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Research Paper

Reconstruction of a large lip defect: Association of Abbé and Webster flap: Case report

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I. INTRODUCTION

The reconstruction of labial defects is a complex and challenging procedure that aims to achieveboth optimal functional and aesthetic results, whether it comes from tumoral exeresis (81%), trauma (7%), or due to vascular malformation (12%) (1)

The labial region is not only crucial to functions such as, deglutition, phonation and facial expression, but is also a major element in the aesthetic balance of the face.

Scar topography is essential for lip reconstruction in order to minimize the visual impact of surgery. In addition, it is mandatory to respect the aesthetic units, to achieve a natural, harmonious result. Labial symmetry is also a major aspect of lip reconstruction, as any asymmetry can lead to a significant alterations in facial appearance and lip function. Precise symmetry can be achieved through advanced surgical techniques and careful surgical planning.

Labial reconstruction can be performed with an Abbé - Webster flap which is a well-known surgical technique for reconstructing the lip using surrounding tissue to effectively restore lip shape and function.

Reconstruction of labial defects is complex, it requires a personalized approach for each patient,and must consider both functional and aesthetic aspects. Surgeons can provide a satisfying results that can improve both patients quality of life and confidence.

The aim of this study is to describe the case of a patient who underwent an upper lipreconstruction with an Abbé and Webster flap.

II. CASE REPORT

A 76-year-old woman was admitted for management of an upper lip defect.
The patient underwent surgical resection of a basal cell carcinoma of the upper lip 20 days earlier,with 0.5 cm margins. The defect left by this surgery involved the philtrum, the columella, part ofthe vermilion and a part of the white lip (Fig. 1).

In the first step of reconstruction, an Abbé Webster flap was performed. Under general anaesthesia, the patient was positioned supine, after infiltrating upper lip, lower lip and nasolabial fold with epinephrine, we performed bilateral Webster flaps, these are crescent-shaped lateral and subalar incisions.
A wide subcutaneous jugal dissection enabled the cheek to be advanced under the nostril andsutured without tension.

We also performed an Abbé flap of the lower lip to match the size of the defect. (figure 2)
The flap was rotated 180° and sutured plane by plane on the receiver site, using 3/0 absorbable suture for the mucosa and muscle and 4/0 non-absorbable suture for the skin (figure 3).The lowerlip was directly sutured in the same fashion.

The patient was then placed on a strict liquid diet (feeding through a straw). The suture was removed on day 5. After three weeks, the flap was released by infiltration with adrenalinized xylocaine, we made a horizontal incision of the flap at the level of the lip with a 15-blade scalpel, followed by a pedicle release with an

electrocautery. We used 4/0 absorbable suture to close theupper and lower lip in a single plane.
The collumellar defect was repaired by direct suture using two separate 4/0 silk stitches after a gentle musculocutaneous dissection of the upper lip (Figure 4).

III. RESULTS

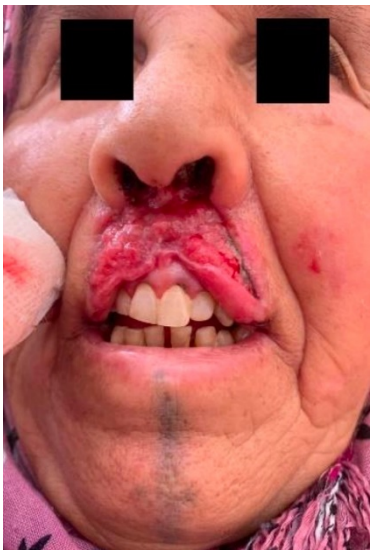

Fig 1 : Upper lip defectpreoperative aspect

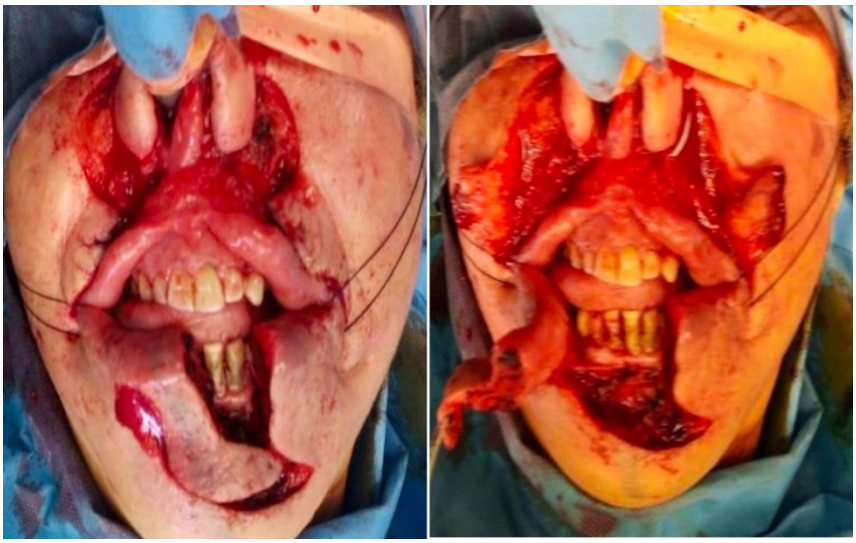

Fig 2 : Incision and dissection of Abbé Wester flap

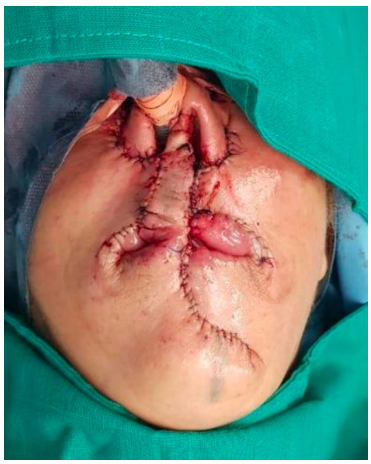

Fig 3 : Post operativeoutcome

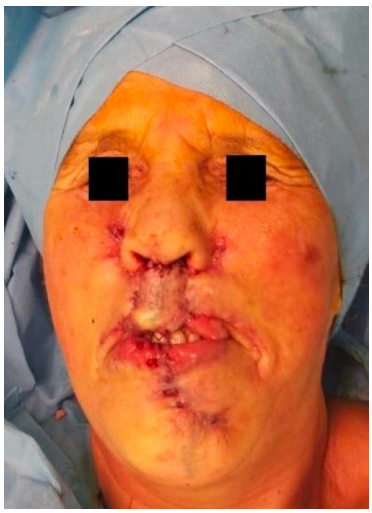

Fig 4 : Pedicule transection

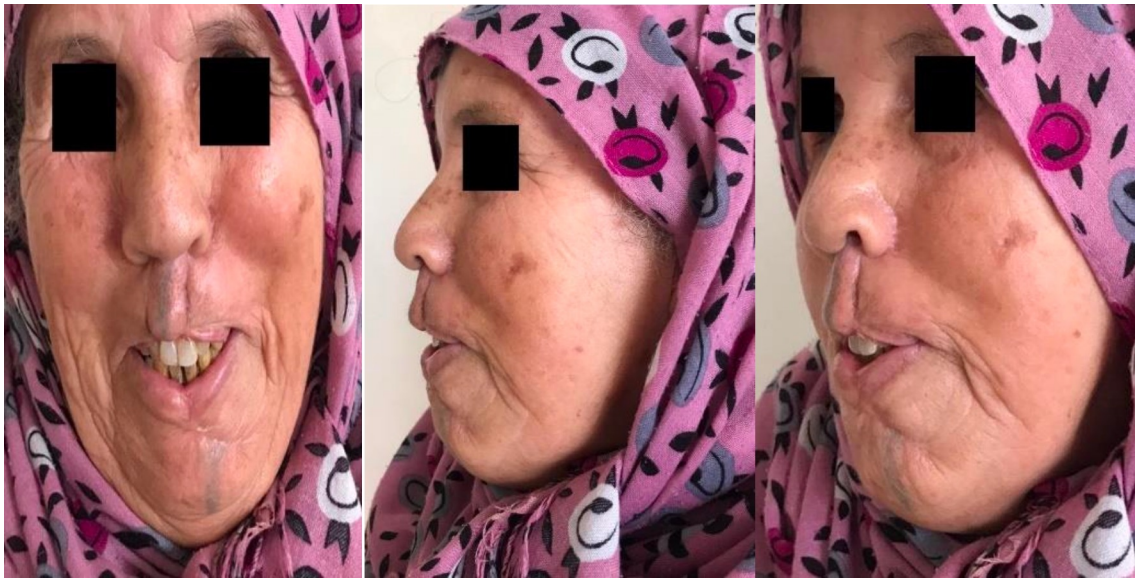

Fig 5 : Final result after 6 mounts

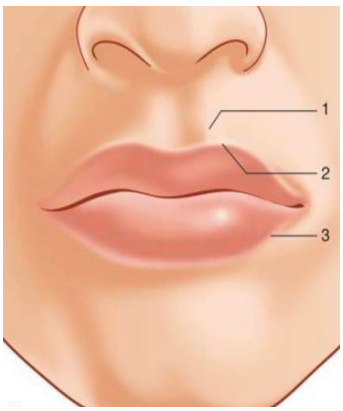

Fig 6 : Labial anatomy :1:philtral crest,2:Cupid's bow 3:vermillonborder

Sutures are removed at day 5. Post-operative follow-up was simple, with no necrosis or infection.In the first days, the patient was treated with local anti-staphylococcal antibiotic ointment, a local antiseptic and a 10-day with amoxicillin/clavulanic acid; Mouthwash and nasal decongestant spray were also prescribed.
Aesthetic and functional results after 06 months were highly satisfying, with a significantimprovement in patient quality of life (figure 5).

IV. DISCUSSION

Lip reconstruction represents a challenge that must satisfy two main requirements: to provide satisfying aesthetic results, while respecting the aesthetic subunits principle in order to improvefunctional outcomes (2) (3).
The lips are divided into two distinct zones: the white lip and the red lip, separated by Cupid's bow (figure 6).
The white lip is covered by thick, hairy skin, adherent in its medial part to the underlying orbicularis oris muscle, with a thin layer of subcutaneous fatty tissue, which provides mobility. Inits upper part, there is the Philtrum in the center which is limited by Philtral column.
The upper hemi-lip is trapezoidal-shaped, delimited by the nasolabial fold, the philtral collumns,the cutaneous-mucosal junction (CMJ) and the nostril; while the lower lip is limited at the top bythe lower CMJ, and at the bottom by the labiomental fold.
The red lip is composed of two regions: the outer part, dry semi-mucous or vermilion, adhering tothe muscle, forming a medial protuberance for the upper lip called the tubercle; and the inner part, wet and mucous, which extends to the bottom of the vestibules, forming the gingivolabial sulcus, **whose** outer projection for the lower lip

is the labiomental crease. It is separated from themuscular plane by a submucosa that is the site of the accessory salivary glands. The upper and lower lips come together to form the commissures. They are the convergence zone of the skin muscles, antagonists of the orbicularis oris, responsible for mimics, in a muscular crossroads, themodiolus. (4) When reconstructing upper labial subtotal loss of substance, the Webster flap can be used to repair the lateral paraphiltral subunits bilaterally, combined with a 2-step heterolabial Abbe flap for philtral reconstruction. (5) The Webster flap consists of an incision through two crescents of perioral and sub-alar skin (Fig. 7). The incision on the upper edge is extended towards the alar crease region parallel to the cutaneous-mucosal junction, avoiding an increase inlip height laterally. Thus, the muscle and its innervation are fully respected. For medialreconstruction, and to ensure that both lips are of equal length, an Abbé flap is often used to recreate an aesthetic philtral subunit. Indeed, this can also be reconstructed by incorporating a cartilaginous fragment obtained from the concha of the ear. In addition, it is necessary to make aclosed-angle section starting from the lower quarter of the medial section of the flaps, in order tocreate a small medial hump. However, this technique results in a lip recession with a microstomy and modification of the labial commissures. The indications for these flaps are reserved for paramedian or medial defects if combined with an Abbé flap. (6)

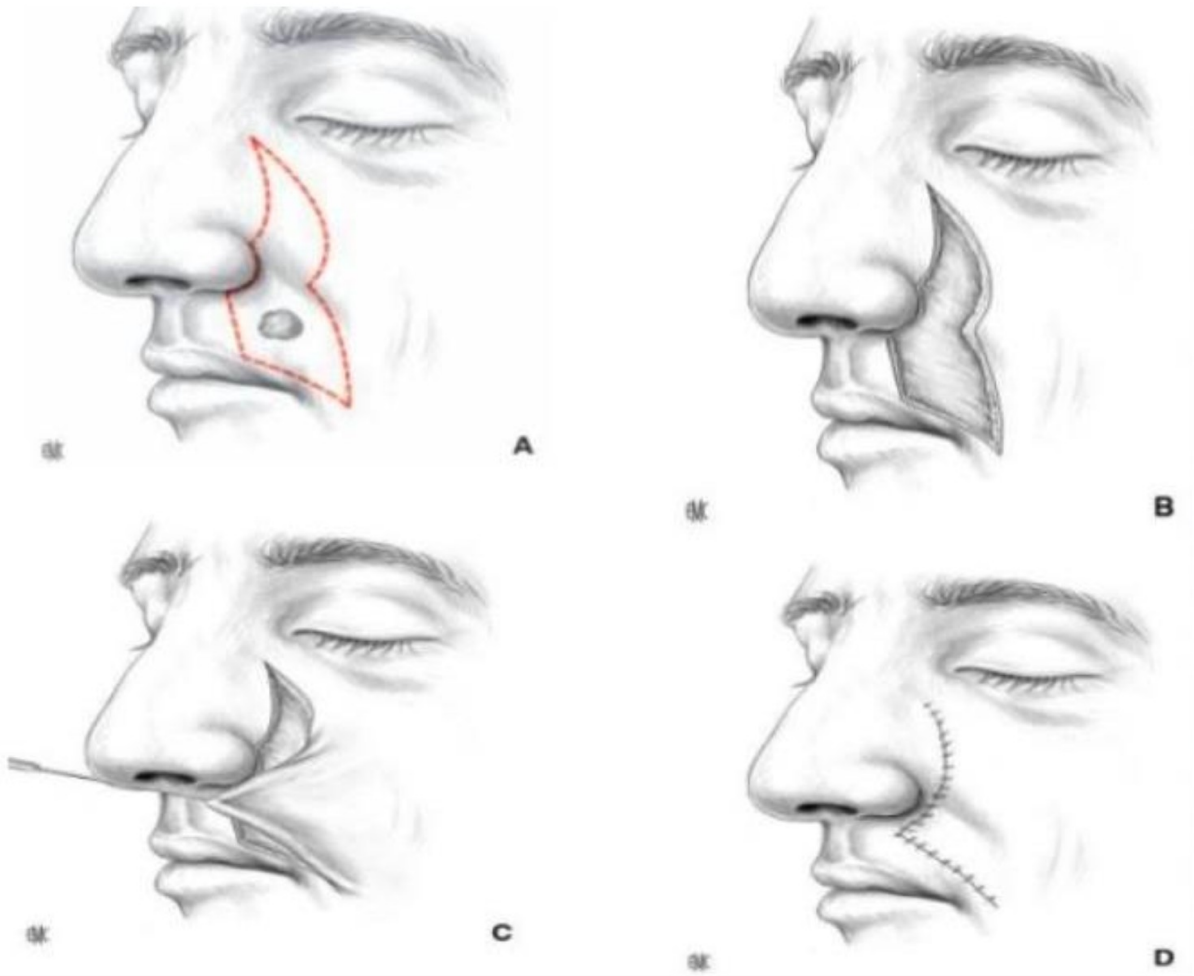

Fig 7: Webster Flap

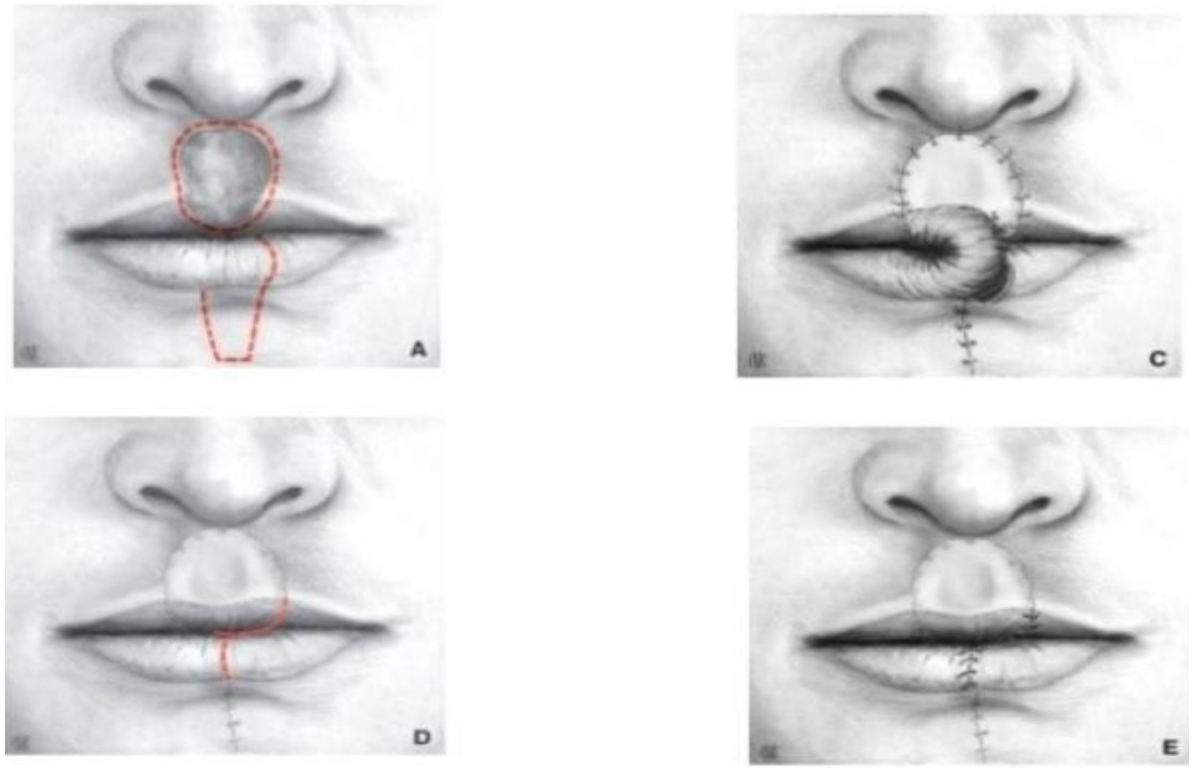

Fig 8: Abbé Flap

The Abbé flap is a lip flap that was first described by Robert Abbé M.D. in 1989 (7). It uses the opposite lip as the donor site: a full-thickness triangular flap turned around 180°, vascularized bythe inferior coronary artery (figure 8). The length of the flap corresponds to half of the defect in the upper lip. The medial pivot point is the coronary artery, which must remain protected by the mucosa of the lip.The flap is then rotated 180° and sutured plane after plane to the upper loss ofsubstance. Section of the pedicle is performed during the third week: the new skin-mucosa lines must be carefully sutured to avoid any misalignment. During this period, the patient is fed by nasogastric tube or liquid through a straw. This reconstruction rebalances both lips, giving an excellent functional and aesthetic result at the cost of an additional scar on the opposite lip. (8) Inthe case of excessive tissue loss: medial over 2/3 of the upper lip constitutes a good indication for bilateral Webster flaps and a medial Abbé flap to repair the philtrum (8).

V. CONCLUSION

The Abbé - Webster flap is a excellent local flap that allowed us to cover the loss of substance leftby basal cell carcinoma resection of the upper lip. Functional and aesthetic results were highly acceptable, making this flap the technique of choice for medial and paramedian reconstruction

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