

Reconstruction of Conchal Defect with Hinge Flap

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Abstract

Ear pinna defects commonly occur following trauma, ear piercing, iatrogenic or infective or malignancy. Standard reconstructions of such defects are described but not applicable to every defect of which Conchal defects is rarely described with no standard technique. This article describes a simple technique for reconstruction of full thickness defects of the concha in bilayer with hinge flap taken from the posterior surface of the ear and full thickness skin graft to cover the resultant raw area.

Keywords: Conchal Defect; Ear Reconstruction; Hinge Flap; Full Thickness Graft.

Introduction

The auricle is an aesthetic sculpture of complex convexities and concavities that are smooth and uninterrupted. The elastic cartilage framework of the auricle is pliable yet structurally strong and resilient to trauma. The soft tissue envelope of the ear is fibro fatty and loose over the lobule and the margin of the helix but thin and fixed over the remaining cartilage framework [1].

The auricular concha refers to the central portion

of the external ear adjacent to external auditory canal composed of thin skin, subcutaneous tissue, and concave shaped cartilage. Conchal defects occur due to ear piercing, iatrogenic, infective or malignant causes. Healing by secondary intention, Skin graft have been described for defect with intact perichondrium whereas local flap are used for full thickness defects taken from retroauricular region. Defects of the central portion of the ear are less common and only a few surgical techniques have been described [2,3,4].

We describe a technique used to reconstruct full thickness defects of the cavum conchae using post auricular dermal flap to cover the defect anteriorly and full thickness skin graft to cover the donor site and posterior layer achieving excellent reconstructive outcome.

Methods and Material

A 22-year-old male presented with a history of defect in concha of the left ear, which he sustained due to religious ritual in childhood and wants it corrected for aesthetic reasons. On examination, there was an elliptical full-thickness defect in the concha measuring 7 mm × 5 mm. Circumferential scarring was noted around the defect. Skin surrounding the defect, on both sides of the ear, was normal and unscarred. (Fig. 1).

Operative Technique

The patient was operated under general anesthesia with a 2.5x loupe magnification. Inferiorly based dermal flap was marked 8mmx

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6mm on the posterior aspect of ear as shown in Figure 2. Edges of the defect were freshened by 1mm over all sides except superiorly. An incision was made and flap elevated with caution to retain perichondrium. The flap elevated with superior margin of defect as hinge. The flap was turned 180 degrees and brought anteriorly through the defect to cover the anterior surface skin defect [Figure 3]. The resulting raw area on the posterior conchal skin, along with the original defect, measured 16 mm × 8 mm. The donor defect and posterior aspect of hinge flap was covered with full thickness skin graft taken from opposite postauricular region [Figure 4] Bolster dressing was done.

The anterior hinge flap and posterior full thickness skin graft survived completely. (Figure 5,6).



Fig 1: Full thickness conchal defect



Fig 2: Marking of flap



Fig 3: Flap immediate post operative



Fig 4: Full thickness graft



Fig 5: One month Post operative (anterior)



Fig 6: One month post operative (posterior)

Discussion

Auricular concha forms the central portion of Ear pinna, though not contributing much to structural integrity forms important aesthetic feature of the individual. Defect of concha is commonly due to ear piercing, iatrogenic and malignant cause [5, 6,7]. Surgical closure of any such conchal defect needs tension-free repair with preservation of the post auricular sulcus which is achieved by local flaps [8]. Primary closure of defect is difficult due to unyielding nature of the skin and skin graft is associated with complications like delayed healing, pigmentation and centripetal contraction [9].

The ideal choice for covering the anterior concha is skin from the post auricular area or from the posterior surface of the ear due to less donor site morbidity, color and texture match and primary closure of donor site. Masson described the conventional postauricular "revolving-door" island flap for ear reconstruction in 1972 since then modifications have been described. T Masson described the conventional postauricular "revolving-door" island flap for ear reconstruction in 1972 [10].

The hinge flap technique described in our study is a simple and easy procedure in which the flap is harvested from the margin of the defect. The flap can be harvested from any margin depending on scarring. The margin acts as a hinge and the posterior ear skin is turned anteriorly through the defect without de-epithelization and sutured to the other margins. Flap cover can be taken with or without perichondrium, in later the exposed cartilage has to be covered with another local flap. In our case we retained the perichondrium and covered the raw

area with a full thickness graft as posterior layer for it was small raw area and the natural convexity of cavum concha would prevent contraction of graft.

Conclusion

The conchal defect can be corrected by various methods depending on its size and location. This article describes a simple technique for covering small full-thickness conchal defect in two layers, anterior layer by hinge flap and posterior layer by full thickness graft.

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