

Use of the Facial Artery Based Buccinator Musculo-Mucosal Island Flap for Reconstruction the Upper Vestibule: A Case Report

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Abstract

Case Report

This article presents a documented case of upper vestibular reconstruction using a musculomucosal buccinator flap focused on the facial artery. This is an 80-year-old patient who presented with an ulceration in the labio-naso-jugal region. The biopsy revealed that it was a sclerodermiform basal cell carcinoma. Surgical excision was performed, leaving an extensive multi-tissue loss of substance (mucosa, muscularis and cutaneous). This required first the reconstruction of the vestibular defect by FAMM flap then reconstruction by a frontal flap. The procedure allowed a satisfactory functional and aesthetic reconstruction, without major complications at the donor site or the reconstructed area. The objective of the study is to describe the harvesting technique and to demonstrate the efficacy, versatility and ease of use of the FAMM flap in reconstructions requiring good mucosal compatibility, while limiting complications.

Keywords: Intraoral reconstruction ; Facial Artery Musculomucosal Flap; Operative Technique.

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INTRODUCTION

Facial artery-oriented buccinator musculomucosal flap (FAMM) is a flap used for the reconstruction of a wide range of intraoral defects. It includes the mucosa, submucosa, part of the buccinator muscle, the deep plane of the orbicularis muscle, as well as the facial artery and venous plexus.

The results of the clinical case and the available data confirm that the FAMM flap is an option to be preferred and popularized in reconstructive surgery of the oral cavity.

OBSERVATION

The case presented is that of an 80-year-old edentulous man, type II diabetic, with a left nasolabial-jugal tumor, infiltrating, bleeding, approximately 2.5 cm in diameter (Figure 1), non-osteolytic on CT scan. An initial biopsy under local anesthesia was in favor of a sclerodermiform basal cell carcinoma.

Surgical treatment was performed under general anesthesia consisting of a wide transfixing excision removing the ail of the nose, the entire left white hemi-lip as well as the upper vestibule, and part of the jugal region while respecting the columella and the red lip (Figure 2).

The large multi-tissue loss (cutaneous, muscular and mucous) was filled with two flaps. First, reconstruction of the upper vestibule (mucous tissue) by a musculo-mucous flap of the buccinator centered on the facial artery with an inferior pedicle. Then we completed the reconstruction with a frontal flap to repair the musculo-cutaneous defect.

We present our sampling technique knowing that the facial artery was identified and ligated during tumor excision:

- Placement of retractors to expose the jugal mucosa;
- The anterior edge of the flap is drawn 1.5 cm from the labial commissure.
- The upper rim is located below the orifice of the Steno canal
- The anterior border of the masseter marks the posterior limit.
- The width of the flap is 2 cm and the length required to repair the upper vestibule;
- Infiltration of the incision lines with xylo-adrenaline;
- The initial incision is made at the posterior edge of the flap through the mucosa alone.
- This is followed by an incision through the anterior edge of the flap through the mucosa and the buccinator muscle.

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- An incision of the upper limit of the flap while keeping in view the facial artery already located and ligated
- The base of our flap is anterior (in front)
- The detachment can be done while keeping the facial artery visible
- The facial vein is not identified. So we kept a reasonable amount of soft tissue at the base to ensure good venous return;
- After incision of the posterior edge of the flap, the remainder of the flap is elevated in the plane lateral to the artery (Figure 3).
- It is important to respect this plane so as not to damage the motor branches of the facial nerve. The facial artery must be preserved along the entire length of the flap and must remain in contact with the buccinator;
- Rotation of the flap allowed the vestibular defect to be filled (Figure 4).
- The closure of the sampling site was done in two layers, bringing the buccinator and then the mucosa together.

Filling of the skin defect with a frontal flap (Figure 5). Donor sites were closed with simple suture, without any tension (Figure 6).

The postoperative course was uneventful with no flap distress, but simply a classic congestive appearance. Oral feeding was resumed on day 1.

It is also important to specify that postoperatively, phonation is normal as well as feeding.



Figure 1: Patient images showing the tumor lesion and its extent



Figure 2: Tumor excision leaving a multi-tissue loss affecting the nasolabial-jugal region



Figure 3: The anterior-based buccinator flap is removed and ready for insertion into the defect: facial artery



Figure 4: Anterior-based buccinator flap is inserted into the superior vestibular defect



Figure 5: Harvesting of the forehead flap and filling of the loss of substance



Figure 6: Result after placement of the FAMM flap and frontal flap

DISCUSSION

Reconstruction of limited oral cavity deficits can be achieved using simple techniques, such as primary closure or the use of local flaps, including the buccinator musculomucosal flap, supplied by the facial artery [1].

This flap, both flexible and practical, is particularly suitable for the reconstruction of soft tissue defects, whether in the nasal septum, oral cavity or oropharynx [2].

It allows mucosa to be replaced with mucosa, thus guaranteeing superior compatibility and adaptation to those of skin flaps [3].

Donor site complications are rare. This flap is distinguished by its high malleability, making it ideal for filling complex defects. Published studies confirm that complications related to the FAMM (Facial Artery Musculomucosal) flap are uncommon and rarely serious. Total loss of the flap remains exceptional, provided that it is verified that the pedicle is neither compressed, under tension, nor twisted during placement [4].

The advantages of the flap are [5]:

- Low risk of complete or partial necrosis, even after radiotherapy;
- Reduced complication rate;
- The many potential reconstruction sites due to its length and large rotation arc;
- Systematic closure of the donor site if the width of the flap is less than 3 cm;
- Ease and speed of collection and installation;
- Proximity between the donor site and the area to be reconstructed;

- Mucosal reconstruction using a similar tissue, without hair, and limiting the aesthetic after-effects associated with skin flaps;
- No retraction

The disadvantages of this flap are [6]:

- Limited size;
- Possible need for surgical revision to section the pedicle;
- Temporary placement of a dental callus in the presence of molars, in order to avoid biting on the pedicle;
- Flap thickness may reduce vestibule depth, interfering with the use of dental prostheses.

CONCLUSION

Facial artery-oriented buccinator musculomucosal flap is a versatile and effective option for the reconstruction of limited oral cavity deficits. Its simple, rapid and reliable harvesting technique deserves to be further popularized.

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