

Review Article

Plastic and Maxillo-Facial Surgery

Tongue Flap in Labial Defect Reconstruction

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Abstract

The lips represent an important role in social life as they are used to ease phonetic articulation, complement the aesthetical structure of the face and, they serve as a means of giving nutrients to the body. In certain cultures, they are crucial external signs of femininity and serve different purposes. Given the complex functions of these structures, reconstruction of labial defects presents a challenge for plastic surgeons not only in the management of tumor pathologies, but also in cases of emergency post-traumatic amputations. In the present study, we shall describe a case of labial reconstruction using a tongue flap after a post-traumatic loss of tissue in the vermilion border. The surgical reconstruction technique will be discussed and then, we will present an overview of the constraints related to the treatment of the flap and finally the initial outcome of the procedures.

Keywords: Labial defect, tongue flap, myomucosal flap, intraoral pedicle.

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INTRODUCTION

Reconstruction of a labial defect is a major challenge for the plastic surgeon. The main objective is to restore the various three-dimensional structures that have been amputated and to prevent functional and morphological complications. However, this is quite common when performing oncological surgery where an emergency labial reconstruction may be necessary because of trauma [1, 2].

The reconstruction of a labial defect must guarantee the restoration of the orbicularis function and must achieve an excellence aesthetic outlook [2].

We shall discuss a case of lip defect reconstruction using a tongue myomucosal flap flap with a posterior pedicle, based on the submucosal vascular plexus.

TECHNICAL NOTE

Following a scuffle involving the complex destruction of the lower lip tissue, a 37-year-old patient was admitted to the emergency room of our hospital.



Figure 1: Emergency admission image

Examination

As observed, there is soft tissue defect on the right half of the lower lip along the vermilion border, slightly across the orbicularis muscle. It, however, exceeds the mucosal skin line below, while respecting the vestibule and the right labial commissure.

The first treatment consisted of performing an antiseptic cleaning, a paraffin gauze dressing, a broad-spectrum antibiotic therapy, and a tetanus vaccination.

We opted for the use of a right marginal lingual flap with posterior pedicle. The surgical protocol was respected, and therapeutic follow-up were clearly explained to the patient. He was also informed that the surgery will be carried out under general anesthesia. The consent was obtained from the patient. The surgical technique started with a minimal trimming of the labial defect resulting from the trauma and the loss of tissue after an antiseptic oral wash.

- A wedge was then fixed on molars 47 and 37 (The occlusal space occupied by these wedges will serve

as security and protection for the posterior pedicle of our flap)

- Flap lift and lower lip fixation by 3/0 absorbable suture
- A venous flap was observed in the two first days post-operation, then normal recoloring gradually took place. At the end of the second week, ulcerated patches appeared leading to progressive depigmentation. The nasogastric tube was removed after 72 hours as this was unbearable for the patient.
- On the 13th day, the molar wedge on the right side ipsilateral to the flap fell off
- After three weeks, the flap was withdrawn.



Figure 2: Harvesting of the flap during the surgical procedure



Figure 3: Evolution during hospitalization

The patient was reexamined nine months after. Healing was total and complete at the different surgical sites. The volume of the right angle of lower lip is

almost symmetrical to the left side with the appropriate oral continence.

The swallowing process, phonation and speech are normal with right amount of sensitivity on the flap.



Figure 4: 9 months after operation

DISCUSSION

The lips are the musculo-membranous folds which cover the convex anterior portion of the alveolar-dental arches and by their free edges limit the vestibular orifice. In a normal situation, the two lips are of equal height, corresponding to the height of the alveolar-dental arches they are intended to cover.

Each lip has an outer or cutaneous surface, an inner mucous surface, a free edge limiting the vestibular cutaneous-mucous orifice, an adherent edge attached to the corresponding jawbone and two ends which constitutes the labial commissures or corners of the lips, as they continue into the corresponding end of the other lip [2].

Reconstructive surgery in cases of labial defect must respect certain anatomical entities such as the cutaneous-mucosal junction, the commissures and the aesthetic overlays in order to obtain a better result [1, 2].

Reconstruction of the vermilion or red lip involves several options: controlled wound healing, composite skin-mucosal grafting, simple stitches, and local flaps [1].

Loco-regional mucosal flaps are often used, and the tongue flap can be a very suitable solution in certain situations. The tongue is an organ which, by its

mobility, hypervascularization and its central position in the oral cavity, constitutes a reliable site for flap harvesting.

Its direct accessibility in the oral cavity makes it a simple and easily reproducible flap with two surgical steps [3]. It has long been used to cover secondary midpalatal loss of tissue to oral-nasal communication surgery and also in the correction of cleft palate sequelae [4]. This flap by its texture is a perfectly compatible solution for lip reconstruction in certain defects that essentially affects the vermilion.

The main difficulty lies in the fact that the flap will preserve its intraoral pedicle attached to the lip for three weeks, hence the need for an interposition system between the dental arches [3, 5].

It is important to note that the protection of the pedicle during this period is essential to the viability of the flap and the discomfort inflicted on the patient as a result. For this reason, special psychological support is sometimes necessary to help the patient cope with the situation.

In spite of all, the aesthetic and functional results are highly gratifying with very few notable sequelae at the donor site [4, 6].

When observed at a distance, the only notable concern is dryness of the lip on the flap side. This is due

to a lack of hydration of the lingual organ and will require frequent application of moisturizer or Vaseline.

Furthermore, the FAMM flap (Facial Artery Musculo-Mucosal) which is a muco-muscular flap of the pedicled cheeks to the facial artery can also be considered as an alternative for reconstruction. This flap which is very accessible and easy to harvest with a large axis of rotation and very few sequelae at the site of harvesting, has seen its indications extended to the nasal cavity and the orbit. However, its use is mainly limited by the extent of the labial defect to be covered.

CONCLUSION

Considering the texture of the tongue, this flap is the best option for reconstruction surgery in the case of red lip amputation. It is very simple and easy to reproduce. Historically, it has been used in the reconstruction of labial defect involving loss tissue. Nevertheless, it necessitates the use of two surgical steps and the vascular richness of the tongue permits the harvesting of multiple flaps with direct closure of the donor site [1, 6].

The main difficulty lies in the management of the pedicle which could be accidentally compressed by the teeth when the lost tissue to be reproduced is located in front of the two dental arches.

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