

## Case Report

# Successful Lower Lip Reconstruction with Nasolabial Flap

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### Abstract:

*Nasolabial Flap remains an under-recognized option for reconstruction of lower lip. We report a successful case of complete lower lip reconstruction after excision of SCC involving most of the lower lip of a 65-year-old male. The surgery was uneventful, and the patient was satisfied with the outcome both functionally and cosmetically at one month follow up. The objective of this report is, to demonstrate the effectiveness of an inferiorly based nasolabial flap for reconstructing a large lower lip defect after squamous cell carcinoma (SCC) excision.*

**Key words:** Squamous cell carcinoma, Nasolabial flap, Lower lip reconstruction.

### Introduction:

Squamous cell carcinoma (SCC) of the lip accounts for more than 25% of all oral cancers, with more than 90% of cases occurring in the lower lip<sup>1</sup>. Surgical resection is still the mainstay treatment of lip SCC but the resulting facial disfigurement and oral dysfunction can significantly impair a patient's quality of life. Since both facial contour and oral competence have to be restored simultaneously, reconstruction of lip following cancer surgery is challenging<sup>2</sup>.

A variety of surgical approaches have been proposed for lower lip reconstruction. The choice of reconstructive method relies mainly on the location, thickness, and size of the defect<sup>3-5</sup>. Large, full-thickness defects often require reconstruction with free flaps. For small- to medium-sized defects, regional flap or local flap could be used. However, since these approaches provide limited amount of additional tissue for reconstruction, using such approach to reconstruct medium- to large-sized defects may result in microstomia and suboptimal function restoration in some cases.

Nasolabial flap is one of the most commonly used local flaps in orofacial reconstruction. Results from previous studies have confirmed the successful usage of nasolabial flap to reconstruct various kinds of oral defects<sup>6</sup>, including defects of the lower lip<sup>7,8</sup>. But its clinical results for such reconstructive purpose are limited. Hence, we report a case of complete lower lip reconstruction after excision of SCC involving most of the lower lip by use of inferiorly based nasolabial flap.

### Case Presentation:

Sixty five years old otherwise healthy male patient presented to us with a 4 cm ulcerated exophytic lesion occupying 80% of the lower lip sparing both oral commissure. It had been evolving for 8 months. Underlying mucosa was free and there were no palpable lymph nodes. Patient was clinically diagnosed as a case of SCC and incision biopsy also confirmed the diagnosis. Before surgery, all necessary investigations were done and reports were normal. Staging

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investigations revealed no signs of metastasis. Inferiorly based nasolabial flap was planned and patient with his attendant were counselled regarding the surgery, its outcome, possible complications and our back up plan to

tackle those.

Radical excision with 1 cm from apparently healthy margin resulted in a full thickness defect that involved 90% of the lower lip. An 8 x 4.5 cm inferiorly based nasolabial flap was designed on the right, flap harvested just above the superficial muscular aponeurotic system (SMAS) up to angle of the mouth. Then the flap was transposed into the defect through a tunnel and inset was done by making an inward fold. Inner margin of the flap was sutured with the mucosa and outer margin was sutured with skin. Donor site was closed primarily. Post-operative period was uneventful and patient's oral competency was well maintained. Patient was advised to have liquid and soft diet initially, rinse oral cavity with anti-septic solution for couple of days post operatively. Check dressing was done on 3<sup>rd</sup> post operative day and after that wound was left open and patient was asked to apply topical antibiotic ointment to the suture line. Sutures were removed on 7<sup>th</sup> post operative day and patient was then discharged.



**Figure 1:** Pre operative image showing the lesion and marking of flap



**Figure 2:** Per operative image showing defect after excision and excised specimen



**Figure 3:** Per operative image showing flap harvest



**Figure 4:** Per operative image showing flap inset and closure of donor site

We followed up the patient after 15 days and one month. Both functional and cosmetic outcomes were excellent and patient was highly satisfied.



**Figure 5:** Post-operative follow up image after 15 days showing excellent contour of the flap, oral competency is well maintained.

**Discussion:**

First described by Von Bruns, in 1857, the nasolabial flap can be used for the repair of the entire lower lip,

an inferior base is drawn along the nasolabial crease, then dissected above the SMAS and transposed to the defect. The flap's rich subdermal plexus confers viability even allowing for a length-base relation of 3:1. Its base should ideally measure from 2.5 up to 3.5 cm, provided surrounding tissue has enough laxity. The main concern regarding the length is the possibility of ectropion, warranting caution when the tip of the flap is drawn too close to the lower eyelid<sup>9</sup>.

The flap has several advantages: (1) it can provide moderate amount of tissue to replenish the surgical defect, hence avoiding microstomia; (2) mismatch of the skin tone between donor and recipient sites is minimal; (3) the thickness of nasolabial flap roughly equals to the full-thickness defect of lip (4) donor site morbidity is minimal, with an inconspicuous scar mimicking nature-occurring nasolabial fold; (5) compared to regional or free flaps, the reconstructive technique of nasolabial flap is straightforward, less technique-demanding and less time-consuming, which would be beneficial in patients with severe comorbidities; (6) the angle of rotation during flap inset is less than 90° without torsion, which increases the chance of flap survival<sup>2</sup>.

Most lip reconstruction techniques are aggressive; require general anesthesia and prolonged post-op time. Some may even require a second surgical intervention<sup>10</sup>. The nasolabial flap, despite being an adynamic repair, represents a good option for attaining a "sling" effect, while permitting good oral opening for dental hygiene, feeding and speech<sup>11,12</sup>. Moreover, donor-tissue morbidity is significantly reduced (as are duration of surgery and recovery time), when opposed to Karapandzic or Bernard-Burrow-Webster flaps, making it preferable in patients with impaired general condition.

Taken together, we consider the inferiorly based nasolabial flap as an ideal local flap for reconstruction of full-thickness, medium-sized lower lip defect following ablative cancer surgery.

### Conclusion:

Nasolabial flap constitute a simple option for reconstruction of moderate to large defects of lower lip in elderly patient. Flap survival and wound recovery are excellent, with minimal donor site morbidity. Good functional and esthetic outcomes can be achieved. However whether or not it can be used for oral commissural defect, demands more study.

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