

# Reconstructive Proposal for Partial Thickness Defects in the Lip Commissure. Presentation of a Case

Ramón Ahmed Pérez García<sup>1\*</sup>, Oscar Daniel Román Salmerón<sup>1</sup>, Henry Cruz Jauregui<sup>1</sup>, Jose Daniel Gil Milá<sup>1</sup> and Mayra García Pernas<sup>2</sup>



<sup>1</sup>Department of Maxillofacial Surgery, Gustavo Aldereguía Lima Hospital, Cuba

<sup>2</sup>Department of Postgraduate Raul Dorticós Torrado University, Cuba

\*Corresponding author: Ramón Ahmed Pérez García, Department of Maxillofacial Surgery, Gustavo Aldereguía Lima Hospital, Cienfuegos, Cuba

## ARTICLE INFO

**Received:** 📅 October 13, 2022

**Published:** 📅 October 18, 2022

**Citation:** Ramón Ahmed Pérez García, Oscar Daniel Román Salmerón, Henry Cruz Jauregui, Jose Daniel Gil Milá and Mayra García Pernas. Reconstructive Proposal for Partial Thickness Defects in the Lip Commissure. Presentation of a Case. Biomed J Sci & Tech Res 46(4)-2022. BJSTR. MS.ID.007391.

## ABSTRACT

The history of lip repair is highly significant to the understanding of human anatomy, as well as the evolution of surgical principles in plastic and reconstructive surgery. A lip repair should create an illusion of form and restore function in the best possible way. The corner of the mouth is a notoriously difficult area to reconstruct as a result of its delicate and unique anatomical structure. A 21-year-old patient is presented with a dark brown lesion in the region of the right corner of the mouth that stands out on the skin that has been present since birth and that affects its aesthetics due to its size. A surgical approach was performed with a modification of the Brusati technique, with which an optimal aesthetic and functional result was obtained.

**Keywords:** Lip Commissure; Lip Reconstruction

## Introduction Drug

The history of lip repair is highly significant for the understanding of human anatomy, particularly vascularization, as well as for the evolution of surgical principles in plastic and reconstructive surgery. Bouisson, in 1874, offered the first definition of cheiloplasty or chyloplasty in volume XV of Dechambre's Dictionnaire encyclopédique des sciences Médicales: «the art of restoring lips totally or partially destroyed by any cause». However, the Edwin Smith papyrus suggests that lip surgery was known from the earliest civilizations of Antiquity. The first reconstructions were performed mainly for loss of substance from the lower lip causing salivary leaks. Since the beginning of the 20th century, most of the current techniques were already described in the work Les

autoplasties: lèvres, joues, oreilles, tronc et membres, by Nelaton and Ombredanne. Currently, there are more than one hundred techniques available, so it is essential to distinguish reliable and reproducible techniques that allow quality results with reasonable donor site morbidity. A lip repair should create an illusion of form and restore function in the best possible way. It must respect the static and dynamic balance of the lips, based on the fundamental axiom: «rebuild the lip with lip tissue [1]. The lips are structures that perform important functions such as being the gateway to the body for all food, protection of the oral structures, participation in phonation and obviously its aesthetic importance, sublime in the affective area. Everyone knows the anatomical complexity that involves the labial region; being mobile three-dimensional

structures, constituted by a cutaneous plane, a mucosal plane and between both a rich muscular plane [2-4]. The labial region is limited by grooves (areas of surgical incisions): nasolabial groove superiorly, nasolabial grooves laterally, which extend the nasogenian groove downwards, and labiomental groove inferiorly. The white lip, the red lip and the commissural region are distinguished. The white lip is made up of thick skin closely adherent to the underlying muscle which, in the male, has numerous hair follicles. On the upper lip, there is a central depression, the philtrum or filter, surrounded laterally by the philtrum ridges.

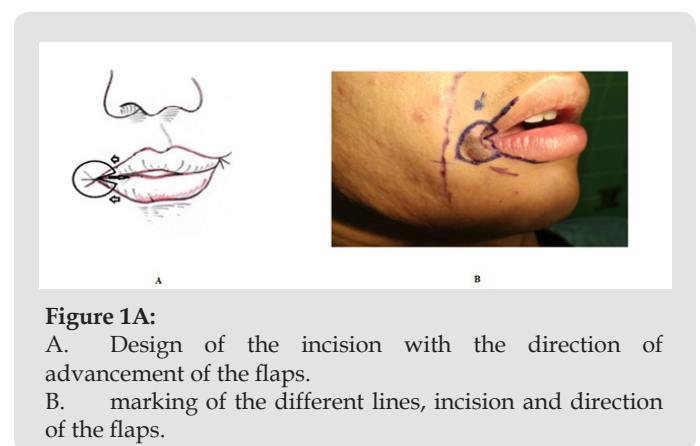
The red lip is made up of an inner «wet» mucosal portion and an outer dry or semi-mucous portion. The dry portion, or 'vermilion', is separated from the white lip by a sharp, prominent cutaneous-mucosal junction line. This line is curved in the medial part of the upper lip following the «Cupid's bow», which is related to the philtrum and under which there is usually a medial tubercle of the free edge [1,4,5]. The corners of the lips are the two cutaneous-mucosal folds located on each side of the mouth opening. They are covered with skin on the extraoral part and mucosa on the intraoral, with hardly any vermilion between them. This abrupt passage from the moist mucosal area to the dry skin area favors certain situations, such as the loss of vertical dimension of the teeth, wrinkles and licking habits, converting the commissural or angular regions into intertriginous areas, the seat of diverse pathology, especially infectious [6,7]. The corner of the mouth is a notoriously difficult area to reconstruct as a result of its delicate and unique anatomical structure; [8] the goals of reconstruction are not only the restoration of oral competence with adequate sphincter function for speech and retention of food, but also appropriate esthetics and contralateral symmetry. Any surgical procedure that involves the perioral skin requires special attention in preserving the cosmetic and functional properties of the local structures, since small deformities can result in severe implications for facial symmetry, speech, and oral continence [9,10]. Therefore, the objective of this report is to describe a surgical technique for the repair of partial thickness defects in the lip commissure.

### Presentation of the Case

GAL patient, 21 years old, white, male of rural origin; with a history of apparent health, no toxic habits, who came to the clinic due to a dark brown lesion in the region of the right mouth corner involving skin and vermilion of the upper and lower lip, around 1 cm in diameter, with defined edges, surface rough, not fixed to deep planes, which does not cause any symptoms. She refers to presenting it from birth but that for about 6 months she has presented considerable growth. His main concern is his aesthetics. The patient's clinical history was made and paraclinical studies were carried out, including a dermatoscopy that reported the lesion as a nevus. It is decided to perform surgical treatment of it.

### Description of the Technique

1. Mark of anatomical reference sites (nasogenian groove and skin line - mucosa)
2. Asepsis and antisepsis.
3. Placement of field cloths.
4. Incision for removal of the Pac-man-shaped lesion (Figures 1A & 1B).
5. Perilesional local anesthesia with Lidocaine 2% with epinephrine 1:80,000.
6. Excision of the lesion with a 2-mm margin of healthy tissue and in depth the orbicularis oris muscle is preserved.
7. Design of two advancement flaps; one on the upper lip and the other on the lower lip, taking the mucocutaneous line of both as a reference (Figure 2).
8. Both labial flaps are dissected, then the cheek mucosa is separated from the orbicularis muscle, which becomes part of the new vermilion and commissure. To guarantee symmetry, the distance from the philtrum crest on the left side to the homologous commissure was taken as a reference and transferred to the opposite side (at this point the first coping and guide suture is given) (Figure 3).
9. The mucosa and skin continue to be sutured with 3/0 silk until the flap is completely closed.
10. Once the closure is complete, antibiotic cream (neomycin) and a compressive bandage are applied.



**Figure 1A:**

- A. Design of the incision with the direction of advancement of the flaps.
- B. marking of the different lines, incision and direction of the flaps.

A biopsy was performed on the excised lesion, which reported a verrucous nevus. The sutures were removed at 7 days. The postoperative was ambulatory, it passed without complications, there was no dehiscence of the wound, there were no signs of necrosis or local infection. The functional and aesthetic results of the technique were optimal, since the sphincter function was

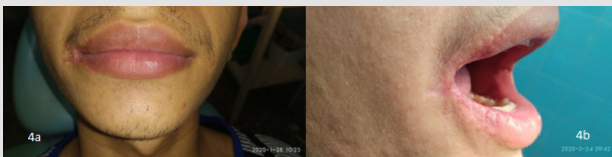
maintained and the required lip symmetry was provided, in addition to the fact that the surgical scar is almost undetectable (Figures 4a & 4b).



**Figure 2:** Surgical aspect once the lesion was removed and the incisions were made in the mucocutaneous line of the lips.



**Figure 3:** First stitch once the closure has started.



**Figure 4:**  
a) Postoperative 2 months.  
b) Postoperative 4 months.

## Discussion

Facial asymmetry is easily detectable in facial configuration and is regularly what bothers the patient. Lip asymmetry is defined as the difference in height between the lip corners on each side, with distorted upper and lower lip vermilion borders and deviation of the buccal midline from the facial midline [11]. Commissural reconstruction can be performed with vermilion advancements or

other local flaps, the limitation of many of these techniques lies in the failure to create an adequate groove and to provide sufficient support for the lower lip [12]. The anatomical reconstruction of both the vermilion, orbicularis oris muscle, and the cutaneous portion of the lip, as well as the exact location of the lip in facial anatomy, has a marked aesthetic implication, particularly the position of the oral commissure due to its influence on expression and mouth size [13]. A number of oral mucosal flaps have been described. Abbe-Estlander, Karapandzic, nasolabial bridge flap, Gillies flap and cheek advancement flap are some of the techniques currently used; although there is no consensus as to which technique is the best [14,15]. The Rayner and Arscott mucosal flap was originally described for vermilion defects. This flap has its base in the oral angle and its distal portion ends under Stenon's duct. Its indication is the total reconstruction of the vermilion of the lower lip [15]. The Abbe-Estlander flap is drawn over the nasolabial fold creating a full-thickness triangular flap based on the superior labial artery. Caudal rotation of the flap reconstructs the oral commissure defect, and the superior orbicularis oculi fibers of the flap are sutured to the fibers of the lower lip. The attachment of the flap to the lip creates a new sphincter. Estlander described the technique initially proposed for reconstruction of the oral commissure in 1872. The Estlander flap is essentially an Abbe flap for the commissure [14]. With the Estlander flap using the outer third of the upper lip ipsilateral to the lesion, the commissure and the removed part of the lower lip. Requires touch-ups to sharpen the commissure [2]. The objectives of surgery in the commissure are: the total or partial anatomical reconstruction of the commissural area, spatially rehabilitate the affected area, maintain muscle function without alterations that compromise the function of the oral sphincter.

Commissuroplasty has two indications:

- Position anomalies or dystopias
- Total or partial mutilations

Vertical dystopias can be corrected by means of the Z-plasty surgical technique or by means of VY or W-plasty [4,16]. Commissuroplasty by Y to V flap advancement consists of transforming a Y into a V. Useful in moderate advances and small defects of 1 to 2 cm [2,15]. Horizontal dystopia or macrostomia is corrected by Skoog commissural plasty [16]. Microstomia or reduction of the buccal orifice caused by malformation syndromes and commissural mutilations, both surgical and traumatic, can be corrected through the Converse Procedure, the Preaux Procedure and the Gillies commissuroplasty in healthy tissues; however, microstomy in scar tissue is indicated by the Pons technique, which consists of excising a skin triangle whose vertex is located in the neocommissure. The orbicularis band unfolds after a separation in the frontal plane. The two muscle segments are pulled laterally,

fixed to each other, and held transcutaneously over a swab, slightly further from the location of the neocommissure [2,4,16]. The mutilations of the commissure limited to the transverse dimension require two protocols for their correction; the Fata procedure, which consists of advancing a myomucosal pedicle similar to an elastic Goldstein flap; and the Brusati Procedure that corrects the strictly commissural mutilation using a modiolus advancement flap performing triangular Burrow resections on the nasogenian line [16]. Free flaps are a useful surgical option for long, full-thickness oral defects involving the corner of the mouth. However, free flap reconstruction makes it difficult to achieve good oral function and a natural facial appearance. Functionally, the disadvantage is the loss and fall of the reconstructed lip; and cosmetically the challenge is to obtain lip symmetry [17]. Another technique is the so-called inverted Yu flap for the reconstruction of full-thickness defects of the upper lip involving the commissure, nasolabial fold, and philtrum. This technique combines a buccal and a mental rotary flap, an upper lip advancement flap, and a buccal mucosal flap [18]. The Zisser flap described in 1975 for the reconstruction of vertical defects of the oral commissure combines advancement flaps from the skin of the genian region with an intraoral mucosal flap.

Its advantages are that the incisions must be made on the nasogenian folds parallel to the tension lines, the angle of the commissure is maintained and there is no risk of microstomia as no tissue rotation is necessary [5]. The authors consider that, in the particular case of the patient treated as it is a benign lesion, small and not the entire commissure or the total thickness of the tissue, the technique performed offers greater benefits than those previously written, how it is possible to show during the trans and postoperative since the surgical wound in the cutaneous portion of the lip was minimal, unlike the Brusatti flap where the incision reaches the nasolabial fold, the scar is almost imperceptible and good aesthetic results were achieved by maintaining lip symmetry and the angle of the commissure and functional, so other surgical techniques of the commissure were ruled out, such as the Z-plasty, the Zisser, Estlander, Fries and Brusatti flaps, since they correct defects of the total thickness of the tissue.

## Conclusion

The technique used for the surgical approach to the lesion presented allowed obtaining optimal aesthetic and functional results, which is why it is considered that this technique is useful for the repair of partial thickness defects located in the corner of the mouth, although each case must always be individualized.

## References

- Otero Rivas MM, Alonso Alonso T, Pérez Bustillo A, Rodríguez Prieto MÁ (2015) Reconstrucción de defectos quirúrgicos en la comisura oral. *Actas Dermo-Sifiliográficas* 106(9): e49-e54.
- Christian Salem Z, Rachid Gorrón M, Mauricio del Valle C (2018) Reconstrucción labial: principios y técnicas. *Cuad. Cir* 18(1): e98-e105.
- Lubek J, Robert O (2013) Lip Reconstruction. *Oral Maxillofacial Surg Clin N Am* 25: e203-e214.
- Chaput B, Meresse T, de Bonneceze G, Eburderly H, Vairel B, et al. (2018) Cirugía reparadora de los labios. *EMC-Cirugía Plástica Reparadora y Estética* 26(2): 1-17.
- Mantsopoulos K, Iro H, Constantinidis J (2019) Reconstruction of the oral commissure with the zisser flap. *Journal of Oral and Maxillofacial Surgery* 77(6): 1314.e1-1314e6.
- Chimenos Küstner E, López López J, Caballero Herrera R (2000) Las comisuras labiales como asiento de procesos patológicos. *Medicina Oral* 5(3): 165-168.
- Duarte Morales Luz C (2017) Verruga vulgar bucal, en comisura labial. *Odontología Vital* (27): 23-28.
- Tuersunjiang M, Long X, Fu Y, Ke J, He H, et al. (2017) Reconstruction of the oral commissure in patients with unilateral transverse facial cleft. *British Journal of Oral and Maxillofacial Surgery* 56(7): 1-5.
- Robotti E, Righi B, Carminati M, Ortelli L, Bonferraro PP, et al. (2010) Oral commissure reconstruction with orbicularis oris elastic musculomucosal flaps. *Journal of plastic, reconstructive & aesthetic surgery* 63(3): 431-439.
- Andrade P, Brinca A, Vieira R, Figueiredo A (2012) Double rhomboidal flap for reconstruction of large surgical defect of the labial commissure. *Anais Brasileiros de Dermatologia* 87: 456-458.
- Aoyama I, Oikawa T, Nakaoka K, Sekiya T, Hamada Y, et al. (2018) Lip morphology in patients with facial asymmetry can be corrected by 2-jaw surgery. *Journal of Oral and Maxillofacial Surgery* 76(11): 2404-2410.
- Tsao CK, Wan DC, Chen WF, Kao DS, Levi B, et al. (2012) The commissure-based triangular flap for lip revision following reconstruction of a through-and-through defect. *Journal of plastic, reconstructive & aesthetic surgery* 65(2): 271-273.
- Kiuchi T, Yazawa M, Ohshiro T, Kishi K (2020) Modification of the position of the angulus oris with a rotation flap and a YV flap in lip reconstruction. *Archives of Plastic Surgery* 47(3): 277-280.
- Tezel E, Numanoglu A, Celebiler O, Bayramiçli M (1998) Commissure-based buccal mucosal flap. *Plastic and reconstructive surgery* 101: 1223-1227.
- Alvarez GS, Siqueira EJ, de Oliveira MP (2013) A new technique for reconstruction of lower-lip and labial commissure defects: a proposal for the association of Abbe-Estlander and vermilion myomucosal flap techniques. *Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology* 115(6): 724-730.
- Simon E, Stricker M, Duroure F (2002) Les régions commissurales. Procédés de restauration et indications. In *Annales de chirurgie plastique esthetique* 47(5): 479-502.
- Sasaki K, Sasaki M, Oshima J, Aihara Y, Nishijima A, et al. (2020) Free-flap reconstruction for full-thickness oral defects involving the oral commissure combined with oral modiolus reconstruction using a fascial sling. *Microsurgery* 40(5): 553-560.
- Sanchez Sanchez M, Infante Cossio P, Lozano Rosado R, Gonzalez Perez LM, Japon Rodriguez MA, et al. (2017) Resection of upper lip adenoid cystic carcinoma and reconstruction with reverse Yu flap: Report of three cases and a literature review. *Molecular and clinical oncology* 6(3): 444-450.



ISSN: 2574-1241

DOI: 10.26717/BJSTR.2022.46.007391

Ramón Ahmed Pérez García. Biomed J Sci & Tech Res



This work is licensed under Creative Commons Attribution 4.0 License

Submission Link: <https://biomedres.us/submit-manuscript.php>



#### Assets of Publishing with us

- Global archiving of articles
- Immediate, unrestricted online access
- Rigorous Peer Review Process
- Authors Retain Copyrights
- Unique DOI for all articles

<https://biomedres.us/>