

Palatal Reconstruction after Major Surgical Excision

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ABSTRACT: Oncological excision surgery in the oral and maxillofacial area amputates important structures or open cavities (sinus, nose, mouth) which are usually "closed". The disappearance of an eye, tongue, soft palate or cheek, raises serious issues regarding the resumption of partial or total functions of that region, in terms of social reintegration of the patient. In the cephalic extremity, the reconstruction material is limited, so specialists resort to resources located away from the defect to achieve closure. The temporal flap isn't used very often, although this procedure has the advantages of a shorter time for surgery and for healing.

KEYWORDS: Temporal myofascial flap, facial reconstruction, maxilla oncology

Introduction

The temporal flap may be performed for the reconstruction of the middle floor of the face.

After surgical removal of malignant process at the face midsection, this flap may be used due to its natural position, and because it allows a good tissue replacement [1,2].

In time, it was established that after the tendon from the coronary process is resected, the flap can be elongated 2 to 7cm, depending on the surgical needs.

Knowing how to perform the rotation of the vascular stem without getting to vascular insufficiency [3], the procedure is much safer, so it is relatively easy to cover larger defects by using this flap.

Lifting the muscle together with the deep temporal fascia, with its two layers and with the preserved stem of the superficial temporal artery and vein provides a safer technique and a longer length of the lifted flap with double vascular stem.

So, this type of flap can cover defects exceeding the median line, having a good blood supply and a high mass of filling [4].

Case report

We recruited a subject who attended our clinic, diagnosed with a right maxillary tumor.

The patient was informed on study objectives and a written informed consent was obtained for publication of his data.

The study was approved by the Ethical Committee of the University of Medicine and

Pharmacy of Craiova and the protection of personal data has been ensured.

The subject presented with a deformation of the right region of the cheek and one at the right hard palate level.

The symptoms started 4-6 months previous to the time of clinical presentation.

Suspicion of tumor was confirmed by imaging investigations.

The patient was informed about the therapeutic options for postoperative defect coverage, including the use of temporal myofascial flap, and for which the patient agreed.

Weber Ferguson approach was used.

After tumor excision, what was left was a cavity stretched to the nasal septum, all the way up to the eyeball, to the nasopharynx and bounded on the lateral by the soft tissue of the cheek, with extensive communication with the oral cavity.

In this way, the oral cavity (without half of the upper wall), the maxillary sinus (which was largely eliminated), the nasal cavity (without the side wall) and the orbit (without the floor) have come to communicate, becoming a very large cavity (Figure 1).



Figure 1. Postoperative defect.

The temporal myofascial flap harvesting was done using a hemi coronary approach, starting from the pretragal right area and continuing with the incision over the ear in the temporally region bypassing the temporal muscle.

The fascia dissection continues the superior temporal line beyond the edges of the temporal muscle.

Then there is a maneuver that raises the muscular belly from the bony plane, taking care not to injure the temporal vessels and not to damage the structure of the deep fascia (Figure 2).

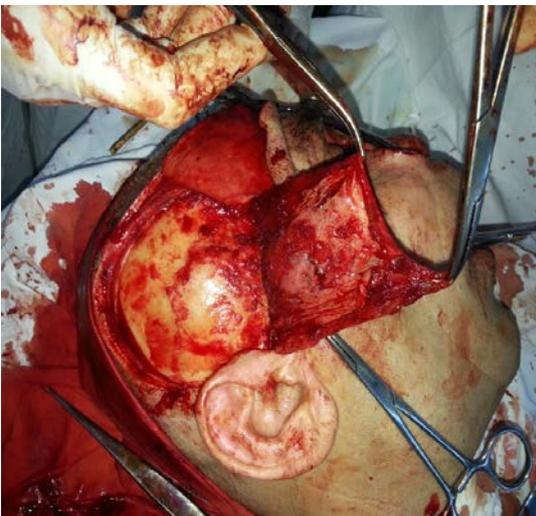


Figure 2. Temporal flap lifted.

The flap was tunneled under the temporo-zygomatic arcade, medial to the coronoid process, to be brought into the oral cavity.

A further elongation of the flap was obtained by resecting the coronoid process.

Once brought to the resection site, the muscle belly was then sutured into the defect, initially on the midline, then on the posterior edge and, finally, to the cheek mucosa, covering the postoperative defect and closing the cavity obtained after tumor excision (Figure 3).

The muscle was left uncovered in the oral cavity, and its epithelialization with mucosa followed in the coming weeks.

Its closing was tight and conforms a better palate than any other flaps for this situation.



Figure 3. Temporal flap into the receiving site.

At the donor site, even if symmetry is affected, major esthetic disorders cannot be noticed, and the skin scar and depression are masked by local hair.

Discussions

The defects left behind the extensions of the maxillary tumors are important.

For this, a complex reconstruction is required, with the fragment placed in the receptor site requiring sufficient vascularization.

The temporal myofascial flap is an interesting alternative for these situations [2].

Its vascularity is good [3], so the risk of ischemia is reduced to a minimum.

Regarding the subject of this study, flap ischemia has not been encountered either immediately after surgery or subsequent controls.

It perfectly integrated into the receptor site, providing the patient with a quick resumption of mastication and phonation functions, as described in the literature [5].

Another advantage of this flap is its large dimension, which makes it highly usable in covering large defects (sometimes it can fill a bilateral defect palate).

In this case report, the temporal myofascial flap was used to fill a defect of almost 7cm in length and 4cm in width.

Similarly, Abubaker and Abougzia reported closing palate defects up to 6x5cm, with no complications [6], but Brown and Shaw described that the temporal flap can be used for vertical maxillary defects (unless they are not encompassing orbit or nasal bones), horizontal palatal defects (unless they are not wider than half of the width of the palate) [7].

This flap offers good functional outcomes for speaking and swallowing, re-establishing the patient's functions.

We report that there was no problem to restore these functions to our subject.

Also, literature describes the same status we achieved, regarding to patient's phonation or mastication [8,9].

Conclusion

The maxillary reconstruction using this flap has the additional advantage that the two areas are in the same surgical site, so a single surgical team is necessary to perform the surgery.

Also, the temporal myofascial flap has a certain disadvantage, represented by the fact that the aesthetic aspect of the donor site is deficient.

Conflict of interests

None to declare.

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