



Infero-Auricular Folded Flap for The Reconstruction of a Full-Thickness Defect of The Earlobe

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Abstract

Basal cell carcinoma is the most common type of malignant cutaneous tumor. Chronic exposure to sunlight is the main factor in its etiology. The main treatment goals in the management of BCC are total removal of the lesion, preservation of healthy tissue, preservation of function and obtaining aesthetically acceptable results. Posteroauricular/preauricular advancement flaps, biloble flaps, helical rim advancement flaps and revolving door flaps are among the flaps used in ear reconstruction. In this study, we present a case of the reconstruction of a full-thickness ear lobe defect with a postro-inferiorly based flap. The patient did not develop any recurrence within the 3 years follow-up period. .

Introduction

Basal cell carcinoma (BCC) is the most common type of malignant cutaneous tumors. Chronic exposure to sunlight is the main factor in its etiology. It often occurs in areas where sun exposure is intense, such as the face and neck [1-2]. It is most common in light-skinned people. In the United States, the lifetime risk for white men is between 33-39%, and between 23-28% for white women. It is frequently seen over the age of 50, and is frequently seen in the head and neck, and more rarely in the arms and forearms [3]. Although BCC is characterized by slow growth and rare metastases, excision with insufficient margins or delayed diagnosis results in the sacrifice of more healthy tissues [4].

The main treatment goals in the management of BCC can be listed as total removal of the lesion, preservation of healthy tissue, preservation of function, absence of recurrence and obtaining aesthetically acceptable results [5]. In terms of clinical behavior, BCC rarely causes distant metastasis. In the selection of the treatment to be applied to the patients of BCC; the age of the patient, the number and size of the lesions, the morphological appearance, the histopathological type of the tumor, the tumor being primary or recurrent and its anatomical location should be taken into consideration. Treatment options in

the management of BCC can be basically evaluated under two headings as surgical and non-surgical options [6]. Cryotherapy is among the non-surgical methods [7]. Surgical excision is by far the most common method in the treatment of BCC. Standard excision is an effective treatment option in all primary BCC cases with a 5-year recurrence rate of 2-10%. The generally accepted safe surgical margin is 3-5 mm. In cases with recurrent and infiltrative BCC greater than 10 mm, excision with a safe surgical margin of at least 5 mm should be planned [8].

Up to our knowledge, no study in the literature has described a postero-inferiorly based transpositional flap to reconstruct the earlobe. In this study, we aimed to present the reconstruction of a full-thickness ear lobe defect with a postro-inferiorly based flap.

Case report

A 47-years-old male patient applied to our clinic with the complaint of a lesion that appeared and enlarged in the ear lobe over a 2 years period. The patient had also the complaints of occasionally bleeding accompanied by itching. The patient had no history of previous of infection, trauma or surgery in this region. On the physical examination, it was observed that there was a well-circumscribed, pigmented lesion on the left ear lobe. The lesion was approximately 0.3x0.5 cm in size, ulcerated in the middle

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Figure 1. The previously used preauricular transpositional flap with the design of the postero-inferiorly based flap.



Figure 2. The postero-inferiorly based flap after it is sutured to the anterior and posterior defects.



Figure 3. Postoperative 3th year of the patient showing minimal scar.

and crusted over. Due the relatively small size the lesion was totally excised with safe surgical margins. The resulting defect was repaired with a transpositional flap designed from the preauricular region (Figure 1). The pathology result revealed a BCC with positive base surgical margin and close side margins. As so, a re-excision operation was planned. The old lesion area with the overlying flap was totally excised in a full-thickness fashion. To reconstruct the resulting defect a 4x2 cm postero-inferiorly based fasciocutaneous flap was designed (Figure 1). After calculating the area required to close the anterior defect, the flap was folded on itself and an area of 4 mm in width was deepithelized. The remain flap area was used to close the posterior defect (Figure 2). The pathology result revealed no signs of residual tumor. No recurrence was detected in the 3-year follow-up period. The patient was offered an operation to cut and separate the pedicle, but the patient refused the operation (Figure 3).

Discussion

Skin cancer is one of the most common cancers in the World. Basal cell carcinoma (BCC) and squamous cell carcinoma (SCC) are the most common non-melanoma skin cancers. The ideal surgical treatment for BCC is total excision, and this must be achieved with safety margins. The currently accepted treatment for basal cell carcinoma is an elliptical excision with a 4-mm surgical margin of clinically normal skin. However, because of cosmetic and functional limitations on the face, a 4-mm surgical margin is often not feasible [8].

In experienced hands, local flaps are the most suitable alternative for repairing the majority of head and neck defects. The most important advantage of these flaps is that they do not cause secondary morbidity by allowing the defect and flap donor area to be closed at the same time. For example, in a previous study, we have demonstrated the use of nasolabial flap for total palate reconstruction [9]. Posteroauricular/preauricular advancement flaps, bilobed flaps, helical rim advancement flaps and revolving door flaps are among the flaps used in ear reconstruction [10].

Seidman et al. described a single stage technique to reconstruct the earlobe with a U-shaped flap from below the auricle. The flap is drawn inferiorly to the lower part of the earlobe and then raised and tubularized over itself creating a medial surface to the reconstructed earlobe. The postauricular closure is done in a V-Y fashion to close the donor area beneath the auricle (12). The main disadvantage of this technique is that multiple scars will appear on the anterior and posterior of the earlobe. In our technique only a single scar line is formed and this line is hidden at the inferior auricular region behind the mandible. Another advantage of our technique is that one flap with one incision is sufficient to reconstruct a full-thickness defect of the earlobe. However, care must be taken when deepithelizing the flap in order not to damage the vascular supply.

Conclusion

Basal cell carcinoma is one of the most encountered cancers in the face region. Reconstruction choices may be limited when it is located at the earlobe. A transpositional flap designed from the postero-inferior region offers a reliable method to reconstruct a full-thickness defect on the earlobe. The technical ease and the minimal scar are the main advantages of this flap.

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