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Case Report

Ear, Nose and Throat Section

A Case Report on Paramedian Forehead Flap: A Treatment Approach for Basal Cell Carcinoma of Nose

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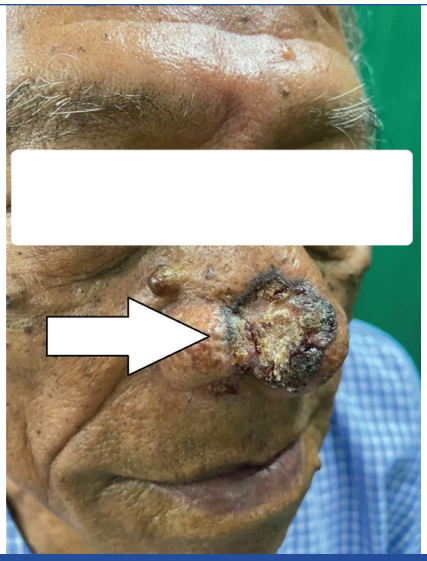
ABSTRACT

Non melanoma Skin Cancers affect only about 1-2% of Indians, but they account for more than one-third of skin cancers in the white population. A total of 75% of all non melanoma skin cancers are Basal Cell Carcinomas (BCCs), the most prevalent type of skin cancer globally. Risk factors include middle or old age, fair skin (Fitzpatrick skin type I or II), immunosuppression and Ultraviolet (UV) radiation. While it can be extremely disfiguring, it is rarely fatal. Currently, the cornerstones of BCC treatment are tumour excision, Electrodesiccation and Curettage (EDC), cryosurgery, and Mohs micrographic surgery. The paramedian forehead flap is a local cutaneous flap that can be used for nasal reconstruction. Hereby, authors report a case of an 82-year-old male patient who presented with the classical findings of an ulcer on the dorsum of the nose, which was diagnosed as BCC based on typical clinical features and histopathological examination. The patient underwent surgical resection of the lesion with paramedian forehead flap reconstruction. The paramedian forehead flap is an extremely effective tool for nasal reconstruction. Using paramedian forehead flaps, it is possible to achieve stunning functional and aesthetic outcomes in cases of BCC of the nose with considerable technical expertise and knowledge.

Keywords: Cryosurgery, Electrodesiccation curettage, Nasal reconstruction, Surgical reconstruction

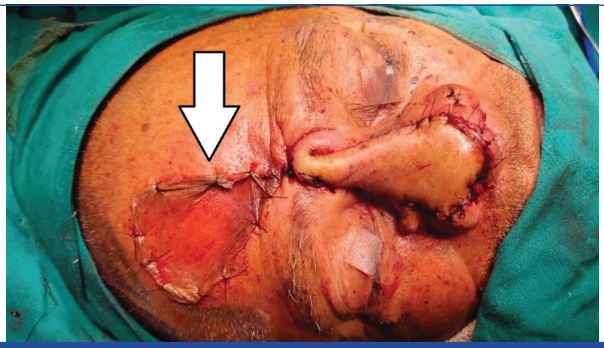
CASE REPORT

An 82-year-old male patient presented with an ulcer on the right side of the nose that had persisted for one year. He works as a farmer and has been addicted to chewing tobacco two to three times a day for the past 20 years. The lesion initially started as a peanut-sized pustule, which was insidious in onset and gradually progressed to become an ulcer the size of a coin. The patient did not report any history of pain, bleeding, or discharge. A solitary, hyper-pigmented ulcer measuring 2×2 cm was present on the right-side of the supra-tip area of the nose, extending to the right ala. The lesion had irregular margins with crusting present over it. The ulcer had indurated margins [Table/Fig-1]. The lesion was non tender and did not bleed upon touch. On anterior rhinoscopy, there was no mucosal or septal involvement. The diagnostic nasal endoscopy was normal.

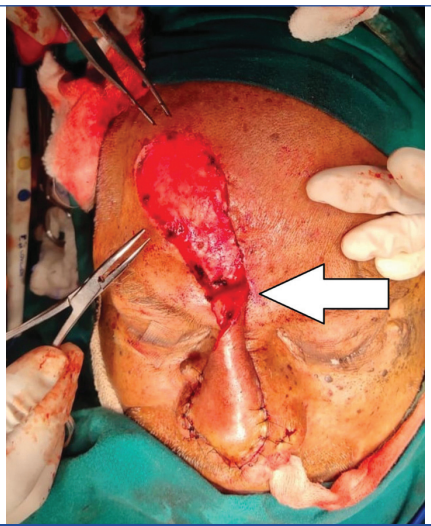


[Table/Fig-1]: Showing lesion over dorsum of nose.

An incisional biopsy taken from the lesion was consistent with BCC. Contrast-enhanced Computed Tomography-Paranasal Sinus (CECT-PNS) showed no infiltration of the underlying fat or erosion of the bones. All routine investigations for fitness under general anaesthesia were completed. A wide local excision with paramedian forehead flap reconstruction was performed under general anaesthesia [Table/Fig-2]. The forehead flap was elevated and transposed 180 degrees to conceal the defect [Table/Fig-3]. A split-thickness skin graft from



[Table/Fig-2]: Showing surgical reconstruction.



[Table/Fig-3]: The surgical site was covered by lifting and rotating the forehead flap 180 degrees.

the left thigh was used to cover the donor site. The postoperative status on the tenth day after the surgery is shown in [Table/Fig-4]. After six months of follow-up, the patient showed no signs of recurrence at the surgical site.

[Table/Fig-4]: Postoperative status on postoperative day 10.

DISCUSSION

Non melanoma skin cancers affect only about 1-2% of Indians, but they account for more than one-third of skin cancers in the white population [1]. BCC is the most common skin cancer worldwide, constituting 75% of all non melanoma skin cancers [2]. It arises from basal keratinocytes. Risk factors include middle or old age, fair skin (Fitzpatrick skin type I or II), immunosuppression, UV radiation, and others. In particular, individuals who have been exposed to ultraviolet light frequently and severely throughout their lives are more likely to develop it as they age [3].

The BCC usually occurs in skin that has been directly exposed to the sun. It is a locally invasive lesion with rare distant metastases [2]. Most of the time, BCC affects the head or neck; however, in rare cases, it can also affect the trunk and extremities [4]. The most common form is nodular BCC, which appears as a raised lesion with a rolled edge, telangiectasia, and central ulceration [2]. Although rarely fatal, BCC can be extremely disfiguring if treatment is insufficient or delayed.

Superficial BCC can be treated without surgery using imiquimod cream, which can achieve more than an 80% cure rate [5]. Cryosurgery, Mohs micrographic surgery, EDC, and tumour excision are currently the mainstays of BCC treatment. These treatments have high 5-year cure rates, typically over 95%, and are generally used only for localised BCC [6]. For locally advanced BCC, electrochemotherapy or Vismodegib, a hedgehog inhibitor, can be utilised [7].

One of the most typical sites for skin cancer is the face, which is extremely difficult to reconstruct following surgical excision. The second step in a successful skin cancer surgical treatment is the reconstruction of defects caused by the excision of the malignancy. The primary event, complete tumour extirpation, is the crucial step [8].

The forehead flap is a local cutaneous axial flap based on the supratrochlear artery [9]. A midline forehead flap can cover even a complete nasal defect. The forehead flap was planned obliquely to maximise the length and reduce the arc of rotation. The limitations of the nasolabial flap in this instance included the most frequent complication, which was trap-door deformity, followed by alar distortion and venous congestion. The location of the defect was inappropriate for the use of this flap. In the present case, due to the size of the defect and considering the age of the patient along with the patient's immune status, a paramedian forehead flap was considered, and it provided excellent aesthetic and functional outcomes.

The outcome of the surgery is largely impacted by the unique forehead anatomy of the patient. Bald patients who have significant tissue laxity are ideal candidates for this mode of reconstruction. Despite all these benefits, there are some drawbacks to employing forehead flaps, including the two-stage procedure, the bulkiness of the flap, color disparity, and the donor site scar [10,11].

Additionally, there are a few uncommon problems, such as sepsis and necrosis, that can be prevented with careful flap maintenance, the use of antibiotics, sufficient fluid intake, wrapping the large pedicle in petroleum gauze, and avoiding excessive base torsion [11].

The site, size, and depth of the lesions affect the criteria for surgical therapy. The goal of the surgery is to completely remove the tumour with 5 mm free margins and to use an appropriate flap to achieve a cosmetically appealing appearance [12,13].

The fact that the procedure is multi-staged may be one of the primary disadvantages of using forehead flaps to reconstruct skin defects. The present procedure followed the conventional two-step approach: flap transfer with contouring and thinning in the first stage, followed by flap section and inset in the second. Some authors have made the three-stage procedure more widely known by splitting the first step into two distinct steps: contouring and flap re-elevation thinning after a full-thickness flap transfer [14,15]. For these surgeons, this operative technique provides better aesthetic results for large defects, but it remains a very time-consuming and exhausting procedure for the patient.

Other authors have described a one-stage procedure for patients with related co-morbidities and those who may smoke [16]. In this one-stage procedure, the forehead flap is thinned, and a glabellar subcutaneous tunnel is created to move it to the nose [16,17]. The authors believe that this approach is complex and may jeopardise the pedicle. Patients responded favourably to the authors two-stage procedure, which produced satisfactory cosmetic outcomes. After oncologic resections, Blázquez-Sánchez N et al., examined the postoperative results of 41 patients who benefited from paramedian forehead flap reconstruction for nasal defects [18].

The transposition of hairy frontal skin into the nasal pyramid is one of the most commonly mentioned aesthetic problems associated with the forehead flap. Patients with hairy frontal skin may undergo laser or chemical depilation before surgery [19].

CONCLUSION(S)

A paramedian forehead flap is an extremely effective method for nasal reconstruction. It can produce stunning functional and aesthetic outcomes. Successful implementation requires a great deal of technical expertise and knowledge. The results of this reconstruction are highly satisfactory and provide good cosmesis.

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