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Case Report

Transposition flap use to repair failed melolabial interpolated flap post basal cell carcinoma excision of nasal region

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Abstract Reconstruction of postoperative defects in basal cell carcinoma (BCC) in the nasal region is quite challenging. Hematoma, bleeding, infection, partial or total necrosis are complications of the procedure. A 72-year-old woman admitted with a non-healing wound on her nose since a year ago. She had a history of hypertension. On dermatological examination of nasal alar, there was an ulcer measuring 1.6x1.7x0.1cm has an uneven surface, irregular edges, erosions, pus, blood and telangiectasia. Dermoscopy and histopathological examination support the picture of nodular BCC. The patient was managed with Mohs microscopic surgery followed by reconstruction of the defect with a melolabial interpolated flap. On the 11th day, necrosis was found on the distal, resulting in a new defect. At week 8, second surgery was performed with a transposition flap. The results of the evaluation at the fourth week showed good wound healing. Comorbidities such as hypertension can disrupt vascularization and interferes with flap oxygenation, causing partial necrosis on the distal of the flap. Transposition flap was used to cover the previous flap failure with good results.

Key words
Transposition flap; Nasal defect; Basal cell carcinoma; Necrosis; Melolabial flap.

Introduction

Basal cell carcinoma (BCC) is the most common cancer in humans. The prevalence of BCC is estimated at more than 3 million new cases each year in the United States. Basal cell carcinoma often manifests on sun-exposed areas especially the nose. Treatment for BCC that provides optimal results and lowest recurrence rate is Mohs microscopic surgery (MMS), however, post excision defect closure on nasal region can be quite challenging.[1]

A skin flap can be used to repair defects on the skin. Interpolated flap is the most suitable technique and is widely used as a reconstruction of the inferior 1/3 nasal defect. However, complications like necrosis can create new defect. A transposition flap can be used to repair small to medium head and neck defects.[2] We report a case of failed interpolated flap repair for a defect in nasal BCC with a transposition flap.

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Case report

A 72-year-old woman, a farmer, admitted with non-healing wound on her nose since one year ago. She had never experienced a similar complaint or malignancy, she had a history of hypertension. Her blood pressure was 130/90. In the nasal alar region there was an ulcer with a size of 1.6x1.7x0.1 cm, uneven surface, irregular borders with erosion, pus, blood and telangiectasia. Dermoscopy revealed spoke wheel-like structure, blue-gray ovoid nest,

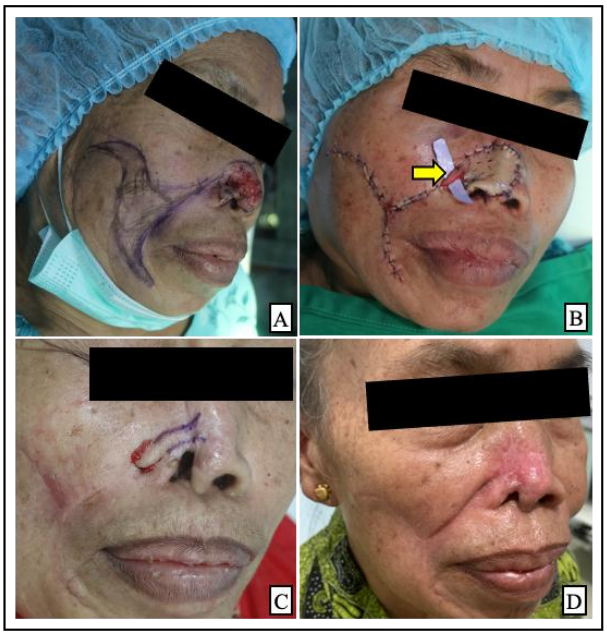

Figure 1. A. Marking of initial operating area. **B.** Sutured melolabial interpolated flap with pedicle placed in tissue bag between donor skin area and defect (yellow arrow). **C.** Marking of the second surgery. **D.** Evaluation at week 8 showed good wound healing.

arborizing telangiectasia and ulceration which supported the diagnosis of nodular BCC. The patient was planned for MMS and nasal reconstruction with a peninsular melolabial interpolated flap. The operating procedure performed is as follows **(Figure 1A,1B)**:

1. Antiseptic and aseptic measures followed by surgical margin marking.
2. Tumescent anesthesia was injected, tumor was excised and sent for microscopic examination. Re-excision was carried out until all the margins were tumor free.
3. The donor skin portion of the melolabial was trimmed to adjust the thickness of the nasal skin, positioned and sutured with skin tissue as a pedicle retaining vascularization flap from the donor area is placed over or across the skin between the donor and recipient areas, flap was punctured using surgical blade to prevent a hematoma.
4. The surgical wound was covered with 2% mupirocin ointment and covered with extra thin® duoderm, sterile gauze and hypoallergenic tape.

The histopathological examination revealed islands of basaloid tumor cells with hyperchromatic nuclei arranged irregularly in the dermis, tumor cells arranged in a palisade manner on the edges. On the first day of evaluation, a hematoma was found on the distal of the flap. On the 11th day of evaluation, distal necrosis occurred, then debridement was performed. Eight weeks after the first operation, reconstruction was performed with a transposition flap and the surgical procedure was as follows **(Figure 1C,1D)**:

1. Antiseptic and aseptic measures followed by 1% lidocaine injection.
2. The pedicle was incised from the donor area of the previous flap procedure and transposed on the defect area and then sutured.
3. The surgical wound was covered with 2% mupirocin ointment and covered with duoderm extrathin® sterile gauze and hypoallergenic plaster.

Discussion

Basal cell carcinoma is a type of basal cell malignant tumor that grows slowly followed by an indolent phase in areas that are frequently exposed to the sun. Choi et al in 2013 reported that most cases of BCC were found in the nasal area (33.1%).[1,3] The patient in this case had a profession with the risk of high sun exposure. The nodular BCC is the most common BCC that manifests as translucent papules or nodules with irregular edges, telangiectasias and necrosis in the center, sometimes ulcerated. Typical dermoscopy features in BCC are blue gray ovoid nest, blue-grey ovoid globules, maple leaf-like areas, spoke-wheel like structure, arborizing teleangiectasia, shiny white-red structureless

areas, white streaks and ulcerations. The histopathological features of nodular BCC are basophilic nest nodules with stromal retraction.[1] In this case, the clinical, dermoscopy and histopathological features supported the diagnosis of ulcerated nodular BCC.

Mohs micrographic surgery offers the most superior long-term cure rate compared to other surgical techniques, however, reconstruction of the nose after tumor excision is quite a challenging because of its unique three-dimensional anatomy as well as functions and aesthetics that must be maintained. If primary closure is not possible, a skin graft or local flap may be considered depends on the location, size and depth of the defect. Defects in the nasal alar can be repaired with a melolabial flap that uses a donor flap from the cheek and transferred to the nose to create a natural facial contour.[1,4]

Complications of flaps include partial or total necrosis. Co-morbidities such as hypertension and smoking also affect flap's viability, although the mechanism remains unclear. High blood pressure can interfere with oxygenation of the flap that causes partial or total necrosis.[5] In this case there was partial necrosis in the distal part of the flap which could be caused by hypertension that the disrupt vascularization of the flap. The transposition flap uses donor skin directly adjacent to the defect and widely used for nasal reconstruction.[4] A new defect in this case was successfully repaired with transposition flap.

Conclusion

In this case necrosis occurred in the distal part of the flap resulting in a new defect in the nasal alar region. The transposition flap technique in this case has been successfully used to close the defect due to partial necrosis after the melolabial interpolated flap.

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