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Management of Nodular Nasal Basal Cell Carcinoma with Wide Excision, Transpositional Median Forehead Flap, Forehead Split Thickness Skin Graft: Case Report

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Introduction: Basal cell carcinoma (BCC) is the most common skin type cancer with an incidence rate of around 75-80%. The most common location is in the head and neck area around 70-80% and followed by other body parts around 25% consist of the penis, vulva or perianal area and 5% on the skin. BCC occurs more frequently in light-skinned individuals compared to dark-skinned individuals. The incidence rate is relatively lower in Asians, blacks ethnic, and Hispanics.

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Case Presentation: A 66 years-old woman complained of scabs on the right side of her nose which had become increasingly widespread for the past 2 years. The wound was initially the size of a mole and was scratched until it spread until the patient was hospitalized. Physical examination showed a wound in the nasal area measuring 4 x 5 x 1 cm, irregular wound edges, cartilaginous wound base with necrotic tissue and pus. The first biopsy examination showed poorly differentiated basal cell carcinoma. The patient was treated with Nasal Reconstruction surgery consisting of wide excision was performed by surgical oncologist, transpositional median forehead Flap and forehead Split Thickness Skin Graft were performed by reconstructive plastic surgeon.
Discussion: The diagnosis of BCC in this patient was based on regarding history taking, physical examination and histopathological examination. However, for defects with a diameter of more than 1.5 to 2 cm, generally recommended using axial pattern flaps such as forehead flaps, nasolabial flaps and dorsal nose flaps. In this case, the patient was treated with wide excision followed by nasal reconstruction with a transpositional forehead flap and forehead split thickness skin graft.
Conclusion: Nevertheless, regional flaps remain the recommended procedure for nasal reconstruction after wide excision of the tumor. Accurate analysis of the damage combined with evaluation of the patient's clinical condition is necessary to select the best surgical technique. Thorough knowledge of regional vascular anatomy and a comprehensive multidisciplinary approach are important first steps for proper treatment of nasal skin cancer, so that the procedure for wide excision of nasal basal cell carcinoma followed by nasal reconstruction with transpositional forehead flap and split thickness skin graft, can provide satisfactory result.

Keywords: basal cell carcinoma; nasal reconstruction; wide excision; split thickness skin graft.

1. INTRODUCTION

Basal cell carcinoma (BCC) is the most common skin type cancer with an incidence rate of around 75-80%. The most common location is in the head and neck area around 70-80% and followed by other body parts around 25%consist of penis, vulva or perianal area and 5% on the skin. BCC occurs more frequently in light-skinned individuals compared to dark-skinned individuals. The incidence rate is relatively lower in Asians, blacks ethnic, and Hispanics [1,2].

The current ratio of male to female incidence is around 2.1 : 1. The incidence of BCC increases with age; approximately 5-15% of total BCC cases [3]. It usually occurs in patients aged 20 to 40 years, and the incidence is more common 100 times more common in people aged 55 to 70 years and rarely seen in people aged 20 years or younger. BCC has a mortality rate of around 0.1% to 2% of all patient deaths due to cancer [1,4].

The current management of BCC involves surgical modalities such as excision, electrodessication and curettage (EDC), cryosurgery, and Mohs micrographic surgery. This method is usually only used for local BCC and offers a high cure rate within 5 years, with a percentage over 95%. We report the case of a man diagnosed with Large Nasal Basal Cell Carcinoma. We present case details, histopathological findings, and management [1].

2. CASE PRESENTATION

A 66 years-old woman complained of scabs on the right side of her nose which had become increasingly widespread for the past 2 years. The wound was initially the size of a mole and was scratched until it spread until the patient was hospitalized. Patients also complained of pain in the wound. There are no symptoms of fever, stuffy nose, visual disturbances.

The first biopsy examination showed poorly differentiated basal cell carcinoma and incision was carried out in October 2023. The patient was treated with Nasal Reconstruction surgery consisting of wide excision was performed by surgical oncologist, transpositional median forehead Flap and forehead Split Thickness Skin Graft were performed by reconstructive plastic surgeon.

The patient had no history of chemotherapy or radiotherapy treatment. The patient complained of the wound of her nose had increasingly widespread, then the patient was referred to the Surgical Oncology polyclinic. The patient has lost 8 kg in weight in the last two months.

The patient's vital signs showed blood pressure 122/64 mmHg, pulse 96 beats per minute, breath 20 beats per minute, temperature 36.4^{o}C. The patient's body mass index was in the underweight category (19.27 kg/m^2, weight: 48 kg; TB: 158 cm). On examination of the thorax,

abdomen, and extremities, there were no abnormalities. The patient's right and left conjunctiva looked pale. Physical examination showed a wound in the nasal area measuring 4 x 5 x 1 cm, irregular wound edges, cartilaginous wound base with necrotic tissue and pus.

Laboratory examination in January 2024 showed normal hemoglobin (12.9 g/dl, normal: 12.0-15.6 g/dl), normal hematocrit (36%, normal: 35-45%), normal leukocytes (9.400/µl, normal: 4.500-11.000/µl), normal platelet (263.000/µl, normal: 150.000-450.000/µl), normal erythrocyte (4.34 million/µl, normal: 4.10-5.10 million/µl). The patient's current blood glucose, creatinine, and urea were normal. The patient's PT, APTT, and INR values were normal. The patient was diagnosed with Nasal Basal Cell Carcinoma. The patient was scheduled for wide Excision, transpositional median forehead flap, forehead split thickness skin graft procedure.

Fig. 1. Clinical picture of the patient in January 2024

Fig. 2. Intraoperative: Wide excision of tumor with 0.5 cm margin (A & B); defect closure procedure with transpositional median forehead flap and forehead split thickness skin graft (C)

Fig. 3. Clinical picture 1 month after surgery in February 2024

During the operation, the patient is under general anesthesia, and the operating field is covered sterilely. Then a wide excision procedure was carried out by an oncological surgeon with an incision margin of 0.5 cm from the lesion edge. During the operation there was bleeding of 200 cc. Then the procedure was continued by a reconstructive plastic surgeon and a transpositional median forehead flap procedure was carried out with vascularization from the bilateral supratrochlear arteries. Then a procedure to close the defect was carried out with a forehead split thickness skin graft taken from the donor site of the right thigh using a dermatome and sutured simply interrupted using non-absorbable 5.0 thread. Then the wound is covered with moist betadine gauze and dry gauze.

After surgery, the patient was given Normal Saline infusion 1.500 cc/24 hours, ampicillin injection 1 gr/8 hours, metamizole injection 1 gr/8 hours, omeprazole injection 40 mg/12 hours. The Patient was in good general condition, stable hemodinamic and was treated for 3 days after surgery. The Patient was decided to outward treatment and control of surgical wound at the polyclinic. The Pathological examination after surgery showed basal cell carcinoma, nodular type. At One month after surgery, the patient goes to the polyclinic for evaluation of the wound and flap after surgery. The results of the operation showed that the flap was able to attach well with signs of good vascularization, there was no wound dehiscence or infection after surgery, and there were no functional abnormalities.

3. DISCUSSION

The diagnosis of BCC in this patient was based on regarding history taking, physical examination and histopathological examination. The patient a woman 66 years old; according to the literature that BCC is often found in people over 40 years of age. Physical examination showed a wound in the nasal area measuring 4 x 5 x 1 cm, irregular wound edges, cartilaginous wound base with necrotic tissue and pus.

The patient is a farmer who always exposed to sunlight during the day. A number of researchers stated that the occurrence of BCC is related to sun exposure, skin type, skin color and other predisposing factors [4]. The immune system plays a key role in the suppression and progression of basal cell carcinoma (BCC) [5]. The main etiological factor in BCC is exposure to ultraviolet radiation (UVR) which, especially in Fitzpatrick's lighter skin types, causes DNA damage. UVR plays a role in creating an immunosuppressive environment, which facilitates the development of cancer [6]. Skin cancer is the most common form of cancer in the United States. While everyone should protect themselves against UV radiation, it is particularly important to protect children. Most of an average person's UV exposure from the sun occurs before the age of 18 [2]. UV exposure or frequent sunburns, particularly during childhood, can make developing skin cancer more likely [5]. The cell transformation into malignancy due to radiation is thought to be related to the changes DNA is the formation of products called

pyrimidine dimers are thought to play a role plays a role in tumor formation and mutation in tumors suppressor gene. Previous studies, including whole-exome sequencing (WES) analyses, have also recognized other genes/pathways frequently mutated in BCC, including *TP53, MYCN, PPP6C, PTPN14, STK19*, and *LATS1*, as well as genes involved in the RTK-RAS-PI3K and Hippo-YAP pathways [7,8].

BCC has three recognized growth patterns: nodular, superficial, and morphemic. Histopathological variants of nodular BCC include solid (primordial), keratotic (pillar), cystic, and adenoid types. Adenoid BCC (ABCC) is a rare histopathological variant with a reported incidence in seven of 103 BCC cases [9,10].

However, for defects with a diameter of more than 1.5 to 2 cm, generally recommended using axial pattern flaps such as forehead flaps, nasolabial flaps and dorsal nose flaps [11,12]. In this case, the patient was treated with wide excision followed by nasal reconstruction with a transpositional forehead flap and forehead split thickness skingraft.

4. CONCLUSION

There are several variety of surgical procedure for repairing skin damage involving the nose, and all should be part of the surgeon's skill set. Nevertheless, regional flaps remain the recommended procedure for nasal reconstruction after wide excision of the tumor. Accurate analysis of the damage combined with evaluation of the patient's clinical condition is necessary to select the best surgical technique. Through knowledge of regional vascular anatomy and a comprehensive multidisciplinary approach are important first steps for proper treatment of nasal skin cancer, so that the procedure for wide excision of nasal basal cell carcinoma followed by nasal reconstruction with transpositional forehead flap and split thickness skin graft, can provide satisfactory result.

CONSENT

As per international standards or university standards, patient(s) written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

As per international standards or university standards written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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