Review Article

Tongue Reconstruction by Nasolabial flap

Abstract

Background: The nasolabial flap is an easy, however untrained, modest tissue reconstruction process with a totally honest deliver of blood that may be utilised to restore minor tissue defects withinside the mouth hollow region. The study's intention turned into to peer how a success inferiorly primarily based totally completely absolutely nasolabial flaps had been for restore in sufferers with early mouth maximal cancer.

Methods: A overall of twenty 8 sufferers with T- or T2 malignant mass of the tongue who had reconstructions the use of the inferiorly primarily based totally absolutely nasolabial flap had been investigated retrospectively. All of the sufferers blanketed withinside the studies had their flap viability, wound issues, infections, function, scar, and recurrence mentioned post-operatively. After the manner, all sufferers had been monitored for at the least 6 months.

Results: The nasolabial flap is used to restore abnormalities withinside the buccal mucosa, oral commissure, decrease lip, lateral border of the tongue, tough palate, and mouth floor. The flap become a success in all sufferers without a recurrence. The beauty and purposeful results have been each satisfactory. Minor complications which include postoperative trismus, immoderate wound contracture, ectropion, infection, and wound dehiscence passed off in a small quantity of sufferers. One of the maximum not unusual place issues in the majority of male sufferers become intraoral hair boom over the flap employed.

Conclusions: The NLF is a feasible and adaptable choice for restore of small to intermediate deficits of the oral hole area as a result of ablation of early tumours of the oral hole area if right interest is paid to flap design, operational approach, and post-operative treatment.

Keywords: Nasolabial flap, tongue carcinoma, Reconstruction, oral cavity

Introduction:

Tongue carcinoma is one of the most common oral cancers in India. Its management relies heavily on early detection and management. The majority of our patients arrive at a late stage. Surgery is crucial in its treatment, whereas reconstruction determines the patient's quality of life after surgery.

When a tongue cancer is removed completely, the patient is left with a deformity that requires flap restoration. The majority of people in the higher centre want free flap. Locoregional flaps, on the other hand, play a big role in places where free flap isn't possible or where there's a lot of traffic.

In most centres, the nasolabial flap was routinely employed for tongue defect reconstruction. However, when we are left with a greater defect or a posterior tongue defect, reconstruction becomes more difficult, particularly when the mandible is free. Free flaps are still the best option for such reconstructions, but they require additional training, operational and anaesthetic time, and financial investment.

Despite the fact that it provides superb functionality and aesthetics.

In the Indian scenario, costs must be evaluated against the advantages to the patient, and time is a critical element in high-volume centres.

As a result, modifications to typical operations must be explored in order to achieve a satisfying functional and cosmetic result.

In this case series, we look at how an island nasolabial flap, i.e. a nasolabial flap tunnelled beneath the jaw, can be used to restore tongue defects up to 6cm in length, and how it works.

Surgical anatomy

Blood supply

[(1)]The subdermal plexus, which is nourished by feeder arteries from the branches of the facial artery, supplies blood to the nasolabial muscle and skin. This assures excellent viability and allows for aggressive thinning and shaping. The four principal branches of the facial artery, which terminate in the angular artery, are the lower labial artery, superior labial artery, alar artery, and lateral nasal artery.The facial artery takes a medial rather than a lateral course in the majority of dissections. The artery begins in the oral commissure's dense fibrous tissue and runs along the top lip's superior border to the nasal ala. It subsequently proceeds medially along the nasofacial groove, toward the eye's medial canthus. The inferior two-thirds of the nasolabial groove are densely packed with artery perfora-tors.

The lower one-third of the nasolabial groove must be included when raising a laterally-pedicled flap, as is typically the case in single-stage oral cavity defect restorations, to establish a robust vascular musculocutaneous base.

Muscle

[(1)]The easiest way to understand the musculature that surrounds the facial artery is to look at it. The platysma, risorius, zygomaticus major and minor, levatorlabiisuperioris, and levatorlabiisuperiorisalaequenasi muscles are located deep to the facial artery.The mandible, buccinators muscle, and levatorangulioris muscle are all superficial to the artery. Because the artery is located deep within the mass of facial mimetic muscles, the nasolabial flap has the potential to penetrate this muscle layer and become a true musculocutaneous flap.

Technique:

Flap design

[1]A fusiform flap is marked, making sure the flap's medial boundary is on the nasofacial groove. To find and delineate the course of the artery, a pencil Doppler probe may be effective. The average flap width and length are 2.5 centimeter and six centimeter, respectively. The size may be closer to 5cm if the facial skin is extremely superfluous. The flap's superior border is lower than the medial canthus along the nasofacialintersection.The type of defect determines the placement of the inferior boundary. For floor of mouth reconstruction, the inferior border of the flap should be at the superior border of the mandible; however, for palatal abnormalities, the inferior border must be at the level of the oral commissure.

Flap harvest

[1]The pores and skin reduce is carried to the extent of the helping musculature, passing via the epidermis and subcutaneous fat. The artery is located in a degree under to the facial mimetic muscle however in a medial function alongside the nasofacial groove, as visible withinside the anatomic dissections in the front and behind. The flap is increased advanced to inferior on a line right all the way down to the facial muscle, artery, and vein, with the artery cautiously positioned through blunt dissection. The parotid duct's webweb page has been mounted and has been maintained. In sure circumstances, the advanced labial artery will ought to be ligated.

Flap insert

[1]As a result, a musculocutaneous flap is formed, which links to the facial artery. The flap is then dug down into the buccal area and, sometimes in situations, underneath to correct the intraoral defect. The dug down part of the flap must be de- epithelialized if single-stage restoration is necessary. It is possible to do staged reconstruction with delayed pedicle division, with the necessary time delay to enable proper neovascularization.

Procedure

(2)The use of a low-level nasolabial flap is preferable in oral reconstruction. In three heights, the focus line directly follows the nasofacial fold, and in less than a third, 3 to 4 mm in the between of the NL fold.After flap transfer, this will produce modest disturbance and allow for advanced arc rotation. The tip should have a 1.5 to 2.5 cm wide base. It is difficult to spin successfully in a big diameter base, whereas hitting with a tiny base can work with a lower blood pressure and offer a restricted number of transfer tissues. The internal organs of the incision and the internal organs of the incision touch about 0.5 to 0.75 cm in front of the inner canthus. (2)Oral practise has a low flap limit. When a single stage nasolabial flap is necessary to address the next oral deformity (lower lip with retromolar trigone), it can be used. With a no. 15 scalpel, make a 2 to 2.5 cm deep flap. Sun paralysis, increased alveolus &retromolar trigone, Metzenbaum scissors-made transbuccal tunnel in the posterior part of the gingivobuccal sulcus. In the posterior part of lower gingivobuccal sulcus, a transbuccal tunnel is formed for mistakes in the lateral $1/3^{th}$ of lower of both lip and alveolus. A nasolabial flap will be necessary on stage 2 if the impairment is between one-third of the oral hole (middle mouth, bottom mouth, top and bottom alveolus) or the internal tongue, and the necessity for a two-storey harvest will be greatly raised.

As a result, only around 1 to 1.5 cm of the flap is highly exposed.For convenient transmission, a transbuccal dug down was constructed at the plane of the back biting back.

[3]When the editing is finished, cutting scissors are used to lift the flap from the top to the bottom of the supramuscular plane. The upper section of the separation is frequently related to the angular branch of the facial vein. [9]As previously indicated, the transbuccal tunnel is generated adjacent to the feature site on the oral cavity. One or two fingers should be able to easily pass through the tube.The flap was then sutured in place with a series of 3-0 suction sutures after being non-invasively moved to the mouth cavity. The donor site is generously undervalued as a skin elevate the drum on a subterranean level. Sponsor disability restrictions have now been implemented. When the operation is completed, the skin next to the incision's nasofacial region is worked on to generate a flat scar. However, she has a slightly stressed scar around the nasolabial fold (thus, mild disturbances during closure), which gives her a more natural aspect.
The separation and placement of the flap is normally done three weeks following the initial treatment in circumstances when a second phase is required.Many patients appreciate the fact that he can eat soft meals at this period. It is critical to eliminate anything during period flap separation.
[4]The microvascular flap and the transbuccal component of the flap offer repair of other parts of the oral cavity other than the tongue. In this case, a subset of oromandibular reconstructive patients were able to keep their body in shape by eating soft meals. Surprisingly, everyone of these patients had a significant oral joint deformity. There are no signs of neurosis in any of the patients

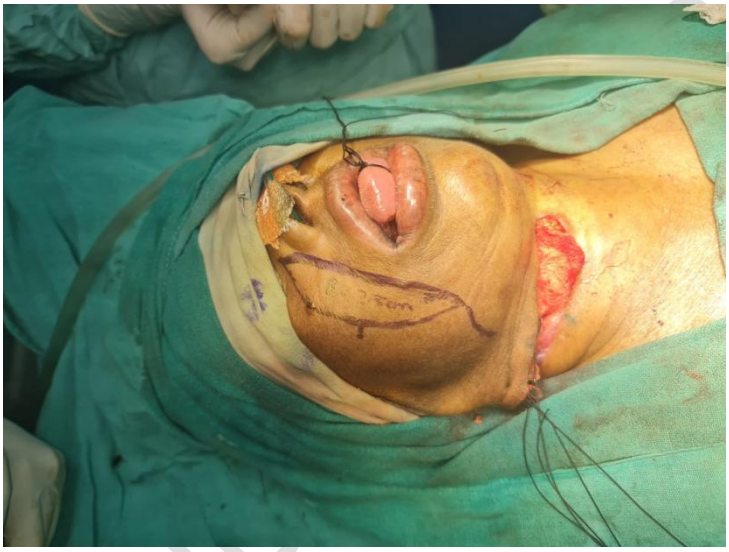

Fig 1. Presurgical marking of flap

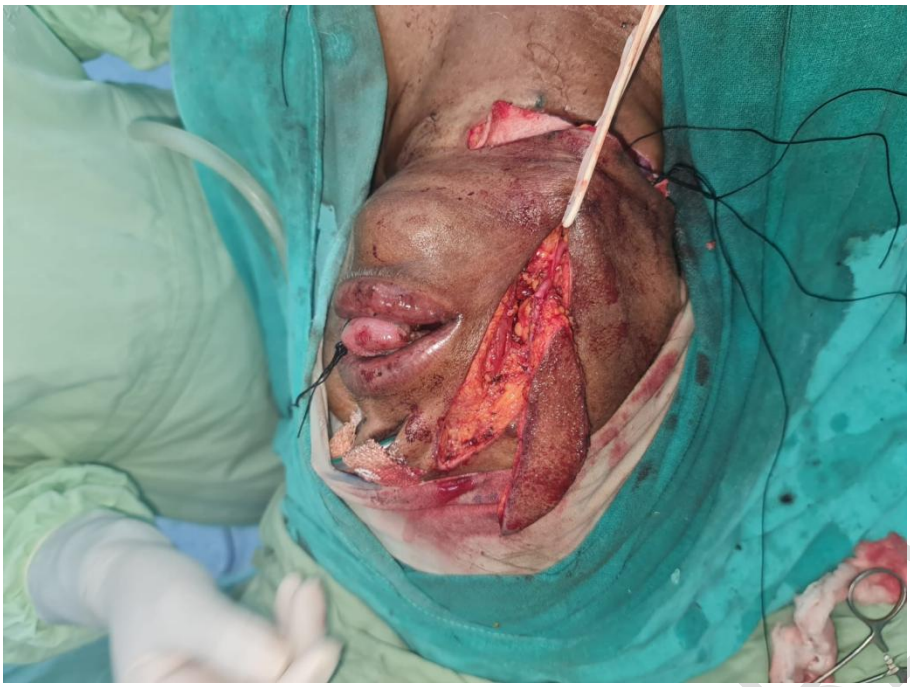

Fig 2. dissected right side flap

Fig 3. The transfer of the flap through the mylohyoid tunnel behind mandible

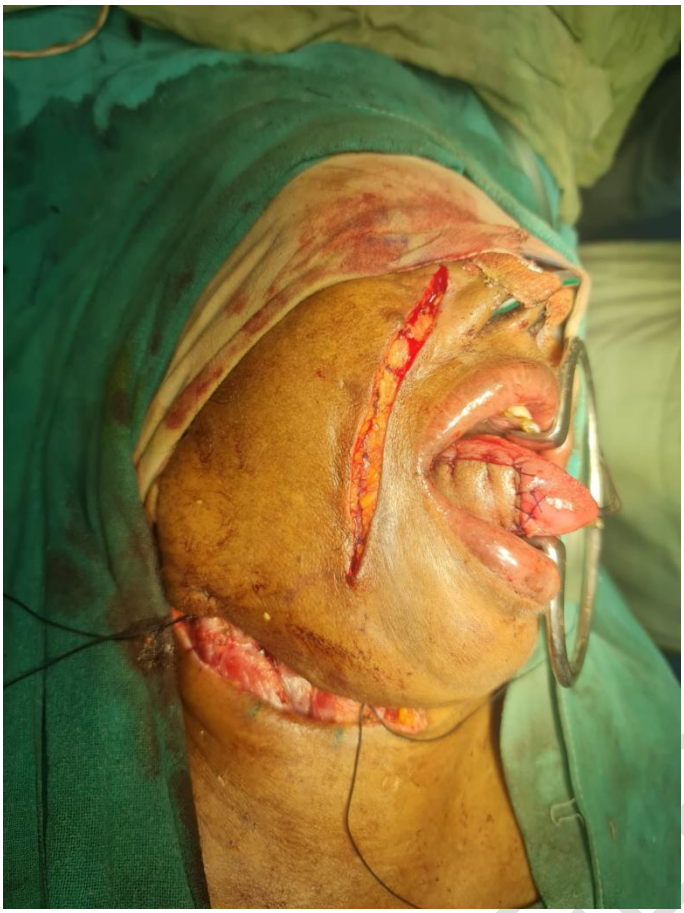

Fig 4. islanded nasolabial flap insert into tongue defect

Result:,

(5)24men and 2 women were among the 26 patients. The tongue was the site of the primary tumour ,

In clinical examination and computed tomography, all patients had T2 or T3 disease with N0 / N1 status, and neither of them had given neoadjuvant radiation. In 26 cases, neck dissection was connected with the removal of the primary tumour. He operated on and maintained facial veins in 26 people. In 12 cases, this was accomplished through internal cutting; otherwise, it was accomplished through lip separation. Only 7 individuals were given radiotherapy after surgery.Tracking for last 6 years and no one of the patients lost follow up

Discussion:

(6)Nasolabial flap's adaptability and use are widely known. Because a solid vascular supply is present to flap, it has a great chance of survival. Because there is so much blood, a maximum length and width ratio of three:oneispossible.For small and medium interior disabilities (T1 to T3) flap is ideal. The facial vein supplies majority of the blood to the nasolabial flap. However, this vein was present in some of our cases and was linked to the neck muscles without impairing brain function, indicating that it may not be the face nerve but rather a richer lower plexus that supplies skin and tip.The fact that this feather is resistant to radiotherapy indicates that its circulatory system is in good working order.

[2]The downsides of this form of reconstruction include the requirement for a second phase in some situations, where the buccal tunnel is used to implant the flap, or the need for modification for the second phase of the surgery.
These are minor procedures that can be done under local anaesthetic.
Other issues, such as biting the cheeks or a flap foundation that is stronger than the alveolus, might cause problems for denture wearers, especially if alveolar abnormalities are done by flap.
[7]Dental implants could be a possible solution to this problem. Flap reconstruction necessitates extra surgery because to bleeding, infection, or incompatibility in the suture line. A person may suffer ulcer problems and partial or complete reconstructive failure as a result of vascular anomalies or drainage drainage. Flap survival depends on early detection of flap congestion, such as ischemia necrosis. Smoking is a fact, and it's associated to a higher risk of flap failure because it increases hypoxia and vasoconstriction, both of which are detrimental to flap survival. Hematomas can be produced by poor hemostasis or drug-induced coagulopathy, which is why coagulopathy-causing medicines, such as acetylsalicylic acid, NSAIDS, and VIT E, must not be given for at least two weeks nethier before not after surgery.Hematoma production can limit tissue formation and contribute to ischemia necrosis by reducing vasospasm and enlarging the subdermal plexus. Reduce vasospasm and lengthen the subcutaneous plexus, or detach the flap from its recipient bed.[2]One of the most common side effects of having layers on your face is congestion. Venous congestion can cause blood clots and flap necrosis. Flap recovery might also be hampered by infection. The average wound infection rate after face surgery is 2.8 percent, with high degrees of facial expressions being recreated using local layers. Hearing and sensory-related controls that offer hearing guidance in speech and swallowing can be harmed by the use of rebuilt pumps.Furthermore, if the flap is taken from the skin that contains the hair to reconstruct the surgical error, that patch of tissue will continue to produce hair, especially in men. By designating the tip, this can be avoided. It can also be noted that post-surgery radiation can inhibit hair development, which finally leads to flap mucosalization.There may also be a file for the effect of twisting around the nasolabial folds, which can be avoided by using rhomboid forms. The ipsilateral nasolabial flap can accept up to 2 cm of deformity, but if a larger portion of 5 cm or more needs to be fixed, the ipsilateral nasolabial flap must be used. the nasolabial flap can be employed wellAnother significant benefit of this flap is that, due to the excellent length of the pedicle, it can reach anywhere inside the oral cavity, including the opposite side. This is particularly important in tongue defects, as it provides adequate coverage even for the posterior 1/3rd of the tongue defect. It also provides enough volume to cover a hemiglossectomy deformity. Unlike other traditional NLFs, this flap will not cause vascular pedicle compression, will not cause a complication such as an inclusion cyst of the orocutaneous fistula, and will not require a phased treatment.The speech was intelligent, the tongue mobility was superb, and there were no extra postoperative issues like with a traditional nasolabial flap. Despite the fact that we do not routinely perform tracheostomies in situations of tongue excision, this flap did not necessitate tracheostomy. Oncological principles are observed during malignancy resection; the facial artery and vein are kept, and there is no oncological compromise, especially when compared to the submental flap, which compromises the preglandular area of level lb clearance.

[8]The main downside of a flap is that it leaves a scar after surgery, however this will fade over time. This reconstruction may not be acceptable to younger people. During the treatment, the facial nerve buccal branch, which supplies top lip, was sacrificed, which may have little cosmetic effect on smiling. The proximal end of the flap will have modest hair growth, but it is

significantly superior to the submental flap. When a big level lb node is present, this flap cannot be harvested, compromising oncological clearance. To prevent hair growth, deepithelialization of the proximal skin may be tried.

(9)Other locoregional flaps or skin grafts won't supply enough volume for the tongue and have their own morbidity. A submental flap is another option, however it is not recommended because it is not oncologically safe. As a result, the free flap is the recommended method of tongue repair. However, the amount of effort and knowledge required must be considered. In terms of cosmesis, this flap is a nice alternative to the free flap.

(10)When weighing the advantages and disadvantages of this flap, it's worth noting that it has the potential to become a major flap for the restoration of orofacial abnormalities, necessitating a bigger prospective study and further examination.[11-14]

Conclusion:

In some cases, the nasolabial flap is used to cover or reconstruct a mild or moderate paralysis of the mouth opening. However, where teeth and bite are present in the area to be restored, this method of reconstruction is not very suitable.

The pedicle might potentially cause skin injury. Because a minor handicap necessitates rebuilding, the nasolabial flap has shown to be a practical and trustworthy treatment that does not cause clients undue illness.

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