Scholars LITERATURE

La Prensa Medica Argentina

Research Article

DOI: https://doi.org/10.47275/0032-745X-383
Volume 108 Issue 6

Reconstruction with Temporary Muscle Flap in the Absence of the Middle Third of the Facial Region - Our Experience in a Medium Complexity Hospital

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Abstract

Introduction: Temporalis muscle vascularized flaps are a valid therapeutic option for the reconstruction of defects in the facial region after surgical resections. It is an acceptable alternative to free transfer flaps when these cannot be used because of the patient's performance state and base pathologies. Or because of the lack of a microvascular surgeon.

Objectives: To describe experience applying this kind of flaps for the reconstruction of 7 patients, with defects in palate orbit and yugal mucose after respective surgeries for various pathologies.

Materials and methods: Retrospective revision of patients in the general department, of Jose R Vidal Hospital (Corrientes - Argentina) who underwent surgery during the period between January 2019 to January 2021. A total of 7 patients underwent immediate reconstructive surgery using a temporalis muscle flap.

Results: 7 patients (4 males and 3 females) underwent respective surgery for different malignant (6) and benign (1) with a median age of 60. Two flaps were used for defects of the orbitary region and soft tissue and, six for defects of the oral cavity (in one patient both temporalis muscles were used. The procedure was successful in all cases, and minor complications were presuppose-operatory pain, hematoma, trismus, excavation of the donor region) all procedures resulted in surgical margins of lesion of malignancy.

Discussion: Reconstructive surgery using a vascularized flap of temporalis muscle is an excellent alternative for regional flaps with good results and a high success justified because of its a good irrigation. Besides the proximity between temporalis muscle and the maxillofacial region, possibilities a flap rotation of up to 180 grades without compromising its vitality it is also useful for reconstruction in a single surgery shortening intra-operatory time while avoiding repositioning of the patients during the procedure.

Conclusions: Temporalis muscle flaps are a valid option to free osteo- mayo- cutaneal flaps for mixed defects (involving bone and soft tissue) of the medium third of facial region after resective surgeries when the latter cannot be carried and because of various aspects of little performance status base pathologies and lack of microvascular margin.

Keywords: Temporalis Muscle Flap Reconstructions; Medium Complexity Hospital

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Citation: Ayala LMI, D'Angelo MA, González MA, et al. (2022) Reconstruction with Temporary Muscle Flap in the Absence of the Middle Third of the Facial Region - Our Experience in a Medium Complexity Hospital. Prensa Med Argent, Volume 108:6. 383. DOI: https://doi.org/10.47275/0032-745X-383

Received: December 05, 2022; **Accepted:** December 21, 2022; **Published:** December 26, 2022

Introduction

The pediculated flap made with temporal muscle is a valid therapeutic option for the reconstruction of defects of the facial region after surgical resection, it is an acceptable alternative to free flaps when they cannot be used either by the status performance or pathology of Base of patients to treat or for not having the microvascular surgeon. It has been used for more than 100 years, implemented, and described for the first time in 1895 by Lentz.

Anatomically it is a very reliable regional flap for the reconstruction of medium-sized defects of the middle third of the facial region. It presents a rich vascularization given by two independent vascular territories, participating the previous and posterior deep temporal artery, branches of the internal maxillary artery and, to a lesser extent of the medium temporal arteries, branch of the superficial temporal artery. Allowing the deployment, separation of components thereof and providing high degree of resistance to bacterial infection of the flap. As long as morphology and closeness to neighboring structures, provides volume in deep and unimportant defects, as well as padding of vital structures (nerves, glasses, bones and prostheses), allowing recovery of palatine competition through the separation of cavities nasal and oral. This muscle can be molded to achieve the desired shape and volume.

Objective

Describe our experience in the use of this flap for reconstructive surgery in 7 patients -in one of which the 2 temporary muscles were used

-, who presented defects in the middle third of the facial region after ablative surgery due to different benign pathologies Like malignant, in an age group of 25 to 68 years of age. All of them are performed by the General Surgery Service of a Hospital of Medium complexity.

Material and Method

The work is based on a retrospective review of the patients of the General Surgery Service of the José Ramon Vidal Hospital, Corrientes-Argentina operated in the period from January 2019 to January 2021. In this period of time, 7 patients underwent Immediate reconstructive surgery with temporary muscle flap in defects of the middle third of the facial region.

The temporal muscle characterized by a rich vascularization has two pedicles, one previously located 1 cm ahead of the coronoid process and 2.4 cm below the cygomatic arch, while the posterior pedicle is 1.7 cm after the process Coronoids and 1.1 cm lower than the zygomatic arch. Each of them has 2 cm in length and penetrates the muscle through its deep face. The average temporal artery, runs lateral to the muscle surface, irrigating the temporal fascia and some of its branches, this was not considered its conservation in the face of the flap. A hemicoronal incision with preauricular extension and subgaleal dissection was performed in the 10 patients, exposing the temporal muscle, which is subperioally released from the temporal grave from the temporal crest down and previously from the lateral edge of the orbit taking special care in the Lower region near the cygomatic arch to preserve the pedicle (Figure 1 and Figure 2). For the reconstruction of ex-terraimentor. In cases where the muscle was used for the repair of the oral cavity after the surgical resection of the upper maxillary bone (05), this was associated with the use of preformed titanium orbital mesh. The synthesis of the Dairy Zone was performed by plans, in the first instance, the subcutaneous cell tissue is approached by means of resorbable thread (polyglactin 2.0) and subsequent synthesis of skin with non-absorbable thread (polypropylene 2.0). It was placed in all cases fenestrated tubular drainage with subsequent extraction prior to external, and compressive bandage after the closure of the skin on the temporal area. Only 10% of patients required internment in the intensive care unit for a period of 72hrs. For presenting vasoactive drug requirements at low doses. Among the complications, the most frequently presented by patients was postoperative pain in the giving area, resolved with medical treatment. The high on average was given at 7th. Postoperative day, citing them a week by the external office for evaluation and extraction of points.

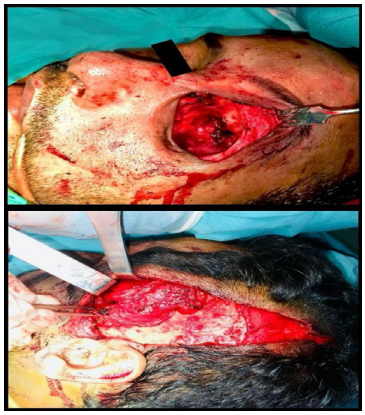

Figure 1: Hemicoronal approach for the approach of temporary grave after the orbital exemption.

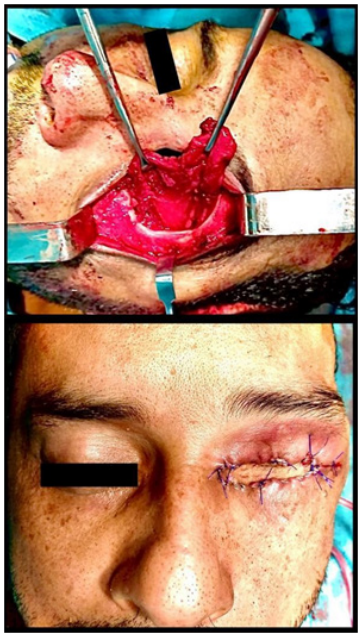

Figure 2: Reconstruction with temporal muscle flap.

Results

In the period included from January 2019 to January 2021, 7 resective surgeries of the maxillofacial region were carried out in which the homolateral and bilateral temporal muscle flap was used (in one of the cases) as a reconstructive technique. The middle Ages corresponded to 60 years, with an age range from 25 to 67 years; 3 females and 4 males. Six of them had a preoperative diagnosis of evil pathology (4 locally advanced epidermoid carcinomas, 1 sarcoma, 1 undifferentiated palate carcinoma), and only one carried benign pathologies (cavernous hemangioma of the left maxillary sinus). A total of 2 orbital ex-experts were performed with osteotomy of the outer wall of the orbit for flap passage, 4 maxilectomies: of which, one was bilateral in which both temporary muscles were used for the reconstruction of the defect. A right maxillectomy without the osteotomy requirement of the cygomatic arch, and two left radical maxillectomy with titanium mesh placement for the reconstruction of orbit (Figure 3 and Figure 4). 1 left

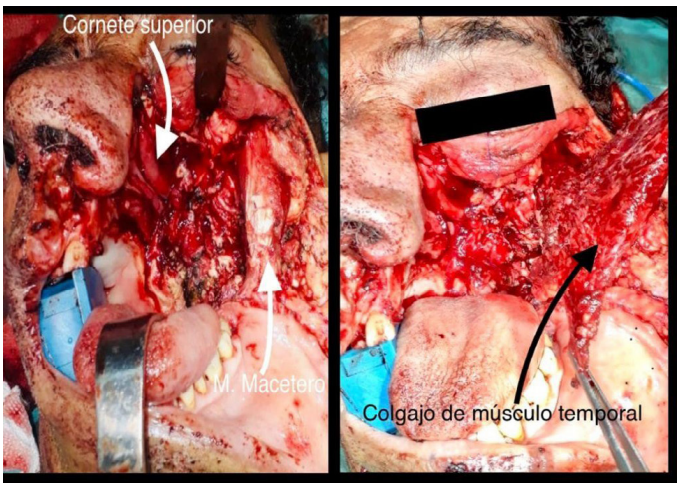

Figure 3: Left radical maxillectomy with reconstruction with temporal muscle flap.

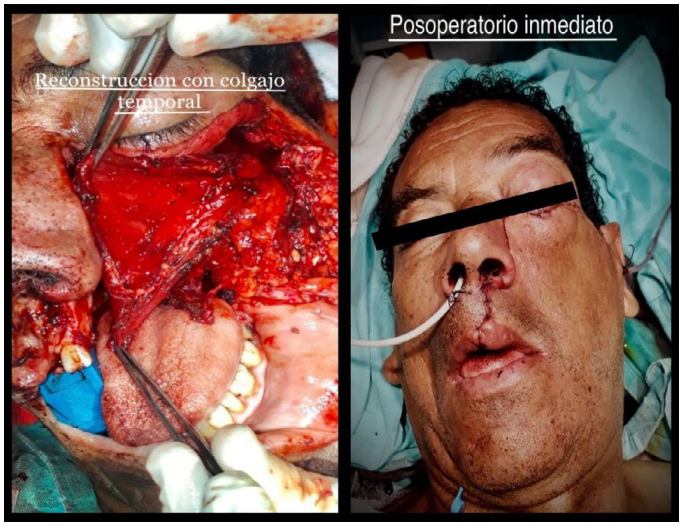

Figure 4: Reconstruction with a temporary muscle flap after ablative surgery of the left maxilla.

partial patectomy without osteotomy of the most emptying cygomatic arc Ganglion.

All defects were rebuilt with the homolateral temporal muscle to the lesion and a single bilateral case.

In two of the cases with malignant pathology they received neodyuvance (induction chemotherapy), 5 received radiotherapy and postoperative chemotherapy. A patient performs total abandonment of treatment in the mediated postoperative period. It begins orally via on average on the tenth postoperative day, with the previous intraoperative placement of a nasogastric probe for supplementary food.

Among the complications observed in the mediate postoperative period were, postoperative pain in 2 cases that yielded common analgesics, infection of the receiving zone in 1 of the cases, hematoma of the giving zone in 1 case, of spontaneous resolution. The complication found in the remote postoperative period was a limitation of oral opening in 28% and depression of the giving area in the vast majority of cases (85%). In follow-up, 4 of the patients undergoing ablative and immediate reconstruction surgery obtained a period free of disease until the day of the date. 3 babies were presented, of which, an Obito at 3 months by cervical recurrence and at the level of the core raquis (totally abandoning the treatment), an ose at 8 months for recurrence cervical and pulmonary ganglion By recurrence nasopharyngeal. In none of the cases, partial or total necrosis were observed.

In all cases the carving of the flap that was performed was pure muscular, discarding the temporal fascia as part of it, and the total volume of the muscle was included.

Discussion

Much of the head and neck resections require an immediate reconstruction to the extraction of the surgical piece, having the surgeon have a wide variety of flaps available, whether local, regional, or micro-surgical.

Reconstructive surgery with a pediculated flap of temporary muscle is an excellent regional flap alternative with good results, it has a high success rate justified by its good vascularization. In addition, the proximity of the temporal muscle with the maxillofacial region and its insertion contributes to obtain an arc of rotation up to 180 ° without compromising its vitality. It is useful for reconstruction in a surgical act, shortening time intraoperative and without positional changes.

The associated and expected complications of this procedure are Transitional difficulty in chewing, trismus, bruises in the gundure zone, infection of the surgical site, dehiscence of the flap and the surgical wound, paralysis of the front branch of the facial nerve, depression of the area Dailer, impossibility of the use of dental implants; being one of the most complex the necrosis of the flap.

The choice of the flap to be used depends on the pathology to be treated, the extension and location of the tumor, the surgeon's experience, restoring both the anatomy and the aesthetics of the patient.

Conclusion

The temporary muscle flap is a valid option to the free-line-cutaneous free flags for mixed defects (bone and soft tissue) of the middle facial third after ablative surgery, when the latter cannot be implemented, presenting a high rate of success, without major requirements in terms of hospital infrastructure. Thus, allowing anatomical, functional, and aesthetic restoration, granting the swimming and phonatory capacity.

Declarations

The authors declare that they have no conflicts of interest, that the work has been approved by the ethics committee responsible in the workplace, and do not declare means of financing of the work carried out.

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