

ORIGINAL ARTICLE

Reconstructing carcinoma of the lip commissure and buccal mucosa: an oncosurgical alternative approach

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Summary

Purpose: To describe a new technique of surgical treatment of the lip commissure or buccal mucosa carcinomas, where we use local flaps (skin, buccal mucosa) of the sliding type.

Methods: According to the current technique, the ectomy ranges horizontally and in a cuneiform shape towards the side of the buccal cavity, and in the whole thickness of the layer (skin – mucosa), where the neoplastic focus is enclosed.

Results: The difference in our technique consists of the following: To the vertical bi-cuneiform part of the wound a horizontal cuneiform part (with the top showing upwards) is added, with extent and width analogous to those of the cancerous injury (tri-cuneiform ectomy). The width of the gap across its horizontal part is larger on the side of the mucosa (continuous line), compared to the one along the side of the

skin (punctuated line), since the mucosa, as a more versatile tissue, can be sutured easily, in contrast to the buccal skin, which is of greater thickness and shows lack of versatility, so that it can be pulled on with difficulty in order to be sutured. The planning of the injury, according to our described technique, facilitates the broad ectomy of the intraoral injuries in the area of the lip commissure and the buccal mucosa, with immediate suture of the flaps (buccal and skin gap), and the occlusion of the wound by primary intention.

Conclusions: Using this specific technique, in the cases of extended injuries infiltrating the skin or the subcutaneous tissue, the harming use of transposition (sliding or free) flaps is avoided.

Key words: lip, commissure, buccal, mucosa, carcinoma

Introduction

The cancerous injuries of the lip commissure and the buccal mucosa, in the cases of small extent (stage T1), are treated surgically, by means of a limited local excision on the safe boundaries of the mucosal medium. On the basis, the muscle mass

may remain, without the skin to be affected. The occlusion of the wound is performed by primary intention, or by the use of adjustment sliding or rotational flap from the buccal mucosa or the mucosa of tongue (pedicled flap), or even by free skin

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graft [1]. In injuries (split thickness skin) of the lip commissure the bi – cuneiform excision represents a satisfactory method for radical treatment [2].

In the cases of extended injuries of the mucosa, with infiltration of the buccal skin or of the lip commissure skin, for the cases of prominent helcosis, or not (hard redness of the skin), where a penetrating ectomy of the injury becomes necessary through the whole thickness of the layer (skin – muscle – mucosa), a surgical gap of large extent remains in the medium. In these cases, and for covering the surgical wound, it becomes necessary to use a pedicled flap of large extend (deltopectoral flap), or a musculocutaneous flap (pectoralis major flap, frontal flap), or a vascularized free flap, extra-orally only, or intra-orally and extra-orally in combination, securing the forehead flap in the site of the missing mucosa, and the pectoralis major flap or the deltopectoral flap in the site of the skin (extra-orally) [3,4] As it is natural in these cases, large wounds in the donor sites of the flaps are created, causing unfavorable results, both morphologically and functionally, as well as in the recipient sites of the face (discoloration). These situations are acceptable, since they regard extended wounds, which can be arduously covered by the relative sliding flaps.

In the cases of cancerous injuries of the buccal mucosa of small extent (stage T2), where the skin or the subcutaneous tissue is slightly infiltrated, and the removal (the radical degree of the operation, that is the radical extension performed) of a part of the skin is mandatory, our technique can be implemented (Martis' technique) [5]. According to this technique, the wound is closed by primary intention, with immediate suture in layers, both of the skin and of the intraoral mucosa, accompanied with the avoidance of performing flaps of large extent.

Implementing a specific oncosurgical approach

The technique we present here was used by us in more than 30 cases, and is based on the improvement of the classically used method for the rehabilitation of lip commissure injuries, where a uniform bi–cuneiform (upper lip–lower lip) ectomy of healthy lip soft tissue is performed (Kestel method, as mentioned previously). According to the current technique, the ectomy ranges horizontally and in a cuneiform shape towards the side of the buccal cavity, and in the whole thickness of the layer (skin–mucosa), where the neoplastic focus is enclosed. The difference in our technique consists of the following: To the vertical bi–cuneiform part of the wound a horizontal cuneiform part (with the top showing upwards) is added, with extent and width analogous to those of the cancerous injury (tri–scuneiform ectomy). The width of the gap across its horizontal part is larger on the side of the mucosa (continuous line), compared to the one along the side of the skin (punctuated line), since the mucosa, as a more versatile tissue, can be sutured easily, in contrast to the buccal skin, which is of greater thickness and shows lack of versatility, so that it can be pulled on with difficulty in order to be sutured. The planning of the injury, according to our described technique, facilitates the broad ectomy of the intraoral injuries in the area of the lip commissure and the buccal mucosa, with immediate suture of the flaps (buccal and skin gap), and the occlusion of the wound by primary intention (Figures 1A-B). The rehabilitation of the surgical gap can be performed easily and the unfavorable postoperative ramifications are of extremely mild degree, while the result is adequately satisfactory, both in its operational, as well in its morphological aspects

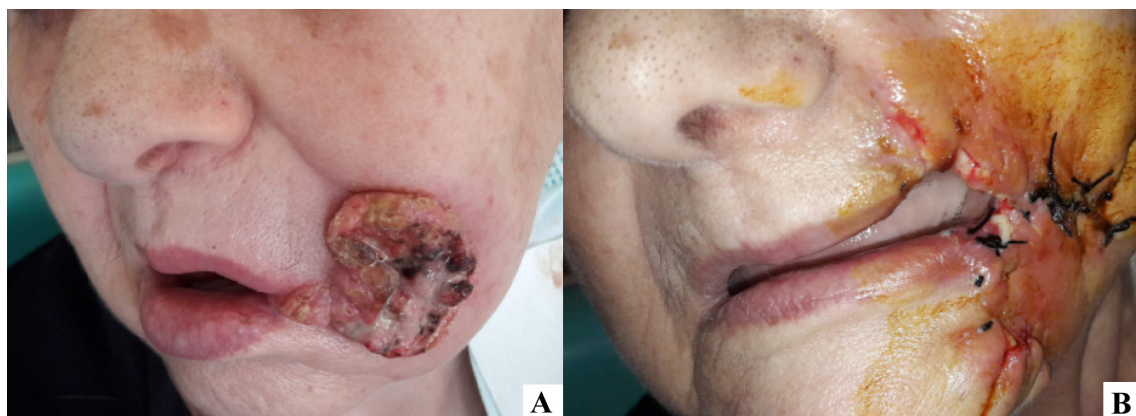


Figure 1. Large (extended) surgical intervention with flaps for covering the skin gap in a case of buccal carcinoma. **A:** The malignant mass before the excision. **B:** Gaping wound, after the full ectomy of the injury (immediate post-operational result).

Discussion

The data collected out of our own experience, as well as the corresponding data from all over the world, assure that for the auspicious prognosis for the surgical treatment of the cancerous, in general, localization in the oral and maxillofacial area to take place, in a percentage of 50 – 60%, the first (initial) surgical operation has to be accomplished in an immaculate way, that is in an absolutely right way, both considering the indication of the treatment and the surgical procedure, a fact assured only by the presence and action of an experienced and specialized surgeon (maxillofacial surgeon).

This medical demand, which must never be circumvented, implies the radical degree of the surgical operation, in combination with the lesser and milder unfavorable morphological and functional post-operational ramifications. If the initial surgical intervention is not accomplished in a perfect manner, the patient, besides the exception of some rare cases, is doomed (triennial survival of 0–3%). The radical degree of the surgical treatment is completed by the use of various types of flaps, which contribute decisively to the rehabilitation of the surgical wound, and with the immediate or distant implementation of transplants, which improve especially the osseous medium of the face, reducing severely the amputation result, for the cases this is rendered as inevitable. In our days, and especially for that reason, it is widely known that the number of the cases of cancerous localizations which are left untreated by surgical operations is almost completely reduced. The technique we described, “totally radical” according to the indications of its implementation, can and must be accomplished in cases of injuries of middle extent (stage T2), without exhibiting broad skin intervention, and free from neck lymph node metastases. In the cases these are present, a radical neck dissection or an immediate compound operation (of the Commando type, or not) must be performed. To the great advantages of this technique belongs the avoidance of the use of flaps or the reception of a free skin transplant, and the creation of a traumatic donor site, from the development of the flap or the reception of a free skin transplant, as well as the avoidance of a second corrective surgical operation (severance and reset of the peduncle in the donor site), in the cases a vascularized flap is not implemented, facts that are unavoidable when our technique is not used. Lower degree disadvantages, occurring in the postoperative stage, are the relative reduction of the oral fissure and the pseudoankylosis (odontopris) because of the fabrication (wound symphysis) of the mucosa in the intraoral wound,

which can be improved by small correcting surgical operations (plastic surgery procedures of the lip commissure, removal of the bridle of the ankylotic buccal mucosa).

Other surgical approaches in this specific field include re-construction of the oral commissure with the Zisser flap. A study group concluded that this is correlated to an impressive functional outcome, and cosmetically also very acceptable [6]. More complicated re-construction methods for the oral commissure, lip and buccal mucosa are based on the use of combined first-second toe web with dorsalis pedis flap or on implementation of a single-stage reconstruction using a facial artery musculomucosal (FAMM) flap and a vermilion advancement [7,8]. Another surgical approach is based on the use of sub mental artery island flap (SAIF) in the reconstruction of a large defect of oral commissure and buccal mucosa. The study group concluded that it has a reliable vascular supply providing also a thin and pliable tissue for reconstruction in this anatomic region [9]. Additionally, a study group proposes an alternative reconstructive method based on revascularized flaps (fasciocutaneous free flap of radial). They observed that the implementation of a bi-left free fasciocutaneous flap of radial drives to an adequate reconstruction with improved aesthetic and functional results [10]. Rotational flap combined with a mucosal advancement flap also is another reconstructive version of lip defect after widely excising basal cell carcinoma. The surgeons showed that this method is associated with improved oral competence [11]. Similarly, reconstruction of the cheek, oral commissure and vermilion after resection of buccal-mucosal squamous cell carcinoma is based on a variety of techniques as described by another study group [12]. Restoring symmetry of the lips is an important surgical target for the surgical reconstruction of the oral commissure. Based on the contralateral commissure, a study group suggested a technique on both flaps that are easily ‘stretched’, accordion-like, to reach the predetermined point of the new commissure, using to full advantage the inherent elastic potential of both vermilions. The main advantages of this procedure include full restoration of the dynamic function of the orbicularis ring in a single-stage operation and avoidance of either lips wicking procedures or of mobilization of mucosa and cheek skin [13]. Furthermore, reconstruction of the lip commissure in invasive squamous cell carcinoma of buccal mucosa and the vermilion border of the lower lip cases should be also faced by one stage reconstruction of the defect using a type of nasolabial flap. A study group analyzed the data obtained by a series of patients and concluded that

this surgical approach is quick and easy demonstrating high viability and low complication rate, respectively [14].

In conclusion, we implemented and described a new technique of surgical treatment of the lip commissure or buccal mucosa carcinomas, where we used local flaps (skin, buccal mucosa) of the sliding type. By applying this technique - especially in the cases of extended injuries infiltrating the

skin or the subcutaneous tissue- the harming use of transposition (sliding or free) flaps is avoided. This surgical approach provides important functional and cosmetical benefits in the treatment of the corresponding patients.

Conflict of interests

The authors declare no conflict of interests.

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