Universal Library of Medical and Health Sciences Case Report

ISSN: 3064-6545 | Volume 3, Issue 2

Open Access | PP: 47-53

DOI: https://doi.org/10.70315/uloap.ulmhs.2025.0302008

Combined Facial Reconstruction for Basal Cell Carcinoma Involving the Left Nasal Ala and Lower Eyelid: Case Presentation and Surgical Approach

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Abstract

This article presents the case of a 72-year-old female patient admitted for surgical treatment of a neglected basal cell carcinoma (BCC) involving the left nasal ala, lower eyelid, and left cheek, with an estimated evolution time of approximately two years. The diagnosis was established through dermatological evaluation, including dermatoscopy and confirmed by biopsy.

Given the tumor's extent and anatomical location, a comprehensive surgical approach was adopted. Complete excision of the tumor was performed with oncological safety margins, which were subsequently confirmed by histopathological examination. The resulting complex facial defect required immediate reconstruction to restore both functional and aesthetic aspects of the midface region.

Reconstruction involved the use of multiple locoregional axial flaps, tailored to the specific tissue requirements and anatomical subunits affected. This technique allowed for optimal tissue coverage and contour restoration while minimizing donor site morbidity. The postoperative course was uneventful, with favorable healing and satisfactory functional and cosmetic outcomes.

This case highlights the importance of early diagnosis and multidisciplinary management in advanced BCC cases, and demonstrates the effectiveness of combined facial flaps reconstruction in addressing complex facial defects following oncologic resection.

Keywords: *Facial Reconstruction, Basal Cell Carcinoma, Facial Flap, Eyelid Reconstruction, Nasal Reconstruction.*

INTRODUCTION

Basal cell carcinoma (BCC) is the most frequent skin cancer, particularly in the facial region, where it raises significant risks for functional and aesthetic concerns. The careless BCC can lead to wide local invasiveness and destruction of adjacent tissues, which requires complex surgical treatments and reconstruction strategies. The early diagnosis is crucial in the management of BCC effectively, since it significantly alters the treatment trajectory and improves the results of the patient.

The surgical management of the neglected BCC often requires comprehensive approaches, including the definitive resection of the tumor, meticulous attention to cancer principles and precise reconstruction techniques. Surgical split remains the gold standard for BCC treatment, especially in cases where carcinoma has reached a significant depth and compromised surrounding structures. Lemaître et al. (2018) highlighted the effectiveness of the surgical resection of lower eyelid tumors, using nasal chondromucous grafts together with myocutaneous hangers of the upper eyelid as reconstructive strategies that optimize the functional results and aesthetic appearance. This intervention illustrates the need to adapt surgical methods to the specific anatomical and pathological characteristics of the tumor [1].

For more extensive or recurring BCC lesions, advanced reconstruction techniques become primordial. The use of local flaps based of the facial artery or the forehead flap,

Citation: Eugen Gabriel Turcu, Diana Ciuc, "Combined Facial Reconstruction for Basal Cell Carcinoma Involving the Left Nasal Ala and Lower Eyelid: Case Presentation and Surgical Approach", Universal Library of Medical and Health Sciences, 2025; 3(2): 47-53. DOI: https://doi.org/10.70315/uloap.ulmhs.2025.0302008.

allows the efficient use of adjacent tissue to cover large defects while preserving the natural contours of the face. Sawhney et al. (2024) discussed aesthetic restoration in the central facial BCC, emphasizing the superiority of flap techniques that not only provide adequate tissue coverage, but also improve the cosmetic result by maintaining facial harmony. Personalized surgical techniques adapted to the unique challenges presented by the neglected BCC can drastically improve the satisfaction and results of the patient [2].

In the management of widely neglected BCC cases, interdisciplinary collaboration becomes fundamental. Multiple specialties teams consisting of dermatologists, surgical oncologists, reconstructive surgeons and pathologists can provide a comprehensive and cohesive management plan adapted to the individual needs of patients. Pathirana et al. (2025) presented a case report detailing a decade trip with recurrent facial BCC, highlighting the importance of an integrated management approach to address such complex cases [3]. The collaboration between specialists facilitates meticulous planning, ensuring that both oncological control and the restoration of function and aesthetics are achieved.

Reconstruction after facial BCC split requires not only an understanding of the defects created but also an appreciation of the intricate balance between the shape and function. Anghel and Anghel (2012) described the complexities involved in reconstructive rhinoplasty in patients with NASAL BCC, emphasizing the need for qualified surgical techniques to restore the nasal structure and appearance after the elimination of cancerous tissues. Their findings underline the need for reconstructive techniques that are able to accommodate the functional breathing routes while considering aesthetic results, critical aspects when addressing facial deformities [4].

For larger defects that arise from careless BCC, reconstructive surgeries can involve the use of complex flap techniques, sometimes together with grafts from other anatomical sites. Wu et al. (2018) showed the usefulness of front axial pattern flaps combined with hard palate mucosa transplants in the reconstruction of medium facial defects, demonstrating that innovative approaches can significantly improve the rehabilitation process after extensive tumor exhibitions. These strategies underline the continuous evolution of surgical techniques and the critical role of reconstructions in achieving satisfactory functional and aesthetic results [5].

Eugen Gabriel Turcu et al. (2024) underscore the significance of axial local facial flaps in post-traumatic facial reconstruction, noting their versatility and effectiveness in reconstructive procedures following tumor excisions as well [6].

The surgical treatment of careless basal cell carcinoma in the face requires an integrated approach, emphasizing the importance of early diagnosis, surgical split and sophisticated reconstruction methods. The growing prevalence of BCC accentuates the need for greater awareness, preventive education and a proactive position towards management. The multidisciplinary collaboration among health professionals is essential to create a robust framework to address the innumerable challenges presented by careless BCC. This integrated approach finally leads to improve the patient's results, restoring both health and the quality of life for people affected by this potentially devastating condition.

MATERIALS AND METHODS

Double basal cell carcinoma (BCC) management has a unique challenge that requires a comprehensive understanding of surgical techniques and reconstructive strategies. In assessing a double BCC case, a methodical approach should include an accurate diagnosis, the formulation of an individualized treatment plan and a thorough discussion of the post -operative results that produce insightful implications for future practices.

Basal cell carcinoma is recognized as the most prevalent form of skin cancer, predominantly due to the basal layer of the epidermis. Its etiology is widely attributed to chronic sun exposure, genetic predisposition and other environmental factors. In clinical practice, the diagnosis of BCC usually involves a combination of complete patient history, physical examination and, finally, histopathological confirmation through a biopsy. The presence of double BCC, in which two or more injuries are identified simultaneously, highlights the need for vigilant surveillance and proactive intervention, given the potential for invasion and local recurrence.

This case involves a 72-year-old female patient who presented with a dual ulcerative basal cell carcinoma affecting the left nasal ala, lower eyelid, and adjacent cheek, with an estimated progression over approximately two years. Diagnosis was established through dermatoscopyand confirmed by biopsy.

A thorough preoperative assessment was performed, including laboratory investigations, cardiologic evaluation, and contrast-enhanced CT scans of the head, chest, and abdomen. No signs of metastatic disease or other pathological findings were identified, making the patient a suitable candidate for surgery. After multidisciplinary discussion, the decision was made to proceed with surgical excision and immediate reconstruction, carried out by the plastic and reconstructive surgery team.

Tumor resection was performed with a 5 mm oncologic safety margin, which was later confirmed to be clear on histopathological examination. Immediate reconstruction of the post-excisional defect was undertaken in the same operative session. The defect of the left nasal ala was reconstructed using a reverse axial nasolabial flap, based on the angular artery, with a de-epithelialized pedicle and retrograde flow. To reconstruct the internal lining of the nasal vestibule, a full-thickness skin graft harvested from the posterior auricular area was applied.

This flap technique offered a reliable, single-stage solution with excellent functional and aesthetic outcomes, demonstrating its versatility in complex facial reconstruction.

Following current surgical recommendations, precision of the basal cell carcinoma affecting the left lower eyelid and surrounding cheek was obtained with a 5 mm oncologic safety margin. The histological analysis verified total tumor resection. The defect's location and extent led to urgent reconstruction scheduled and carried out at the same operative session.

The deformity was corrected by a cervicofacial rotation flap plasty including a medial pedicle derived from the facial artery. This well-vascularized, flexible flap covered enough tissue to rebuild the matching cheek aesthetic unit as well as the lower eyelid. Its design made it possible to preserve natural facial contours, therefore preserving both beauty and function—qualities very vital in facial reconstructive results.

Recovery following surgery was good. Standard postoperative treatment was given to the patient including prophylactic antibiotics, analgesics, and anti-inflammatory drugs. Healing went without any indications of flap compromise, infection, or other problems. The flap kept great viability, and the patient and the surgical team both rated the aesthetic outcome as quite good.

Post -operative, the patient was closely monitored for complications such as infection, wound dehiscence or additional malignancy. The follow-up protocol was established with regular visits, focusing on surveillance for the potential recurrence of the BCC and the meticulous assessment of the surgical site. In the following months, surgical places demonstrated satisfactory healing with minimal scars, indicative of the successful excision of carcinomas, as well as the effectiveness of reconstructive techniques employed. The patient's feedback during follow-up consultations reflected a positive self-image and satisfaction with surgical results, reiterating the importance of integrating psychological aspects in the clinical management of patients with skin cancer.

In addition, this case emphasizes the importance of interdisciplinary collaboration in the management of double BCCs. The involvement of dermatologist and reconstructive surgeons is essential to ensure holistic care. The coordinated effort not only increases surgical results, but also reinforces the need for education and awareness in progress in relation to skin cancer and its treatment.

RESULTS AND DISCUSSIONS

The surgical management of this case required the use of two facial reconstructive techniques that successfully met both aesthetic and functional goals. The primary objective was the complete excision of the tumor with oncologically safe margins, along with histopathological confirmation of both the resection and the tumor's histological type.

To address the resulting tissue defects, two reconstructive flaps were applied simultaneously during the same surgical session. This combined approach minimized the number of operative stages and facilitated the patient's rapid social reintegration.

Fig 1. Preoperative view

Fig 2. Markings of the flaps

Fig 3. Reverse deepithelialized nasolabial flap

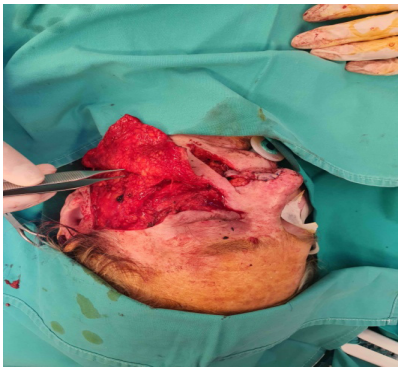

Fig 4. Cervico-facial rotation flap

The two selected reconstructive methods enabled full restoration of two distinct aesthetic units and subunits—the left nasal ala, as well as the left lower eyelid and midfacial region—in a single operative time.

A dependable, one-stage surgical method for reconstructing full-thickness facial defects, most frequently in the alar region (the lateral part or "wing" of the nose), is the reverse deepithelialized nasolabial flap. Using a flap of tissue taken from the nasolabial fold, this technique removes the epidermis, the outermost layer of skin and transpose the flap to fit the soft tissue defectbased on a superior vascular pedicle from angular artery. For internal lining of the nasal vestibule we use in this case a skin graft from the posterior concha. There are some advantages: single stage reconstruction, ideal tissue quality, versatility and excellent color and texture match. The nasolabial region provides soft skin for nasal reconstruction , particularly for the delicate alar subunit.

Fig 5. Imediate postoperative result

The reverse deepithelized nasolabial flapis characterized by its dependence on the rich vascular supply of the nasolabial area, which facilitates the transfer of effective tissue with minimal complications. This technique also uses adjacent tissue, minimizing the morbidity of the donor site while providing an aesthetically favorable result. As indicated in a systematic review by Chakraborty et al., nasolabial flap demonstrates significant viability and reliability when reconstructing nasal defects, particularly compared to other methods such as the paramedic front flap [7]. The improvement of aesthetic results is especially relevant in the alar region, where the precise contour and texture are very important.

The benefits of this flap are extended beyond mere aesthetic considerations. Functionally, this technique allows the reconstruction of complex defects without compromising the functional units surrounding the nose. The flexibility of the nasolabial flap also allows surgeons to adapt it to various sizes of defects, which makes it highly versatile for different clinical scenarios. In addition, the natural contour of the flap is aligned well with the existing anatomy, thus reducing the need for extensive reviews after surgery [7].

The flap design typically incorporates an area of skin of the nasolabial fold that has an adequate size to cover the defect. A key step is the depth of the flap, which, as the term implies, implies the elimination of the superficial epithelium to promote better integration and healing when transferring to the receiving site. The deepithelized flap area allows better adhesion to the underlying tissues and encourages neovascularization after the transfer [7].

Once the flap is mobilized, it is gently placed on the alar defect. Precise suture techniques are used to guarantee an optimal voltage distribution and minimal scars. Postoperative attention is crucial, since it significantly affects the viability of the flap. Regular monitoring of compromise signs or vascular complications is essential during the healing phase.

Fig 6. Postoperative frontal view (3 month)

Fig 7. Postoperative lateral view (3 month)

The application of this technique is well supported by current literature. For example, in a recent case study, the innovative flap technique of the forearm of the tubular radial artery was used for comprehensive nasal reconstruction, reflecting the continuous advance in reconstructive methods and emphasizing the need for custom approaches according to individual cases [8]. The effectiveness of several flaps, including the nasolabial flap, is underlined in these studies, highlighting the importance of choosing the correct reconstructive option based on the specific defect and the characteristics of the patient [8].

The application of techniques such as the "balance" method to correct alar vertical discrepancies also illustrates the range of options available for surgeons [9].

The forehead flap reinforced with auricular cartilage is a tried-and-true technique that offers both superior cosmetic results and structural support when the nasal ala needs to be fully rebuilt. However, it typically involves multiple surgical stages, which could prolong the course of treatment and recovery [10, 11]. Since the defect in this case only involved a partial loss of the left nasal ala, a simpler approach was feasible. A reverse deepithelialized nasolabial flap was chosen because it would provide reliable coverage and satisfactory cosmetic and functional results in a single surgical session.

These advances underline the importance of ongoing research and adaptation of surgical approaches to improve functional and aesthetic results for patients.

For the reconstruction of the left lower eyelid and midface defect we used the cervico-facial rotation flap. The cervico-facial rotation flap is a well-established reconstructive technique employed for the restoration of moderate to large soft tissue defects of the cheek and adjacent facial regions. This flap involves the elevation and rotation of skin, subcutaneous tissue, and occasionally the platysma muscle from the lower face and cervical area into the defect site. This flap has random-pattern vascularization, it relies on a subdermal plexus that allows flexibility in flap design and applicability for various defect sizes and locations.

The cervico-facial rotation flap can be adapted for defects of all three aesthetic zones of the cheek. It can be modified intraoperatively for all shapes of tissue loss. Also, this flap offers superior color, texture and thickness match which contributes to best cosmetic results. It is commonly used in the reconstruction of defects following oncologic excision, trauma, or congenital abnormalities affecting the cheek, periorbital region, or neck.

The reconstruction of the cheek after trauma or oncological resections remains a challenging effort in facial plastic surgery. The cervico-facial rotation flap has become a fundamental technique due to its versatility, robust and potential blood supply for functional and aesthetic rehabilitation. This review of literature aims to explore the indications, surgical techniques, the results, advantages and complications associated with the cervico-facial flap in the reconstruction of the cheeks, particularly in patients with facial trauma.

The indications for the use of the cervico-facial rotation flap include mainly extensive soft tissue defects resulting from trauma, tumor split or congenital deformities. These flaps are particularly suitable for cases that require a volume of significant tissue and vascularization to improve postoperative healing. Nakade et al. (2016) emphasized that the capacity of the cervical-facial rotation flap to cover large surface areas while maintaining the proper blood supply makes it an option favored in reconstructive surgery for compromised regions of the face. In addition, the flap design allows the accommodation of several facial contour needs, thus improving the aesthetic results [12].

The surgical technique for the elevation of the cervico-facial rotation flap implies a meticulous planning and execution. The flap is generally harvested from the cervical and facial regions, using the facial artery such as the primary vascular supply. Depending on the size and location of the defect, the flap can be raised as a muscle or a fasciocutaneous flap, providing flexibility to achieve optimal coverage [13]. After elevation, the flap is transposed to the defect site.

The anastomosis of the vascular supply is critical, and the viability of the flap often depends on a precise surgical manipulation and the understanding of the local anatomy. In the hands of qualified surgeons, this technique produces promising results, as seen in numerous series of cases that demonstrate an effective reconstruction of complex defects [14].

The results of cervico-facial flap reconstructions are generally favorable, with most reports indicating high flap survival rates and good aesthetic results. Albanese et al. (2020) reported a series of patients who benefit from a modified version of the cheek progress flap, highlighting improvements in the function and appearance. Long-term results, such as patient satisfaction and functional restoration of facial dynamics, are critical metrics that underline the effectiveness of cervical-facial flap procedures [15].

Despite its advantages, the cervico-facial rotation flap approach does not lack potential complications. As with any surgical intervention, flap necrosis, wound infection and donor site morbidity are concerns that require careful perioperative management. Literature emphasizes that complications may arise due to inappropriate vascular supply, technical errors during the elevation or transposition of the flap, and patient factors such as systemic diseases that could affect healing. Nakade et al. (2016) pointed out that the potential for complications requires an exhaustive preoperative evaluation and a meticulous surgical technique to mitigate these risks effectively [12].

In addition, the aesthetic implications of the reconstruction of the cervico-facial flap must be taken into account, since

the surgical site is often highly visible, and the patient's expectations with respect to the appearance can influence satisfaction [14]. Personalized approaches to address contour irregularities and skin texture at the reconstruction site are essential to improve the results.

The cervico-facial rotation flap is a vital option to rebuild cheese defects in patients with trauma, which offers significant advantages in terms of vascular supply and functional restoration. The surgical technique, although complex, can produce excellent results when executed correctly. However, the awareness of possible complications and the need for careful patient selection and preoperative planning is crucial to optimize the results. Continuous research and clinical observations will further clarify the effectiveness and long -term adaptability of this technique in an evolving panorama of facial reconstructive surgery.

CONCLUSIONS

Reconstructing facial defects that involve both the nasal ala and midface is a complex task, especially when vital structures like the alar rim, lower eyelid, and cheek are affected at the same time. In this case, the patient had two separate basal cell carcinomas—one on the left alar rim and another extending from the lower eyelid into the cheek. Surgical removal of both tumors left a significant defect that required a carefully planned reconstruction to restore both appearance and function.

To address the alar defect, we used a reverse deepithelialized nasolabial flap, which proved to be an ideal option. This technique allowed us to reconstruct the nasal alar rim in a single step using soft, well-matched tissue from the nearby nasolabial fold. It offered a reliable solution that maintained the natural contour and appearance of the nose, with minimal impact on surrounding areas.

For the larger defect affecting the lower eyelid and cheek, a cervico-facial rotation flap was chosen. This flap provided excellent coverage and mobility, allowing us to restore the shape of the cheek and support the lower eyelid. Because it uses tissue from the neck and face, the result blended well with the surrounding skin, and the donor site healed with minimal visible scarring. The procedure is relatively straightforward and was well tolerated by the patient.

By combining these two regional flaps, we were able to reconstruct multiple facial areas in a single operation. The patient experienced a smooth recovery and quickly returned to daily life with restored facial harmony and function. This case illustrates how tailored, region-specific flaps can work together effectively to achieve both aesthetic and practical success in complex facial reconstruction.

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