

Nasolabial flap for lower lip reconstruction. A case report

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Case report

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Background

Reconstruction of lower lip defect is a challenge for oral and maxillofacial surgeons. Perioral defects may result from trauma, malignancy, and congenital defects. The lips not only allow for function in feeding and hygiene but are important for the maintenance of the social smile. Management of lip defects remains a significant reconstructive challenge requiring extensive preoperative planning. For the more simple oral defects, local tissue advancement and flaps are best; however, more advanced defects may require free tissue transfer. In the medical literature there are multiple reconstructive procedures for small and medium size defects of the lower lip, but only a few methods for larger defects involving the whole lower lip. We introduce a new modification of the Fujimori flap for reconstruction of the total and near-total lower lip defect. by advancing a cutaneous islanded myo-mucosal infolding flap into the primary lip defect.

Keywords: Lower lip defect, Fujimori flap, Lower Lip reconstruction

The lips appear to play an important role as a functional and aesthetical unit of the face. They are responsible for food intake, imbibition, mastication, oral competence, salivary retain, articulation, and speech. The lips take their part in facial expression of emotions and verbal or nonverbal communications. They are also involved in the aesthetic appearance of the face. Perioral defects may result from trauma, malignancy, and congenital defects. Cancer resection causes the majority of lip defects; Squamous cell carcinoma is the most common malignancy affecting the lip, unlike the rest of the face, where basal cell cancer is predominant. Smoking and sun exposure are the two greatest environmental factors contributing to lip cancer. Thus, because the lower lip receives more ultraviolet exposure than the upper lip it, is the site of more than 90 percent of cancers. The gold standard is surgical resection with wide local excision of the primary lesion with negative margin. The main goal of the lower lip reconstruction is restoration of the sphincter function for normal mastication, eating, and salivary retain while reestablishing the aesthetic appearance of the lips. The most important factor is the size of lower lip defect for determining the reconstructive method to be employed. Lower lip defect which is smaller than one-third of the entire lower lip can be closed by primary

repair, while the local musculocutaneous flaps such as Abbé flap, Estlander flap, Karapandzic flap may be used for lip defects ranged between 30% and 80% of the lip. The reconstruction of the total and near-total (more than 80% of the entire lip) lower lip defects are very challenging entity and local flaps such as Gate flap and distant flaps such as radial forearm flaps.

Anatomy

An understanding of normal anatomy is important for adequate reconstruction of lip defects. The lips are bordered laterally by the nasolabial crease, superiorly by the base of the nose, and inferiorly by mentolabial crease. The musculature defines the function of the lip, and incomplete approximation may lead to dimpling and scarring. The lips are trilaminar in nature and consist of mucosa, muscle, and skin. The outer border is formed by vermilion which is the mucocutaneous junction between the mucosa and outer skin. Its repair is critical, as minute defects are easily noticeable. The muscular component of the upper lip primarily is comprised of the orbicularis oris (OO), Although OO is the primary muscle of the lower lip. The orbicularis oris muscle is responsible for of the bulk of the lip. This muscle forms a sphincteric ring around the

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Figure 1. Left. Lower lip squamous cell carcinoma. Middle. Infolding nasolabial flap. Right. Immediate reconstruction.

mouth. The depressor muscles of the lip are the depressor anguli oris, the labii inferioris, and platysma. The zygomatic, buccal, and marginal mandibular branches of the facial nerve innervate the musculature of the lip. The blood supply is through the superior and inferior labial arteries which are the branches of the facial artery. The labial arteries course superficial to the orbicularis oris muscle and deep to the mucosal surface of the lip, Venous drainage is usually concomitant with arterial flow; however, the upper lip may drain by means of the ophthalmic vein, a route for intracranial infection. To maintain the natural aesthetic appearance of the lip, consideration must be given to topographic boundaries and aesthetic subunits. The aesthetic subunit boundaries, the melolabial fold, mental crease, and philtral ridges, must be preserved and used to help camouflage scars.

Lower flap lip reconstruction

Small full-thickness defects, between a quarter and a third of the lip, may be closed primarily. Excision of tissue is usually in the shape of a V; however, a pentagonal or W technique for resection can be performed. For the defects more than 80% of the entire lower lip, reconstruction with extended fan flap is planned. The lateral margins of the flap run along the nasolabial fold and mandibular border, the entire flap is elevated including, artery are located closer to the mandibular border must be included into the flap. The facial artery must be dissected until the mandibular border to allow mobilization and rotation of the flap. After the flap is elevated, it was rotated inwards to the oral cavity through a mucosal tunnel. The nasolabial flap was then sutured to the residual lip in a multilayered fashion from the inner mucosal layer to the outer skin.

Case report

We present the case of a male patient in their mid-thirties with without any medical history, no history of trauma, and completely healthy referred to our plastic and reconstructive surgery department, with a history of 18 months slow growth soft tissue lesion, not painful, on lower lip as Squamous cell carcinoma The patient denied any sensitive an either motor symptoms.

Discussion

involving greater than one-third. The patient reported in this case regained acceptable functional and aesthetic outcome, the advantages of the Fujimori technique is that it is a one-step surgical procedure and the flap is well-vascularised. All the described flaps have their own merits and demerits with variable degree morbidities in the postoperative period. Although various flap designs have been described in the literature, the infolding flap technique has not been well described in the literature. The major disadvantage encountered in the clinical practice with these local flaps are the microstomia and distortion of the commissure. Although the inclusion of the facial artery in the flap design is not essential for flap survival.

Conclusion

In our opinion, Infolding of the nasolabial flap can be an excellent surgical technique for reconstructing the full-thickness defect of the lower lip and could be considered an effective option in reconstruction of large defects of the lower lip (over 50% of the lip), since this technique allows proper lip



Figure 2. Pre and post-op views.

sensitivity and muscle function recovery, oral continence and communication abilities, better than other reconstructive methods. The Bernard-Webster and Karapandzic flaps are commonly used for reconstruction of defects larger than one-third of the lower lip. However, the Karapandzic flap has potential risk of microstomia and blunting of the oral commissure. In comparison, the standard Bernard-Webster flap shortens the cheek which may distort the encircling muscles of the lower lip muscles, and create disproportion to the upper lip.

Conflicts of interests

The authors would like to declare that there is no conflict of interest

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