BCC, submitted to reconstruction with “island” pedicle flap (or dermal-fat pedicle), in addition to a wedge resection of the orbicular muscle to diminish the surgical wound



FIGURE 3: Patient with supralabial BCC, treated surgically with a total thickness wedge with primary closing

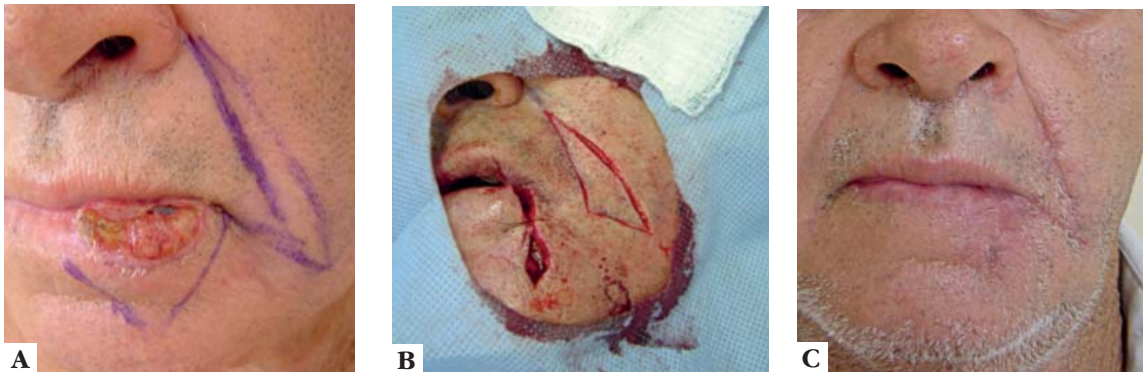


FIGURE 4: Patient with infralabial SCC, submitted to lesion excision and rotation of advancement flap with upper Burrow's triangle, also known as unilateral Bernard's technique

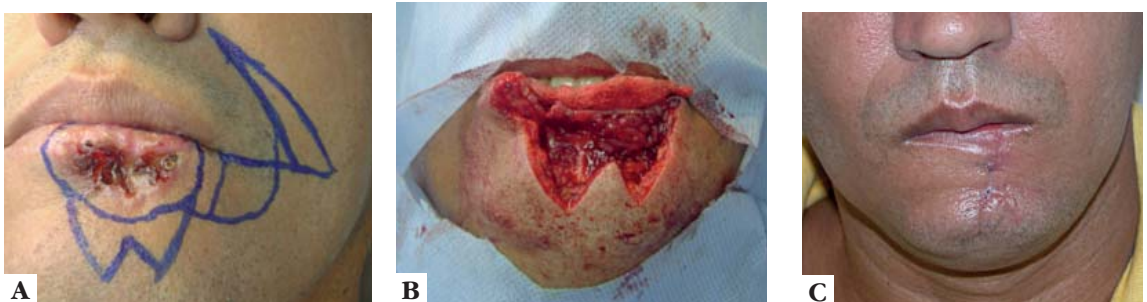


FIGURE 5: Patient with infralabial SCC, submitted to W-plasty surgery; excision of upper Burrow's triangle was not necessary as shown in figure 5A

In the transversal lip cut, planes can be identified starting from the surface: epidermis, dermis, subcutaneous, oral orbicular muscle, submucosa and mucosa. Blood irrigation is achieved by superior and inferior labial arteries, that originate in the facial artery and are oriented toward oral commissures. Venous drainage is supplied by the anterior facial vein.<sup>3</sup>

As regards labial neoplasms, 95% involve the lower lip, where Squamous Cell Carcinoma is predominant, and the upper lip, where the majority are Basal Cell Carcinomas.<sup>4</sup> There is larger incidence in males, while they are rare in blacks and in people younger than 40. Women's lips seem to be better protected due to usage of cosmetics and to lower exposure to aggressive factors. These neoplasms are related to chronic exposure to the sun, tobacco, alcohol, immunosuppression and chronic infection by the human papillomavirus.<sup>5,6</sup>

Metastases occur very rarely in BCC (2). In primary SCC they are usually lower than 5%, but in the high-risk ones, this percentage is higher, from 15% to 38%. On the lip, a high-risk anatomical site, this percentage is between 14 and 16%. Tumors larger than 2 cm are twice more prone to recurrence and three times more prone to metastasis than the smaller ones.<sup>7</sup>

The American Joint Committee on Cancer (AJCC) has recently published the seventh edition of the Cancer Staging Manual, which contains new criteria of TNM staging for non-melanoma skin carcinomas. It considers the size of the tumor (> 2 cm), its thickness (> 2 mm), Clark level ( $\geq$  IV), location (ear and lip) and differentiation (little differentiated or undifferentiated).<sup>7</sup>

For the majority of head and neck tumors, local-regional clinical examination, incision biopsy and chest radiography are sufficient for diagnostic confirmation and staging.<sup>8</sup> A rigorous exam must be performed to discard regional lymphadenopathy. If lymph nodes grow in size, fine-needle aspiration or excision biopsy must be performed to determine if they are metastatic.<sup>7</sup>

The treatment of choice is surgical, but radiotherapy also presents favorable results as a complement to surgery or palliatively in unresectable tumors.<sup>9</sup> Chemotherapy used in some SCC cases with distant metastases have presented good results.<sup>7</sup>

Surgery must prioritize oncological cure and later seek aesthetic and functional correction. Flaps should be avoided in surgical wounds that do not definitely present margins free of neoplasm involvement, as the clinical manifestation of the remaining or recurrent tumor might be hampered.<sup>10</sup>

In tumors smaller than 2 cm the literature recommends margins that vary from 0.3 to 1 cm and 0.4 to 1.5 cm for BCC and SCC respectively. For larger lesions, Mohs surgery is recommended and if it is simply resected, surgical margins should be widened.<sup>2</sup>

The reconstruction of resulting defects is a challenge and will be done according to its dimension and location, the characteristics of patient and experience of the surgeon.

Bernard-Burrow-Webster's flap is one of the most used option for the reconstruction of large labial defects, with the advantage of being a one-stage surgical method. Although it does not produce microstomia, it may result in oral sphincter incontinence and lower lip retraction.<sup>6</sup>

The criteria that define a successful reconstruction are: maintenance of sphincter and sensorial function, adequate oral access for eating and use of prostheses, symmetry, upper/lower lip ratio and quality of scars.<sup>4</sup>

In spite of references suggesting that the incision and simple suturing should only be done when less than one third of the lip is removed, we obtained good results in some patients, even when the surgical incision was larger, showing that common sense and surgeon experience must prevail. Cases in which the tumor resulted in a surgical wound with a large defect, we opted for performing cutaneous flaps.

The choice of surgical wound closure depends on: size of defect, location, tension of wound edges, recurrence risk, cosmetic result and clinical characteristics of the patient. The main methods are primary, grafts and flaps. Primary closure offers the best aesthetic result and should be prioritized.<sup>10</sup>

The ideal donor areas for labial reconstruction are: remaining labial tissue and the opposing lip, which allow muscle belt reparation; secondarily, the genian region and neighboring face tissues; and as an exception alternative, distant flaps.<sup>4</sup> The lip is elastic and can be elongated, a very useful characteristic for reconstructive surgery. Tension should be avoided on the labial commissure so that lips distortion, vermilion misalignment or asymmetry do not occur.

After surgery, the patient should be regularly followed-up to monitor local and distant recurrence. Patients with high-risk SCC should be submitted to reevaluation every 4 to 6 months.<sup>7</sup>

For an adequate treatment, precise histological diagnosis, cutaneous tumor location, differentiation of high and low-risk tumors, immunosuppression, precocity of the proposed treatment and follow-up of patient who is subject to new BCCs and SCCs should be considered. □

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