

Interest of the tongue flap in the repair of endo buccal substance loss

Abstract

Introduction: The tongue flap is a simple, reliable, but little-used technique, presenting an excellent alternative for reconstruction of oral cavity substance loss.

Materials, methods: We carried out a retrospective study over a 3-year period, involving 10 cases of patients presenting with oral substance loss, collated within the maxillo-facial and aesthetic surgery department of CHU MED 6 in Marrakech.

Results: Our therapeutic arsenal includes tongue flaps: distal, proximal and ventral pedicle, with indications for several topographical regions. The procedure was well tolerated by our patients, and our results showed excellent short-term healing, as well as the flaps proving viable in the long term.

Discussion: the tongue flap is a simple, reliable and easy technique that has been abandoned in favor of more complex and sometimes more deleterious techniques for the patient. Based on our experience and reviewing the experience of others, it is clear that the tongue flap is a useful and versatile option for the repair of endooral SDB. With longer follow-up, the key patient outcomes will become more evident.

Conclusion: The relative simplicity of this technique and its potential advantages over more established techniques make it an ideal solution when resources are limited.

Keywords: reconstructive surgery, flap, tongue, endobuccal loss of substance

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Introduction

The repair of endooral substance losses can be difficult due to the different characteristics of the region, the importance of preserving anatomy and function, and the shortage of available donors. According to the literature, the tongue flap is a reliable and effective means of reconstructing this loss of substance, thanks to its central location, mobility and hyper-vascularization. This is in contrast to other more complex means, which have a higher postoperative morbidity rate, higher overall cost and more severe sequelae.¹

The aim of this retrospective study is to review the technique of the tongue flap, to establish its indications, to establish a decision-making algorithm governing our conduct, and finally to propose reliable recommendations.

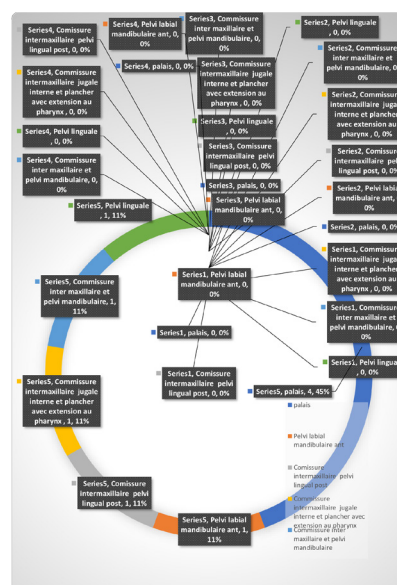
Materials and methods

This is a retrospective study, conducted over a 3-year period from February 2018 to March 2021, on 10 patients with endobuccal substance loss repaired by tongue flap, within the maxillofacial aesthetic surgery and stomatology department of Ibn Tofail Hospital at Mohamed VI University Hospital Center in Marrakech, under the aegis of the "SOS FACE MARRAKECH" association.

Our study parameters were epidemiological (Age, Sex, Number of previous surgeries, Age of SDB diagnosis, Age of onset of SDB, Etiology of SDB?) Clinical (Type of SDB, Location, Follow-up time, Referral method) Therapeutic (Type of flap with distal or proximal pedicle, Flap size, Weaning time) and Evolutive (Quality of healing, Improvement in phonation, speech and feeding, Disappearance of nasal regurgitation, and Immediate (infection, haemorrhage, oedema.) and late complications (flap release, necrosis, etc.).

Results

The mean age of our patients was 43.9 years, with extremes ranging from 1 to 89 years, with a clear female predominance (in our series, 6 of the patients were female versus 4 male, i.e. a sex ratio of 1.5). The topography of the lesions is distributed as follows: 4 Palate /Pelvi-labial-anteriormandibular/ Intermaxillary commissure pelvi lingual post/ Intermaxillary commissure internal jugal and floor with extension to the pharynx/ Intermaxillary and pelvi mandibular commissure/ Pelvi lingual (Figure 1).



The main Etiology was squameuse cella carcinome of the oral cavity, which was represented clinically mainly by a bleeding ulceration on contact and pain, and 4 cases of cleftlip and palate, whose size varied in length from (7 to 20 mm), but did not exceed 2cm in width, and which was represented clinically by nasal regurgitation, hypernasality and swallowing disorders.

We used a tongue flap: 1-Marginolingual with distal pedicle for patients with palatal SDB. 2- Marginolingual with proximal pedicle for patients with maxillary SDB. 3-Ventral for patients with mandibular SDB.

The length of the flap was designed so that 1-2cm of extra tissue covered the posterioredge of the PDS; the wich was dictated by the width of the defect plus 20%.

In our study, we used tongueflaps 8.4 to 25 mm wide and 3cm to 4cm long (Figures 2-10).



Figure 2 Case 1 shows a 20mm FLP covered by a tongueflap: before and after reconstruction.



Figure 3 Patient with a 10mm FLP covered by a tongueflap: before and after reconstruction.



Figure 4 12 mm FLP in a patient from our training program: before, during and after reconstruction with a distal margino-lingual flap.



Figure 5 7 mm FLP in a patient from our training program: before and after surgery



Figure 6 Pelvi labial and mandibular PDS ant post-tumor excision for squamous cell carcinoma: before, after excision and reconstruction with a ventral tongueflap.



Figure 7 Pelvi mandibular PDS in a patient before tumor removal and after reconstruction with a tongueflap with a margino lingual pedicle.



Figure 8 PDS internal jugal intermaxillary commissure and floor before excision, intraoperatively and after reconstruction with a proximal-pediced marginio lingual tongueflap.



Figure 9 PDS inter maxillary and pelvi mandibular commissure following tumour removal and after reconstruction.



Figure 10 Pelvi lingual PDS following tumor exeres photo before and 6 months after reconstruction.

Discussion

The tongue is a musculo-mucosal organ that forms part of the floor of the oral cavity and part of the anterior border of the oropharynx. Made up of 17 or more muscles and innervated by 5 pairs of cranial nerves, where as the face is only innervated by 2, it is quite simply

an exceptional and complete organ, as it performs multiple motor, sensory and sensory functions. A perfect understanding of its anatomy, bio dynamics and growth provides a better understanding of the etiopathogenesis and processes involved in maxillofacial deformities, occlusion, elocution, swallowing and oral disorders.² With its perfectly symmetrical muscular, nervous and vascular lingual component, this is of considerable clinical importance in surgical techniques such as glossotomy, flaps and frenectomy, for example.³

In the literature, the age range for substance loss varies from 6 to 60 years,⁴ with a clear male predominance.⁵ In our series, there was a predominance of females, with a sex ratio of 0.33.

Because of the tongue's rich blood supply and flexible nature, tongue flaps can be taken from the dorsal, lateral or ventral surfaces of the tongue.

Numerous authors have proposed different techniques for closing endobuccal substance losses: composite flaps with bone or cartilage graft,⁶ remote flaps (free arm flap,⁷ free facial flap⁸) or, more recently, expansion with Foley probes, used by Abram.⁹

The advantages of using a tongue flap lie in its simplicity and efficacy,¹⁰ the reliability of the richly vascularized flap, the few after-effects on the tongue and the short duration of general anesthesia, and the possibility of combining it with other reconstruction techniques (bone grafts, etc.).

The disadvantages of these techniques are minimal compared with the advantages, which are: Two-stage surgery; discomfort lasting around 2 to 3 weeks due to limited mouth opening and reduced lingual mobility; the presence of a nasogastric tube for around two weeks; and hospitalization lasting around 3 weeks, with the resulting conflict. This last problem can be partially solved by organizing a day hospitalization, or by educating the patient and his or her family so that they can return home and be followed up on an out-patient basis during the intervening period.

This technique appears to offer an alternative to some of the more complex methods, which are associated with higher postoperative morbidity, greater overall cost and heavier sequelae.

The distal¹¹ or proximal marginolingual flap is the most widely used, but other types of tongue flap are also possible: the distal bi-pedicled hammer head flap, the dorsal flap^{12,13} and the ventral flap.

Conclusion

The technique of closing endobuccal substance loss using a tongue flap is simple and reliable, with satisfactory results. In our opinion, it is the technique of choice, an alternative to more complex techniques that are sometimes more harmful to the patient.

Acknowledgments

None.

Conflicts of interest

Authors declare that there is no conflict of interest.

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