Large Nasal Basal Cell Carcinoma with Wide Excisi, Transpositional Median Forehead Flap, and Forehead Split Thickness Skin Graft Management : Case Report

Abstract

Background: Basal cell carcinoma (BCC) is the most common skin typecancer 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.[1]

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 1cm, 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 onregarding history taking, physical examination andhistopathological 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

Introduction

Basal cell carcinoma (BCC) is the most common skin typecancer 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]

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. 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]

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.[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 1cm, irregular wound edges, cartilaginous wound base with necrotic tissue and pus.

Figure 1. Clinical Picture of the Patient in January 2024

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 valueswere normal.The patient was diagnosed with Nasal Basal Cell Carcinoma. The patient wasscheduled for wide Excision, transpositional median forehead flap, forehead split thickness skin graft procedure.

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 thelesion 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 withmoist 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 1gr/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.

Figure 2. Picture during Operation

Figure 3. Picture 1 month after surgery in February 2024

Discussion

The diagnosis of BCC in this patient was based onregarding history taking, physical examination andhistopathological examination. The patient a woman 66 years old; according to the literature that BCC isoften found in people over 40 years of age. Physical examination showed awound in the nasal area measuring 8.5 x 8 x 1.5 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 isrelated to sun exposure, skin type,skin color and other predisposing factors.Exposure of ultraviolet radiation, especially UVBSunlight can affect the patient's skinmalignancy through immunology andcarcinogenic effects of ultraviolet radiation. The cell transformation into malignancy due toradiation is thought to be related to the changesDNA is the formation of

productscalled pyrimidine dimers are thought to play a roleplays a role in tumor formation and mutation in tumorssuppressor gene.[1,2]

At the genetic level, the main driver is activation Hedgehog (Hh) pathway with an inactivating PTCH1 mutation was identified in 90% of sporadic BCC and activates the SMO mutation by about 10%. Hh pathway alterations are also found in other Hh-dependent tumors such as medulloblastoma and neuroblastoma.[4] All of these tumors develop in patients with naevoid basal cell carcinoma syndromes such as NBCCS and syn Gorlin syndrome. Rare genetic disorder making them susceptible to some types of BCC, because of the germline mutations in PTCH1 and less frequently found in PTCH2, SMO and SUFU. A few number of BCCs have no one mutations in the Hh pathway. Other driver mutation has also been found in cancer-related genes such as PPP6C, MYCN, STK19, LATS1, ERBB2, PIK23C, NRAS, H-RAS and K-RAS, as well as loss of function of RB1, PTPN14 and FBXW7. Mutations in the P53 gene is also frequently observed.[5,9] However, to date, no Genetic profiles have been associated with specific histopathological subtypes of BCC.[9]

Based on the 2018 WHO classification of skin tumors, BCC consists of a nodular subtype which has keratotic, cystic and adenoid variants.[6,7]Riesye et al., 2021 found that the most significant variants were adenoid (63.1%), keratotic (34, 5 %), and cystic (2.4%). These results are similar to previous studies where adenoids and keratotics had proportions of 66.7% and 33.3%, respectively.[8]

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 skingraft.[3]

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.

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