

Aesthetic and Functional Results of Flaps Reconstruction of Lips

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Abstract

Introduction: The lips represent the main anatomical unit of the lower third of the face. Therefore, its surgical reconstruction represents a challenge for the surgeon, who seeks excellence in the restoration of facial functions, aesthetics and appearance. Many reconstruction techniques have been described, each with its advantages and disadvantages.

Objectives: To evaluate the aesthetic and functional results in all patients operated on for oncological lesions of the lips that required local, regional and free flaps.

Design: Retrospective observational.

Place of Application: Public hospital for tertiary care in tumors.

Material and Method: 19 patients, 11 women and 8 men, mean age 65 years (31-77). All patients with lip tumor pathology were included, with defects greater than 1/3 of the lip. There were 10 squamous carcinomas, 7 basal cell carcinomas, 1 venous hemangioma and 1 actinic keratosis. At resection, one patient required a marginal mandibulectomy and another a partial maxillectomy. Lymph node dissection was performed in 2 patients. As a reconstruction, a bilobed flap, 3 advancement flaps, 1 commissuroplasty with a rhomboid flap, 2 with Abbe-Esländer, 5 with Karapandzic, 2 with cheek, 1 Bernard-Burow and another with Fujimori, and 3 radial free flaps with long palmar were performed. All patients were evaluated in the immediate postoperative period, emphasizing the vitality of the flaps and healing, and functional and aesthetic results in the late postoperative period.

Results: All the flaps survived. 4 patients suffered surgical wound dehiscence. Regarding the functional results, complete oral continence was obtained in those defects, which could be reconstructed with flaps obtained from the residual lip. Major defects reconstructed with cheek or neighborhood flaps, or especially with a radial free flap with a palmar longus tendon, obtained very good results. Three patients suffered microstomia. Speech intelligibility was satisfactory in all. The esthetic results were rated as excellent, especially in the free flaps.

Conclusion: Satisfactory results, both functional and aesthetic, have been obtained in the reconstructions of large lip defects, with the radial microsurgical flap using the palmar longus tendon as a tension harness, achieving oral continence and adequate suspension. The choice of one or the other flap will depend on each patient, age, risk factors and the choice and experience of each surgeon.

Keywords: Lip Cancer; Reconstruction; Results

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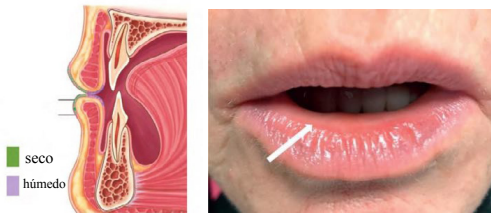
Introduction

The lips represent the main anatomical unit of the lower third of the face. Therefore, your Surgical reconstruction represents a challenge for the surgeon, who seeks excellence in the restoration of facial functions, aesthetics and appearance [1]. Many reconstruction techniques have been described, each with its advantages and disadvantages. The aesthetic results include respect for the regions and units, the color of the flap, and patient satisfaction. Among the functional results, static suspension and oral continence are determined.

In the past, the lips were part of the oral cavity, however the clinical

behavior of many tumors was more similar to those of the skin than to those of the oral cavity.

Therefore, the new staging of AJCC8 presents changes based on the dissemination patterns of tumors located at this site. Each vermilion is divided into two regions. The visible border of the vermilion, also called dry vermilion, is covered with keratinizing squamous epithelium, which is why it is classified according to the criteria for skin cancers. The mucosal region of the lip that is in contact with the opposite lip, also called moist vermilion, is mucous tissue with salivary glands, for which the tumors were classified by their behavior within those of the oral cavity [1].



Although the majority of lip cancers are squamous cell carcinomas, it is followed in frequency by basal cell carcinomas, melanomas, and minor salivary gland cancer. And soft tissue sarcomas are extremely rare [1].

The objective of this work is to evaluate the aesthetic and functional results in all patients operated on for oncological lesions of the lips that required local, regional and free flaps.

Material and Methods

19 patients, 11 women and 8 men treated surgically for tumor pathology of the lips, were studied in the period June 2016 to June 2020, with a mean age of 65 years (31-77). All patients were reconstructed at the same time of resection.

All patients with tumor pathology of the upper and lower lip and commissures were included, both of the cutaneous surface and of the dry and moist mucosa or vermilion, with defects greater than 1/3 of the lip, which required a local flap for reconstruction, regional or free.

The pathologies included 10 squamous carcinomas, 7 basal cell carcinomas, 1 venous hemangioma, and 1 actinic keratosis. At resection, one patient required a marginal mandibulectomy and another a partial maxillectomy. Seven patients who underwent wedge resection and simple closure without flaps were excluded.

Left supraomohyoid lymph node dissection was performed in one patient and bilateral with IV extension to the other, both with pre-surgical fine needle aspiration (FNA) lymph node dissection positive for T4 squamous carcinoma of the lower lip.

Regarding the reconstruction, a bilobed flap, 3 advancement flaps, a commissuroplasty with a rhomboid flap with a bichat ball, 2 Abbe-Esländer flaps, 5 Karapandzic flaps, one of them inverted, 2 cheek flaps, one of them were performed. They Bernard-Burow and the other a Fujimori flap with a tongue flap for vermilion reconstruction, and 3 radial free flaps with long palmar, one of which underwent dermopigmentation in the late postoperative period. 2 patients required adjuvant radiation therapy.

All patients were evaluated in the immediate and early postoperative period, emphasizing the vitality of the flaps and healing. And in the late postoperative period, the functional and aesthetic results were evaluated, in addition to the usual oncological follow-up. Follow-up was from 3 months to 4 years.

Results

All the flaps survived, only 2 presented partial loss, a Karapandzic and a radial free. Tables 1 and 2 show the demographic characteristics of the patients, size of the defect, reconstruction used, complications, aesthetic and functional results. 4 patients suffered surgical wound dehiscence, 2 Karapandzic, 2 radial flaps, 3 of which required reoperation for their solution. Two flaps suffered scar retraction, which affected labial continence, 1 Karapandzic and 1 superior lip

advancement flap.

Regarding the functional results, complete oral continence was obtained in those defects, which could be reconstructed with flaps obtained from the residual lip such as Abbe-Esländer and Karapandzic. Major defects were reconstructed with cheek or neighborhood flaps, such as Fujimori, Bernard-Burow, or radial free flap. With the Fujimori flap, complete labial continence was not achieved, whereas in similar defects reconstructed with a radial free flap with a palmar longus tendon, very good results were obtained. Three patients suffered microstomia, 2 with a Karapandzic flap, and 1 with a bilateral advance, 2 of them class III who could tolerate it, by allowing them to introduce a spoon of food without difficulty, one was only class IV requiring a new surgical intervention for its resolution. Speech intelligibility was satisfactory in all, except in the patient who underwent the Fujimori flap, with alteration in the phonetic-phonological aspect of the language due to lack of lip competence and lingual interposition. This patient also had difficulty adapting a dental prosthesis due to the absence of an inferior gingivolabial groove.

The aesthetic results were classified as excellent, satisfactory and regular, obtaining excellent results in almost all cases in which the residual lip was used as a flap, and in which very satisfactory cheek flaps and radial palmar flap were used in all cases, both for patients and for the medical team. Although the color and volume of the flap obtained excellent results in the 2 cheek flaps, they were more satisfactory in the free flaps. The expression of the face and oral competence were superior in the 3 radial flaps, being able to respect, in all cases, the aesthetic units.

Based on the foregoing, it can be said that in this sample, excellent functional and aesthetic results were observed with residual lip flaps, such as Abbe-Esländer and Karapandzic for the reconstruction of minor injuries. For larger injuries that required cheek flaps, such as Fujimori and Bernard-Burow, or free flaps such as radial. In the latter, the great advantage generated by the palmar longus tendon as a tension harness on the reconstructed lip is highlighted.

Two cases had a recurrence of their local pathology, one of them distant, pulmonary metastases, dying after one year of follow-up. Three patients died during follow-up, one is the one referred to above and two due to causes other than the pathology.

Discussion

After resection, the best reconstruction is achieved with the remaining labial tissue, but in large defects this is not always possible. What Luce and Fujimori recommend is, in descending order, flaps from the remaining labial tissue, from the opposite lip, from the adjacent cheek, and finally from distant tissues [2,3].

However, reconstruction should be attempted taking into account the sphincter function, to maintain an adequate sensation to prevent hypersalivation, to acquire an adequate mouth closure and to achieve an adequate aesthetic result.

Anatomically the defects can be classified as simple skin, vermilion, or full-thickness lip defects. In general, lip defects are full-thickness, but they can be only vermilion in leukoplakia or carcinomas in situ [4]. There are several classifications of reconstruction according to the size of the defect. Stranc classifies full-thickness defects as less than one-third, one-third to half-lip, and those involving more than half the lip [5,6].

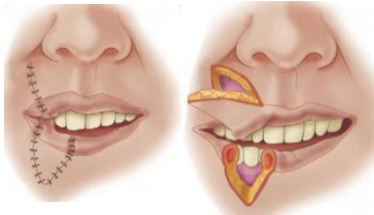
Small lesions smaller than 1/3 of the lower lip or 1/4 of the upper



lip can generally be resected in a wedge or V shape, and resolved with simple closure [4]; In our Center, 8 patients were resolved with this technique, in the period studied, but not included in the present study because flaps were not required for their reconstruction [7].

In resections that exceed 1/3 of the lip, the contribution of neighboring or distant tissue is necessary. In lesions between 1/3 and 2/3 of the lower lip or up to 1/3 of the upper lip, the reconstruction can be performed acceptably, with an Abbe-Esländer 7 flap that has the advantages: easy to perform, not leaving microstomas and cosmetically acceptable. As disadvantages: requiring a second surgical time, to make both lips autonomous and generate a certain asymmetry in the midline as an aesthetic defect [1,4]. The modification added by Mc. Gregor to this flap is to leave it suspended only by the arterial pedicle, which allows greater rotation of the flap and coping with the vermilion [7,8]. Similar to this technique is the Bowers technique, the difference being that a rectangular flap is made [7,9].

Another flap used for small lower lip defects is the Johanson flap, which generates a ladder flap with the remaining lip, 4 not used in our series. For this size of defect in our Hospital, 6 reconstructions were performed: a bilobed flap, 3 advancement flaps and 2 Abbe-Esländer flaps, with excellent aesthetic and functional results, although there was a distant recurrence that required a new intervention and a Death due to causes other than the pathology.



Abbe Esländer flap: its reconstruction requires the mobilization of a flap from the opposite lip, when 2/3 of the lip has been removed, it can be reconstructed with the opposite lip taking a tissue equivalent to half of the surgical defect.

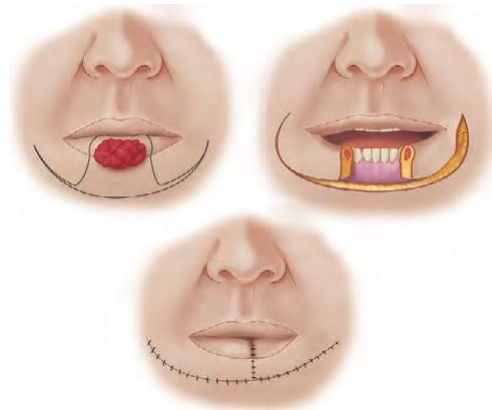
Abbe is for upper lip reconstruction and Esländer for lower lip. Requires pedicle section at 3 weeks 1.

When up to 80% of the lower lip is affected, in its central part, respecting the lateral extremities near the commissures, the Karapandzic flap can be used, or if the upper lip is the inverted Karapandzic flap, which rotates the three planes of 1 or both commissures from the root of the nasolabial fold for the Karapandzic flap or from the mentolabial sulcus for the inverted Karapandzic. It has the advantage of preserving a large part of the orbicularis apparatus with its motor skills and sensitivity and, as a disadvantage, microstomia, which may require a second surgical time for its correction. However, Stranc proposes using this flap when the defect is less than or equal to 4 cm or less than the middle of the lip to avoid microstomy [5].

It is difficult to give a definition of microstomy, because not all patients develop the same problems with similar results. Jabaley suggests that an ostoma is sufficient when a fork or spoon can be inserted without difficulty [6-10]. In our evaluation, the interincisor distance, distance, in cm, between the upper and lower gingiva at the level of the midline, was used to classify the microstomia if present, class I >3cm, class II 2.6-3cm, class III 2-2.5cm, class IV < 2cm. If there is microstomia after the procedure, it can be corrected with commissurotomies, splints, flaps or adapt the dental prosthesis. However, when performing the commissurotomy, the sphincter function achieved by the Karapandzic

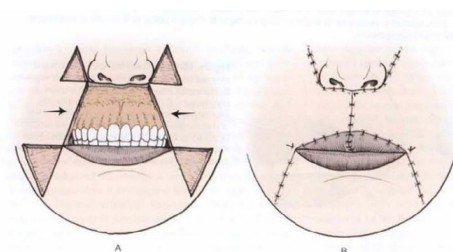
flap is lost. Another technique used is to add an Abbe to correct the microstomy [6]. Kroll reports that we must wait, because in the late postoperative period, the flap becomes enlarged with use and the microstomy improves.

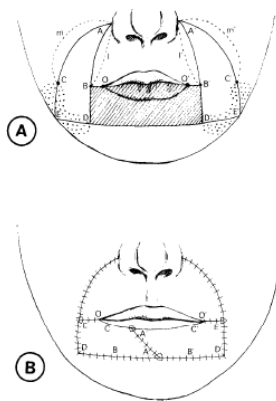
In our study, 5 Karapandzic flaps were performed, one of them inverted, 2 of them suffered microstomia, one class III that could tolerate it, allowing it to insert a spoon of food without difficulty, one was only class IV and required a new surgical intervention to your resolution.



For major defects that involve almost or all of the lip, several techniques were described, all dependent on the tissue of the adjacent cheek, since there was no residual lip tissue. Flaps such as Burow-Webster, bilateral Bernard-Burow, Fujimori, and the FAN Flap were widely used methods. However, the FAN flap is completely denervated and the Burow-Webster divides the orbicularis muscle fibers, but maintains those of the buccinator and innervation, for which many authors ensure good oral continence while others report that it is not complete.

According to Baker SR, et al. (2010) [4], the lack of a functional muscle sphincter, in cheek flaps, may be compensated in part by the tightness inherent in the reconstructed lip. While the basic opening and closing of the mouth may be acceptable, the more specialized functions of the lip such as sucking, whistling, or kissing tend to be significantly deficient [4]. Its advantages are: similar coloration to the rest of the skin mantle, surgical time and hospitalization shorter than free flaps, they require only one surgical time, they do not generate microstomies, the Fujimori flap respects muscle innervation, it allows to perform a large flap and rotation which is useful in large defects, the sutures are made on the aesthetic lines respecting the aesthetic units [2]. Its disadvantages are salivary fistula, lip incontinence, salivation, impossibility of suction, and aesthetically it produces a redundant upper lip, over the smaller lower one. Their limitation is that the cheek must be preserved in the resection.



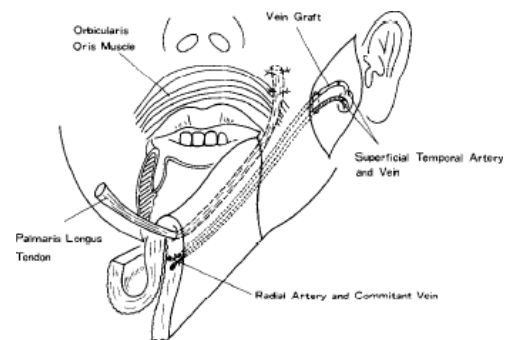


Fujimori flap: " Gate Flap or flap " to reconstruct the entire lower lip. When performing the island flap, allow it to be 3 cm greater in length than the nasolabial rotation flap [2].

In those cases where the cheek is compromised by resection and one or both commissures is compromised, regional flaps such as lateral trapezius island, described by Demergasso, can be used; pectoralis major, the deltopectoral of Backanjian [7,12]. Its advantages are shorter surgical time and not leaving microstomia and its disadvantages affect other aesthetic units such as cheek and chin and allow adequate lip continence

With the development of microsurgical flaps, new reconstructive options were proposed. The radial free flap began to be used for lower lip reconstruction in 1988, being described for the first time by Sakai S, et al. (1989) [13]. Although it provides abundant tissue with similar characteristics to the skin of the face, it presents poor lip continence. It is the same author who describes the use of the radial free flap with long palmar to reconstruct large defects of the lower lip in 1989 with the aim of solving this problem. The great advantage of this surgical technique is that by using the palmar longus tendon as a harness, the required tension is achieved to restore functionality after large lip resections [14]. Its advantages are: the utility in large lip resections that affect other aesthetic units such as cheek and chin and allow adequate lip continence. However, it leaves different skin coloration, surgical time and longer hospitalization, it requires a bed in intensive care, anticoagulation, it may require several interventions to perform flap plastics [15-21].

Radial free flap with palmar longus tendon: Allen test is performed. It is lifted according to the usual surgical technique, taking care to maintain the tendon of the palmar longus muscle as it is attached to the skin pad only through the peritendon. The vascular pedicle is tunnelled to the neck where the microvascular anastomosis with the facial vessels is performed. The tendon is sutured at its ends to the remaining orbicularis oculi muscle, completing the circumference of the oral sphincter. The skin pellet is sutured to the edges of the skin and mucosa [12].



The objective in large lip resections is to achieve oral continence, intelligible speech, general diet intake, allow adequate oral hygiene, with acceptable aesthetic results, which generates a double challenge. Local and regional flaps often do not meet all of these goals.

In lip surgeries, flaps such as those described by Gilles and Millar, Karapandzic, Wester and Fujimori, although they achieve satisfactory aesthetic results, the functional results do not achieve adequate lip continence or produce microstomia.

To achieve adequate lip suspension, many techniques have also been proposed, such as fascia lata sutured to the zygomatic arch, temporal fascia and greater zygomatic muscle, but many of them were lost due to the lack of their own vascularization, and only achieved static suspension. but not the dynamics of eating or speaking Sakai S, et al. (1989) [13], are the first to describe the use of the radial flap with a palmar longus tendon for lip suspension and later modified by Sawhney C (1986) and Jeng SF, et al. (2004) [14,17]. The palmar longus tendon sutured to the severed orbicularis muscle provides the tension required to give lost continence by resection, generating a harness effect with the skin pellet of the rest of the radial flap attached to the skin and mucosa on either side of the surgical defect [13].

Other free flaps used if the mandible is compromised are the fibula and scapular [12].

With this size of defects there were 5 patients, of which 2 underwent cheek flaps, one of them Bernard-Burow and the other a Fujimori flap with tongue flap for vermilion reconstruction, and 3 radial free flaps with long palmar, one of whom underwent dermopigmentation in the late postoperative period. With both cheek flaps, complete labial continence was not achieved, on the other hand, in similar defects reconstructed with a radial free flap with palmar longus tendon, very good functional results were obtained. Speech intelligibility was satisfactory in all, except in the patient who underwent the Fujimori flap, with alteration in the phonetic-phonological aspect of the language due to not having lip competence and having lingual interposition [22]. This patient also had difficulty adapting of a dental prosthesis due to the absence of an inferior gingivolabial groove. The greatest difficulty, referred to by the 2 patients with cheek flaps, was the alteration in suction, a very important practice in our culture due to the consumption of mate, whereas patients operated on with a radial flap with a palmar long tendon can suck without any difficulty.

Regarding the aesthetic results, the 5 cases were satisfactory, the 2 with the cheek flap and the 3 with the radial free flap with the palmar longus tendon, both for the patients and for the medical team. Although the color and volume of the flap obtained excellent results with the cheek flaps, they were satisfactory in the free flaps, the expression of the face and competence of the mouth were better in the radial ones, being able to respect, in all cases, the units aesthetic.



Many patients with free flaps require secondary revision surgeries to improve regional contour and definition. Currently, the liposuction technique is widely used in voluminous flaps, both pedunculated and free, Hallock in 1985 is the first to describe it. The procedure is fast, minimally invasive, it is performed under local anesthesia. But you must have the instruments and it can cause wound infection, hematoma, dehiscence, loss of the flap [19].



Flap liposuction: a small incision is made on the periphery of the flap, after infiltrating with lidocaine + epinephrine 1: 500000. Liposuction is performed in the subcutaneous plane with a 2.4-5.2mm Mercedes cannula, with a continuous vacuum of 30 mmHg. It can be aspirated from 10 to 300ml.

If there is redundant skin, it is resected and sutured.

Bui DT, et al. (2004) [34] describe, with this method, a study of 31 liposuctions in free head and neck flaps, which included rectus abdominis, radial and parascapularis, with excellent results, without major complications, and without significant difference between irradiated and non-irradiated patients [34]. Huang SH, et al. (2009) [35], propose the use of a classic 10fr open tip aspiration cannula. For liposuction, they recommend the use of an endoscopic guide, if possible, and perform a Wplasty in the same act [35].



Vermilion plastic: To achieve a better aesthetic result of the vermilion, mucosa [23,24] and tongue [25,26] flaps can be used, or dermopigmentation [19,27]. In our series, a single tongue flap was performed on a Fujimori flap in the same surgical act. that was lost in the late postoperative period, after the pedicle section, and a dermopigmentation to a radial flap. The advantages of the tongue flap are that it is a simple procedure and can be performed in the same

surgical act as the rest of the reconstruction [23,25, and 26]. As a disadvantage, it is mentioned that it requires two surgical times and it makes feeding up to the flap section difficult, both the color and the texture of the papillae are far from satisfactory. The advantages of dermopigmentation are that it is a simple procedure without requiring an operating room, but it may require repeated performance [19,27].

Oral commissure injuries are infrequent, only 4% of cases according to the literature, but many times in resections of the lower or upper lip it is compromised, even more so in large resections that include the cheek, generating an aesthetic deformity. and functional, with loss of competence of the oral cavity and continuous loss of saliva. Converse proposes a modification to the Esländer flap, which he calls the "over-and-out technique" that can be used to reconstruct the commissure and restore oral competence. The flap is designed as usual but is first rotated 180° and then further 90°, up to a total rotation of 270° and inserted into the space created between the two layers of the reconstructed cheek by excision of the cutaneous border. At the time of pedicle section, a plastic of the commissure with a V-Y1 flap may be required.

Another technique used is to make a full-thickness horizontal incision at the level of the flat commissure, extending it to the point corresponding to the position of the normal contralateral commissure. The mucosa is then advanced, using a rhomboid flap, to each side of the incision to restore the vermilion surface. Its disadvantage is that it can cause oral incontinence.

An alternative method of commissuroplasty is the use of small flaps of vermilion and orbicularis muscle. A triangle of skin and subcutaneous tissue is excised medially at the flat commissure. The apex of the triangle extends to the point of the new commissure. A small vermilion flap is created from one lip and pedunculated on the opposite lip. Then a horizontal incision is made through the muscle tissue to the point of the new commissure. The vermilion flap is advanced to this point from the new commissure. Another small flap created from the lip mucosa serves as a donor for the vermilion flap. The mucous flap is advanced over the free edge to restore the vermilion of the donor lip [4]. In our own series, 3 commissuroplasties were included, one with the Esländer modification and 2 with mucosa flap techniques, one of them with a rhomboid. One suffered a dehiscence, which closed for a second intention, without sequelae. All three with excellent aesthetic and functional results.

Conclusions

There are multiple reconstructive tools in the lip. Simple closures and local flaps with residual lip can be used for minor defects. Major defects can be reconstructed with cheek flaps, but although they achieve satisfactory aesthetic results, they cannot restore the complex functions of the lip. The number of patients in the sample presented is still small, satisfactory results, both functional and aesthetic, have been obtained in the reconstructions of large lip defects, with the radial microsurgical flap using the palmar longus tendon as a tension harness, achieving continence. oral and adequate suspension, which allows the patient to rejoin his social, family and work life without difficulties, for which this surgical technique is highly recommended. The choice of one or the other flap will depend on each patient, age, risk factors and the choice and experience of each surgeon (Table 1).



Table 1:

Caso	Edad/sexo	Ubicación de lesión	Anatomía Patológica	TNM	Tamaño del defecto	Antecedentes
1	70 F	1/4 labio superior +manto cutáneo	carcinoma basocelular	T1N0M0	1,2x1,2 cm	
2	67 F	>1/4labio superior	queratosis actínica	no corresponde	2x2 cm	
3	55 M	1/3labio inferior	carcinoma escamoso	T1N0M0	1,8x1,5 cm	FLAP
4	63 M	>1/3labio inferior	carcinoma escamoso	T1N0M0	3x3 cm	TBQ
5	77 M	comisura derecha	carcinoma escamoso	T1N0M0	3,5x3	TBQ
6	72M	>1/3compromete tercio lateral derecho de labio superior y se extiende hacia SNG homolateral	carcinoma basocelular	T4N0M0	4x2,5	
7	74 F	>1/3labio superior + ala nasal	carcinoma basocelular sólido cordonado	T4N0M0	2,5x2,5 cm	
8	59 F	>1/3 labio inferior Y comisura derecha	carcinoma escamoso	T1N0M0	5x20x1	TBQ
9	78 F	>1/3labio sup y ala nasal	carcinoma basocelular	R T4N0M0	2,5X2 cm	recidiva
10	65 F	>80%labio inferior	carcinoma escamoso	T3N0M0	3X2,2 cm	
11	59 M	>80%labio inferior	carcinoma escamoso	T1N0M0	2x1cm	TBQ
12	72F	>80%labio superior	carcinoma basocelular	T2N0M0	3,2X3,2 cm	EXTBQ
13	78F	>80%labio inferior	carcinoma escamoso	T4N0M0	3x2,3 cm	TBQ
14	71 M	>95%labio inferior	carcinoma escamoso	T3N0M0	5x2x2cm	TBQ,HTA
15	70 M	100%labio superior	carcinoma basocelular metatípico	T4N0M0	6X2 cm	
16	66 M	labio inferior+ mandíbula	carcinoma basocelular lobulado cordonado con diferenciación escamosa	T4N0M0	7,8X6,5	
17	57 F	75%labio inferior + comisura izquierda + con extensión a mucosa yugal y mejilla izquierda	carcinoma escamoso	T4aN1M0	6x5	PF
18	52 F	100%labio inferior +ambas comisuras+ mucosa yugal y reborde alveolar +adenopatía la bilateral	carcinoma escamoso	T4aN2cM0	5x7	
19	31 F	90% labio superior y comisura derecha + mucosa yugal con extensión a mejilla	Hemangioma venoso	no corresponde	6x3,5x1,5	

Caso	Planes de lesión y cirugía oncológica	Reconstrucción	Dura	Superción estética	Comunicación	Mucosa	Integridad del habla	Resultados Estéticos	Complicaciones	Observaciones	R
1	labio superior	colgajo bilobulado	general	buena	buena	no	buena	excelente	no		
2	labio superior	colgajo de avance	general	buena	buena	no	buena	satisfactorios	mínimo defecto en bermellón		
3	labio inferior	comisuroplastia con colgajo romboidal+ colgajo de bolsa de bichar	general	buena	buena	no	buena	excelente	no		
4	labio inferior	avance bilateral	general	buena	buena	si, clase II	buena	excelente	no		
5	comisura derecha	comisuroplastia	general	buena	buena	no	buena	excelente	dehiscencia		
6	labio superior y con extensión a SNG homolateral	mandibulotomía parcial+colgajo Abbe-Estlander +colgajo glabellar	general	buena	buena	no	buena	satisfactorios	dehiscencia, pérdida parcial de colgajo glabellar, óbito	óbito por otra causa	
7	labio superior + ala nasal	colgajo glabellar + colgajo de avance de labio superior	general	regular	incompleta	no	buena	regular	retroacción cicatricial		
8	labio inferior	colgajo Abbe-Estlander + biopsia cervical	general	buena	buena	no	buena	excelentes	no		
9	labio sup y ala nasal	colgajo Abbe-Estlander	general	buena	buena	no	buena	satisfactoria	no		
10	labio inferior	colgajo de Karapandzic	general	buena	buena	no	buena	excelentes	no		
11	labio inferior	colgajo de Karapandzic	general	buena	buena	no	buena	excelente	no	óbito por segundo primario de vejea 2,5 años seguimiento	
12	labio superior	colgajo de Karapandzic invertido	general	buena	buena	no	buena	excelentes	no		
13	labio inferior	colgajo de (No hay sugerencias)	general	buena	incompleta	si, clase II	buena	satisfactorios	dehiscencia clavien II, fibrosis cicatricial		si
14	labio inferior	colgajo de Karapandzic	alimentación enteral	regular	incompleta	si, clase II, B	buena	regulares	dehiscencia con pérdida de colgajo clavien II		
15	labio superior 100%	Avance de mejilla bilateral Bernard-Burrow	general	buena	incompleta, no succión	no	buena	satisfactorios	no	antecedente de reconstrucción nasal con colgajo radial por trauma	
16	labio inferior+ mandibulotomía marginal	colgajo de Fujimori + colgajo de lengua	blanda, no líquida ni sólida, no succión	buena	incompleta, no succión	no	regular	satisfactorios	no puede adaptar prótesis dental, por falta de surco gingivolabial inferior		si
17	labio inferior + comisura izquierda + mucosa yugal y mejilla izquierda+ VAC SQHteq	Radial con palmar largo	General	Buena	salvación ocasional	no	Buena	satisfactorios		Recidiva local, óbito	
18	100% labio inferior + ambas comisuras+ mucosa yugal y reborde alveolar + VAC SQHbilar con	Radial con palmar largo	General	Buena	buena	no	Buena	satisfactorios	Trombosis venosa , con pérdida parcial del colgajo	Reexploración de anastomosis	si
19	75% Labio superior y comisura derecha + mucosa yugal con extensión a mejilla	Radial con palmar largo	General	Buena	buena	no	Buena	satisfactorios	Dehiscencia de herida, clavien II, plástica del colgajo, adelgazamiento del colgajo.	2 Reintervenciones para plásticas del colgajo con anestesia local	

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