

Reconstruction of Advanced Basal Cell Carcinoma of the Face: Case Report

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Abstract: Reconstruction of advanced basal cell carcinoma of the face presents a challenge. Anterolateral thigh free flap (ALTF) and radial forearm free flap (RFFF) are commonly used free flaps for head and neck reconstruction. However, we found ALTF is considerably thicker than that of RFFF. Hence for facial reconstruction following basal cell carcinoma excision, the RFFF is preferred due to its flexibility and cosmetic outcomes.

Keywords: Basal cell carcinoma, facial reconstruction, radial forearm free flap, and anterolateral thigh flap.

INTRODUCTION

Basal cell carcinoma (BCC) is the most common skin cancer of the head and neck region [1,2]. The most important factor involved in BCC's pathogenesis is the cumulative exposure to ultraviolet radiation in the wavelength range from 290 to 320 nm [3]. Other risk factors may include long-term intake of arsenic; and fair-skinned people who tan poorly and burn easily. In addition, BCC may arise from preexisting conditions like chronic scars, chronic ulcers (Marjolin's ulcer), and sinuses [4]. People with genetic syndromes like xeroderma pigmentosa and nevoid basal cell carcinoma syndrome are at an increased risk of developing BCC and need lifelong monitoring of skin malignancies and ultraviolet shielding. The nodular or noduloulcerative lesions are the most common type, accounting for 75% of cases of BCC whereas superficial BCC represents approximately 10% of BCC. The incidence of metastasis in BCC is rare, occurring in 0.0028 to 0.1% of patients [5]. Unlike malignant melanoma, BCC is not usually life-threatening but can lead to considerable morbidity and complications as it is locally aggressive [6]. Reconstruction of the face after excision of basal cell carcinoma of the face presents a challenge in terms of aesthetic and functional outcomes for the patient.

CASE PRESENTATION

We presented in this paper a case of BCC reconstructed using radial forearm free flap (RFFF). A male patient age 56 years presented to ENT Head and Neck Surgery outpatient department with non-healing ulcer for more than two years. The ulcer was gradually

increasing over the time with history of blood oozing from the ulcer area. Consent of the patient was taken. The patient was intra orally intubated and the patient underwent excision of the tumor taking 1 cm all around the tumor. The defect was reconstructed by RFFF. Post-operatively the patient was kept in the intensive care unit (ICU) for 4 days for his vital and flap monitoring. Figure 1 is the pre-operative picture of the patient, Figure 2 is intra-operative marking taking 1 cm all around the tumor, Figure 3 is intra-operative picture after excision of the tumor, and Figure 4 is post-operative picture of the patient.



Figure 1: Pre-operative picture of the patient.

DISCUSSION

The main goal of the BCC treatment is to eradicate the tumor with an aesthetically and functionally good outcome. Surgical resection is the most common method of treatment for skin cancer of the head and

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Figure 2: Intra-operative marking taking 1 cm all around the tumor.



Figure 3: Intra-operative picture after excision of the tumor.



Figure 4: Post-operative picture of the patient.

neck region. The most important principle of treatment is complete tumor excision. Adequate margins of resection are necessary to achieve clear margins. For BCC including squamous cell carcinoma, 4-mm margins are sufficient for lesions smaller than 2 cm in

diameter. However, if the tumor is 2 cm or greater, is in high-risk areas, is invading fat, 6-mm margins of excision are required [7]. In addition, care must be taken to take appropriate deep margins. In the literature, the 3 mm peripheral surgical margin is adequate for the clearance of 85% of small and well-defined BCCs, and the 4-5 mm margin will raise this to 95% [8]. Reconstruction of the defect depends on the size of the defect and the nature of the tumor excised. For smaller lesions, primary closure and healing by secondary intention are appropriate options. Intermediate defects may need a skin graft or local advancement of a rotational flap for adequate closure. For large defects, regional/distant pedicled flaps or free flaps are needed. It has been shown that the recurrence rate for primary BCCs after surgical excision varies between 5% and 14% and lesions in the head and neck region are at more risk for recurrence when compared to lesions in the trunk and extremities [1]. Compromise margin is reported to be one of the risk factors for high recurrence and recurrence rates in incompletely excised patients are reported to be at the rate of 26-67% [9].



Figure 5: Post-operative picture of the patient reconstructed by ALTF.

As the survival rates of free-flaps have become more than 90% in most centre, the primary concern is

the function and appearance of the patient following reconstruction [10,11]. Reconstruction of facial region presents a unit challenge in terms of aesthetic and functional outcomes for the patient especially when the tumor is locally advanced. The advantage of ALTF is that a large skin paddle can be harvested compared to RFFF with longer pedicle length than RFFF [12]. But ALTF require longer time to harvest around three hours as compare to RFFF around one hour and also ALTF is a considerably thicker flap than RFFF [13]. Anterolateral thigh flap dissection require intramuscular dissection in majority of the cases for musculocutaneous perforator which is technically difficult. On the other hand, RFFF is a flexible and technically easier flap to harvest. As RFFF is thin and pliable it gives a better cosmesis as seen in Figure 4. On the other hand, as ALTF is bulky it has a sinking effect compromising the cosmesis of the patient as seen in Figure 5. The surgery for this patient was performed four years ago.

CONCLUSION

Adequate surgical margins are important to achieve lower recurrence rates, and RFFF is the preferred flap for huge defect reconstruction following the excision of BCC of the face especially when the defect involve the mid region of the face. Future comparative study involving RFFF versus ALTF in turn of cosmetic and functional outcomes is required.

STATEMENTS AND DECLARATIONS

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