

A Tunneled Posterior Auricular Transposition Flap for Ear Concha Defect

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Abstract:

Surgical treatment of ear defects requires the awareness of reconstructive concepts. Acceptable cosmetic appearance is not always achievable because of its complex anatomy, a limited availability of soft tissue around defects and a great number of aesthetic units. Retro-auricular zone is frequently applied as a flap donor area because of its rich vascularization. While repairing of the ear defects, three-dimensional structure and different plane of the ear on the mastoid surface should be taken into consideration very carefully. In this case we present a case of basal cell carcinoma on the concha of the ear. The resulting defect was repaired with a tunneled posterior auricular transposition flap which provided a good aesthetic result.

keywords: basal cell carcinoma; concha; ear; transposition flap; tunnel

Introduction

An ear region entails a risk for nonmelanoma skin cancers in terms of the recurrence rate and aggressive progress [1]. Surgical treatment of ear defects requires the awareness of reconstructive concepts. Acceptable cosmetic appearance is not always achievable because of its complex anatomy, a limited availability of soft tissue around defects and a great number of aesthetic units. Defect related parameters such as size and depth are the main factors in the choice of reconstructive option in this region. The options of skin graft, local flaps, island flaps, distant flaps etc. are frequently considered as a treatment method of ear defects.

Retroauricular zone is frequently applied as a flap donor area because of its rich vascularization [2]. While repairing of the ear defects, three-dimensional structure and different plane of the ear on the mastoid surface should be taken into consideration very carefully. Thus, tunneled flaps are much more preferable in this topography than the bridging flaps which require two sessions of surgeries.

In this case report, we demonstrated the usage of a tunneled posterior auricular transposition flap for coverage of the defect including conchal cartilage successfully.

Case Report

A 68-years old male patient applied to our department with the lesion in the inner side of his ear accompanying with intermittent bleeding attacks from its surface. The patient had a history of skin cancer removal surgery several times and he had a diagnosis of basal cell carcinoma from the previous pathology reports. While planning the surgery the underlying cartilage invasion by tumor was also took into consideration because of the higher risk localization. The patient underwent the operation under local anesthesia and 0,2 cm surgical margin was planned before the resection. Tumor was excised including underlying conchal cartilage remaining the posterior wall intact. A superior pedicled transposition flap along the posterior fold of the ear was designated. After flap harvesting, vertical cut was done in the posterior cartilage where the flap planned to be passed through. Flap was reached to the defect after passing through the tunnel and the area which was planned to be de-epithelialized was marked. After de-epithelialization flap adaptation to defect area was completed (Figure 1). Flap donor area was closed primarily in a tension-free manner (Figure 2).

The pathology result was reported as basal cell carcinoma with the tumor free surgical margins and it was similar to the previous reports of the patients. No complication was encountered in the follow-ups.



Figure 1: Early postoperative view after the inset of the flap.

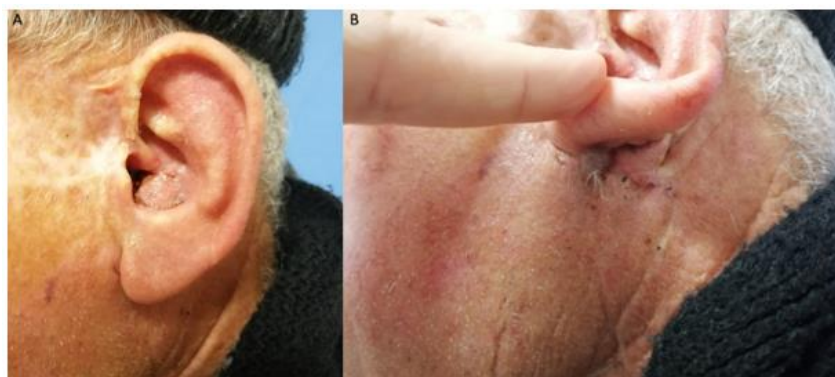


Figure 2: A: late postoperative view. B: Posterior donor area with minimal scar.

Discussion

Nonmelanoma skin cancers of concha increase morbidity because of the higher rate of recurrence and cartilaginous infiltration by tumor [3,4]. Because the skin cancers presented in this area should be evaluated in terms of cartilage invasion MOHS surgery is recommended [1]. MOHS surgery and intraoperative frozen section were not provided in our hospital, thus we performed enbloc resection of tumor including underlying cartilage due to the possible infiltration.

Skin grafts are also considered as a reconstructive option in concha tumors if the cartilage is not removed. In their randomized controlled study, Dessy et al. demonstrated the favorable outcomes of retroauricular flaps in the wide concha defects comparing to skin grafts [5]. It was reported that preference of skin grafts can increase the operating time, slow down the healing period causing centripetal contraction in surgical area, and result in unfavorable aesthetic outcomes. In our case, we preferred the flap reconstruction to prevent the contour deformity in a wound bed without cartilage.

Though there are several flap options for the partial reconstruction of ear, the concept including tunnelization of retroauricular flaps to cover cartilaginous framework has been frequently performed by surgeons. In 1972, retroauricular island flap for concha defects was firstly defined as a 'revolving door flap' by Masson [6]. The retroauricular island flaps are usually based on a adipofascial pedicle and do not require the second session. We prepared a transposition flap in our case and the only part which remained under tunnel was de-epithelialized. This kind of planning decreases the venous outflow problem which is common in island flaps.

The similar transposition flap was previously reported by the authors for the earlobe reconstruction [7]. The disadvantage of the flap mentioned in the case was a bulge in pivot point however it was camouflaged in the posterior fold of ear.

Conclusion

In conclusion, tunneled posterior auricular transposition flaps may be alternative to retroauricular flaps in the selected cases with concha defect. The future investigations comparing the rate of complication and aesthetic outcomes of the flaps will contribute to the literature positively.

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