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Nasolabial Reconstruction with Abbe Flap After Wide Excision of Skin Cancer: A Case Report

Alfred Hamonangan L. Toruan[1], Kiki A. Rizki[1]

[1]Surgical Oncology Trainee, Medical Faculty of Padjadjaran University Bandung, Indonesia

Corresponding Author: Alfred Hamonangan L. Toruan

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ABSTRACT

Background: Nasolabial reconstruction using local flaps is the most used reconstructive technique, but it is dependent on the elasticity of the donor tissue. Larger and deeper defects require mobilization of more and looser donor tissue, so other reconstructive techniques should be considered. The Abbe flap is a lip reconstruction technique commonly used to close cleft lip deformities.

Purpose and objectives: To report a case of a large defect in the nasolabial area and review the Abbe flap method as a nasolabial reconstruction after wide excision of skin cancer.

Methods: A 62-year-old woman presented with an ulcer on the left side of her upper lip. A biopsy revealed basal cell carcinoma. The patient underwent wide excision including oral mucosa and continued with frozen section examination. After the incision margins and base were cleared, the patient underwent reconstruction of the defect with an Abbe flap.

Results: A physical examination on the first postoperative day revealed swelling of the lower and upper lips and a viable flap. The next day the swelling began to reduce, and the patient learned oral intake and oral hygiene. Three weeks after surgery, flap viability was assessed, followed by pedicle excision and multilayer wound suturing.

Conclusion: Reconstruction with the Abbe flap can be used as an alternative to closing large and deep defects in the nasolabial area.

Keywords: Basal Cell Carcinoma, Local Flap, Nasolabial reconstruction

INTRODUCTION

Basal cell carcinoma (BCC) is the most common form of skin cancer worldwide, accounting for approximately 70–80% of all non-melanoma skin cancers. In Indonesia and other tropical regions, its incidence continues to rise, particularly among older individuals or those with prolonged exposure to ultraviolet radiation. Although BCC typically grows slowly and rarely metastasizes, lesions involving the face—especially the nasolabial region—often pose unique challenges due to their potential to cause substantial tissue loss as well as significant aesthetic and functional consequences for affected patients.[1–4]

Facial BCC lesions, including those in the nasolabial area, often require a more meticulous reconstructive approach. Factors such as the elasticity of surrounding tissues, the size and depth of the defect, the risk of contracture, and the need to preserve oral form and function are critical considerations when selecting a reconstructive technique. Larger defects can interfere with oral competence, alter facial expression, and diminish overall quality of life. Postoperative issues are also not uncommon, ranging from hypertrophic

scarring, lip retraction, facial asymmetry, to flap failure due to limited local vascular supply.[1,4–7]

One of the commonly employed methods for managing large defects of the nasolabial and upper lip region after BCC excision is the Abbe flap technique. Originally developed to correct cleft lip deformities, this technique has since been widely adapted in facial reconstruction because of its ability to balance both functional and aesthetic outcomes. With careful planning, the Abbe flap can restore harmonious lip contour, reduce tissue tension, and minimize long-term retraction. In BCC cases involving the nasolabial region, it becomes a logical reconstructive choice due to its ability to preserve facial symmetry and provide high-quality replacement tissue.[1,5,7,8]

CASE REPORT

A 62-year-old woman, a farmer from Tasikmalaya, presented with a chronic ulcerative lesion on the left upper lip that had appeared six months before seeking medical care. The lesion initially resembled a small corn-kernel–sized spot and was intermittently pruritic, prompting the patient to scratch it frequently. Over several months, the wound progressed rapidly into a large ulcer that expanded nearly tenfold from its original size, bled easily, and caused a burning and stinging sensation. During this period, the patient denied fever, foul odor, or additional masses elsewhere on the body, and only attempted self-treatment with topical remedies, which provided no meaningful improvement. In May 2025, she sought care at Tasikmalaya District Hospital, where physical examination, radiologic evaluation, and a biopsy were performed and confirmed a malignant process. Based on these findings, she was referred to Hasan Sadikin General Hospital (RSHS) Bandung in June 2025 for further evaluation and more definitive management.

Figure 1. Preoperative Clinical Pictures

Routine laboratory tests showed hematologic and organ function parameters within normal limits, with no evidence of systemic infection or anemia. Chest radiography revealed normal cardiac and pulmonary structures, with no signs of metastasis or other abnormalities.

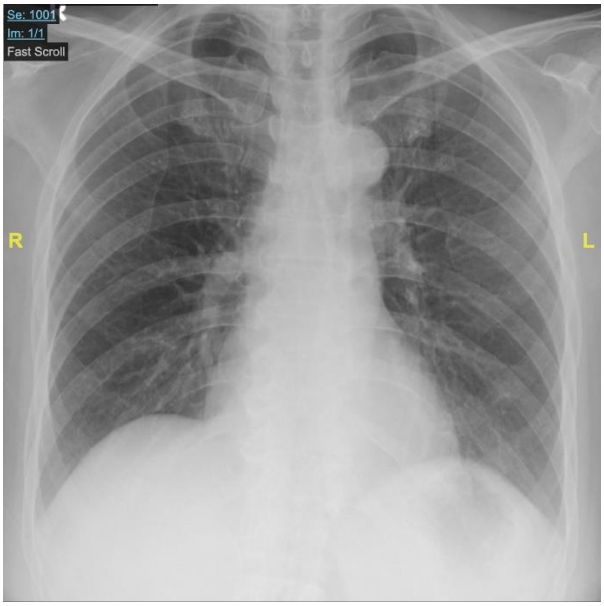

Figure 2. Chest X-Ray Findings (RSHS, 05-06-2025)

An incisional biopsy of the lesion confirmed an ulcerated nodular type Basal Cell Carcinoma (BCC), classified as stage T2N0M0. Following the histopathological diagnosis and intraoperative frozen-section confirmation of tumor-free margins, the patient underwent wide excision of the lesion, followed by reconstruction of the defect using a transverse Abbe flap transferred from the lower to the upper lip.

Figure 3. Intraoperative Pictures

Figure 4. Postoperative Pictures

Postoperative follow-up demonstrated good flap viability, with no necrosis or wound dehiscence. After 3 weeks after surgery, patient underwent pedicle excision surgery. By the 2 weeks after pedicle excision, the patient showed satisfactory oral function and aesthetic outcomes. She continued routine follow-up visits at the surgical outpatient clinic for ongoing monitoring of the reconstruction and further evaluation.

Figure 5. Photograph at 1 month after reconstruction

DISCUSSION

Basal cell carcinoma (BCC) is the most common non-melanoma skin malignancy, accounting for approximately 70–80% of all non-melanoma skin cancers. In many Asian countries, including Indonesia, the rising trend of BCC is becoming increasingly apparent as the population ages and cumulative sun exposure continues to increase—especially among outdoor workers such as farmers. Although BCC typically grows slowly and very rarely metastasizes, it can still cause substantial local tissue destruction, particularly when located in cosmetically and functionally critical facial areas such as the nasolabial region. Histopathologic examination typically reveals basaloid cells with palisading nuclei, a mucinous stroma, and may be accompanied by ulceration or invasion of the surrounding tissues.[1–5]

Reconstruction following tumor excision in the nasolabial region is inherently challenging. This area encompasses structures essential for everyday function—facial expression, articulation, and oral competence. When a large defect occurs, significant functional and aesthetic problems may arise, including contracture, retraction, and facial asymmetry that can be difficult to correct. Mobility of the surrounding tissues is also limited, making the choice of reconstructive technique highly dependent on defect size, depth, and the risk of vascular compromise. In some cases, the formation of prominent scarring can further complicate the healing process.[4,5,7]

Multiple flap techniques may be used to reconstruct defects in this region, including advancement, transposition, and rotation flaps, as well as nasolabial flaps and cross-lip (Abbe) flaps. Each technique offers distinct advantages, but none is universally applicable to every defect. Advancement and rotation flaps are generally suitable for small to moderate defects but may be insufficient for larger ones. Transposition flaps provide wider reach but may result in asymmetry. Nasolabial flaps are widely used for perioral reconstruction due to their robust vascular supply, though cheek scarring and limited tissue availability may become concerns. For very large defects or cases with inadequate local tissue, free tissue transfer becomes an option, albeit with considerably greater complexity.[9,10]

For defects involving full-thickness loss of the upper or lower lip, the Abbe flap often stands out as the most rational choice. This cross-lip technique—originally developed for cleft lip repair—offers excellent color and texture match, closely resembling native lip tissue. Additionally, continuity of the orbicularis oris muscle can be maintained, enabling preservation of oral function and facial expression. The risk of retraction or impaired oral competence is generally lower compared with other methods. Its main limitations include the need for a two-stage procedure and the importance of precise pedicle design to avoid ischemia. In the present case, the Abbe flap provided stable, favorable outcomes both aesthetically and functionally, with an uncomplicated healing process.[1,5,7,8]

CONCLUSION

Basal cell carcinoma (BCC) of the nasolabial region is a locally invasive skin malignancy that can cause significant tissue destruction, particularly when involving key facial aesthetic and functional units. This case report describes a patient with nasolabial BCC who developed a large post-excisional defect requiring meticulous reconstructive planning to preserve oral function and facial symmetry. The patient underwent reconstruction using an Abbe flap, a cross-lip technique offering excellent color and texture match, as well as preservation of orbicularis oris continuity to maintain lip function. The procedure yielded optimal functional and aesthetic outcomes, with minimal complications and a favorable healing process.

Declaration by Authors

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