

RECONSTRUCTIVE POSSIBILITIES IN ORAL COMMISSURE RECONSTRUCTION

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ABSTRACT

Aim of the study The purpose of this study is to present our experience regarding the reconstruction of extended oral commissure defects following oncologic resections. **Material and methods** We reviewed 12 cases of neoplasias involving the oral commissure, that were surgically removed and the defect was reconstructed using loco-regional and free flaps. **Results** The functional outcomes were favourable in all the included patients, with acceptable cosmetic results. The advantages and limitations of each technique are discussed in relation to the type of defect. **Conclusions** Full-thickness defects of the oral commissure are difficult to reconstruct, due to the functional aspects involved in eating and phonation. The best results can be achieved when the selection of each reconstructive technique is made in accordance with the characteristics of the defect, in knowledge of the advantages and disadvantages of each method.

Key words: key word one, key word two

INTRODUCTION

Head and neck cancers are among the most common malignancies in the world, accounting for around 6% of all cancers (1, 2). One of the main principles in treating the neoplasia is resection of the tumors with limits free of tumoral tissue. Due to the anatomic complexity of the oral commissure and cheek, the result of the reconstructions after tumour excision in this area is a great challenge to surgeons. This task is even more important as it is necessary to rebuild a through-and-through buccal defect requiring a three-dimensional restoration (3). Different techniques have been used for this purpose, particularly for the commissure reconstruction (4, 5).

Special attention must be paid to the aesthetical restoration since the oral commissure is one of the most challenging regions for reconstructive surgery (6).

Different techniques can be adopted, depending on the dimensions and complexity of the defect, in order to obtain maximum functional and aesthetic results.

MATERIAL AND METHODS

We performed a study of a group of 12 patients with malignancies at the level of the oral commissure in between January 2011 and June 2018. We excluded from the study the patients with unresectable tumors or with distant metastases. We also excluded those in which the comorbidities did not allow surgery or those who refused it. The medical charts of the patients included in the study were analysed for information regarding the clinical signs, the tumor location and size, the anatomopathological diagnosis of the lesion, the type of tumor removal procedure and reconstruction, the postoperative complications and outcomes. The period of

postoperative follow-up was at least 12 months, with most patients returning at least once every three months.

RESULTS AND DISCUSSIONS

In this study there were 8 men and 4 women between the ages of 47 and 67 years old. Most patients were at the first presentation to the surgeon (7 cases). However, a significant proportion was represented by tumoral recurrences after carcinomas originating either at the level of the oral mucosa or the skin. Thus, in 4 cases

reconstructed area for increasing the functional or aesthetic result. Some postoperative incidents were recorded: three hematomas, wound dehiscence in two cases. In two patients, due to the blockage of the Stensen's duct, a salivary accumulation was produced.

Due to the amount of tissues, free flaps tend to droop, resulting in drooling. This is one of the reasons for choosing, in most of the cases, the superficial temporal flap (Fig. 1, Fig. 2). It is a pedicled flap, with origin in a higher position than the receptor area. At the



Fig. 1. Squamous cell carcinoma of the lower lip extended to the left oral commissure

there were squamous cell carcinomas of origin at the level of the lip (2 relapses), 2 recurrent basal cell carcinomas, 1 recurrent squamous cell carcinoma of the maxillary bone, 3 squamous cell carcinomas originated in the buccal mucosa were extended at the level of the oral commissure and 2 were retrocommissural leukoplakias.

For reconstructing the defect, 6 island fasciocutaneous superficial temporal flaps were used, 4 musculocutaneous latissimus dorsi free flaps and 2 fasciocutaneous radial free flap. None of those flaps was entirely lost, but some marginal necrosis appeared. On the other hand, in 7 cases it was necessary to perform a secondary correction in the



Fig. 2. Aspect of the defect after surgical resection

same time, the rigidity of the temporal tegument plays an important role not permitting drooling and neither for the cheek to sag or to develop pockets where the meal debris can be retained (7,8). The conversion of the superficial temporal fascia (Fig. 3, Fig. 4) (placed towards the oral cavity) in an oral mucosa of the best quality was very important from a functional point of view (9).

There are, however, some limitations to the technique. First, it is not possible to use it in women, due to the pilosity of the skin from the donor area. Secondary, the stiffness of the skin palette can be quite visible in some

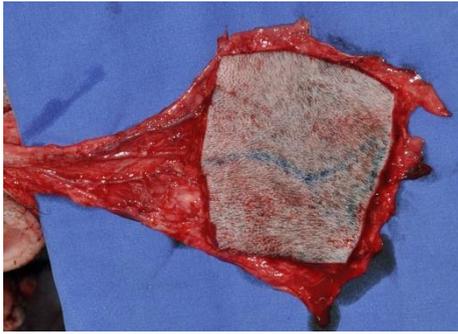


Fig. 3. Cutaneous aspect of the island of the pedicled flap



Fig. 4. Deep, fascial aspect of the pedicle flap



Fig. 5. Postoperative aspect



Fig. 6. Postoperative aspect with mouth opening

cases, decreasing the esthetical result. (Fig. 5, Fig. 6).

The radial free flap is one of the most used flaps for retrocommissural complex defects due to its pliability and thickness. We successfully use this flap (Fig. 7, Fig. 8), but some disadvantages make it less desirable from our point of view. It can be folded, therefore it can line the intraoral and the extraoral defect at the same time. However, inside the mouth, there is skin instead of oral mucosa, and this tissue is less renitent than mucosa, favouring the drooling. In order to

avoid this, the intraoral part of the flap can be deepitelised, (Fig. 9, Fig. 10) which leads to the same evolution as in the case of the temporoparietal flap (10). In time, the volume of this flap decreases significantly, leading to a visible asymmetry.

Some of these aspects can be solved by using the latissimus dorsi musculocutaneous flap. It can be tailored depending on the shape and the complexity of the defect: only soft tissue or an association with bone. For this purpose, the flap can be harvested in a chimeric fashion, including the tip of the



Fig. 7. Basal cell carcinoma extended into the oral commissure



Fig. 8. Aspect of the defect after surgical resection

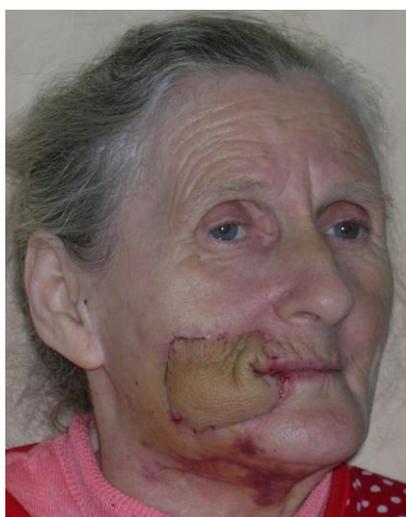


Fig. 9. Postoperative aspect



Fig. 10. Postoperative aspect with mouth opening

scapula, for primary maxillary bone reconstruction. We used only the musculocutaneous form. When necessary, the flap was raised with a large amount of muscle that was used for filling the maxillary gap. In every case, the reconstruction of the oral defect was achieved with the raw, muscular part of the flap. In spite of a slight longer period of healing, the resulting oral mucosa was very qualitative. It eventually allows a final stable denture (11) The macroscopic aspect is similar to the normal oral mucosa. Due to the absence of the subdermal fat, this oral lining gains a degree of stiffness

preventing the cheek to sag or to develop pockets. The same stiffness plays an important role in restoring the functionality of this region: speaking, chewing, mastication, deglutition. Frequently, the volume of the flap can increase, showing an asymmetry and, sometimes a plugging of the flap. A revision of the flap can simply undertake this inconvenience. The main disadvantage is represented by the mismatching of the tegument with the surrounding one from the face and it is difficult to solve this minus.

During the excision of the tumor, it is possible to intercept the Stensen's duct, or

even the parotid tissue. There can be two consequences: saliva accumulation on the cheek, or a more or less obvious paralysis of the facial nerve. For the first situation, is necessary to reposition the Stensen duct or to drain the affected parotid tissue into the buccal space. When a salivary cyst appears and it is persistent, injecting the botulinum toxin into the parotid gland can solve this problem (12).

But usually facial nerve paralysis cannot be solved primarily because of the location of the resection that removes all the distal part of the facial nerve branches. For this reason, is not possible to use nerve grafts to restore the facial nerve functionality. Generally, maybe the most suitable approach is to use static methods of face reanimation, such as barbed wires (13)

CONCLUSIONS

Oral commissure defect reconstruction is a great challenge for the surgeons, since even more patients present relative frequently several relapses and the local tissues resources are limited. It is necessary to obtain a result that is at the

same time functional and aesthetic. An attentive evaluation of the patient permits choosing the most suitable reconstructive technique, adapted to the general status of the patient and to the local or general tissue resources.

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