

Case Report

Helical reconstruction in a post human bite defect

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ABSTRACT

A case of a post traumatic partial defect of the helix of ear and its reconstruction by using a post auricular bipediced tube flap, in stages is reported.

KEY WORDS

Partial traumatic defect, helix, staged correction, tube flap, post auricular

INTRODUCTION

Auricular injuries are common due to the unique protruding position of the ear. Reconstruction of post traumatic partial defects is a difficult condition owing to the structure of the ear comprising of a delicate cartilage between thin cutaneous tissues. Different operative techniques can be used for its repair. The extent of injury and the defect is the deciding factor for surgery. There may be complete or partial loss of the auricle. The partial loss may be of upper, middle or lower auricle transversely and may include loss of cartilage. Vertical loss may be of helix only or includes antihelical structures. Direct closure may be attempted when the loss is small i.e., less than 1-2 cm but larger defects require planned repair and reconstruction.^[1,2]

Helical defects can be corrected by advancement of auricular skin and cartilage, composite grafts, free skin graft or post auricular skin flaps.^[3] Gillies, the father of modern plastic surgery, in 1917, introduced tubed flaps.^[4] It is an excellent method for reconstruction of partial ear defects.

CASE HISTORY

A 25 year old female was taken up for reconstruction of her left sided helical defect. The mode of injury was human bite by her mentally unstable husband nine months back. There was no history of any operative intervention after the injury. The loss of tissue included the lower two third of the outer third of helix with loss of cartilage. The size of the defect was 5 x 1.5 cm. The injury site had minimum scarring and no inflammation at the time of examination. Post auricular region was healthy [Figure 1 pre-op].

A post auricular bipediced flap 7 cm long was planned which was tubed in the first stage under GA. The defect created in the post auricular region was covered with a split skin graft.

Subsequent detachment of the upper part of the tube, after three weeks, with inseting of the flap at the upper end of the helical defect was done when the tube was also longitudinally opened and sutured to the edges of the defect [Figure 2] and then after two more weeks, detachment of the lower end of the tube with inseting



Figure 1: Pre op helical defect



Figure 2: Inset of flap at upper end of defect

of the flap at the lower end of the helical defect was done. No cartilage graft was used and the final result produced was excellent [Figure 3].

DISCUSSION

In spite of the advent of single stage repair for auricular defects, this old technique of multi-staged reconstruction procedure can still be the preferred method, in cases of marginal defects which are large (>2.5 cm).^[5,6]

A correct estimation of the helical defect and the flap length has to be done. The length of the tube should be one cm more than the defect to allow for shrinkage of the tube.^[7,8] The flap is raised at the subcutaneous level and a cartilage graft can be inserted if required. Steffanoff has described the procedure in detail for ear



Figure 3: Final picture 6 months post op

reconstruction.^[5] Converse and Brent have used it extensively.^[1]

The advantages of this flap are that the scar is concealed behind the ear; there is a better color match of retro-auricular skin and large defects can be covered along with cartilage usage.^[9] The disadvantages are multiple stage operations; subsequent drooping of the tube may be present if cartilage is not used (it was not present in this case); unpredictable vascularity and limited length.

In spite of the disadvantages, on balance, it is an excellent method for use by a reconstructive surgeon with predictable results.

REFERENCES

1. Converse JM, Brent B. Acquired deformities of the auricle in: Converse JM, editor, *Reconstructive Plastic Surgery*, 2nd ed. WB Saunders: Philadelphia; 1977. p. 1724-32.
2. Orticochea M. Reconstruction of partial loss of the auricle. *Plast Reconstr Surg* 1970;46:403-5.
3. Larabee WF, Sherris DA. *Principles of facial reconstruction*. Lippincott, Raven: Philadelphia; 1995.
4. Gillies H. *Plastic Surgery of the face*. Oxford University Press: London; 1920.
5. Steffanoff DN. Auricular – mastoid tube pedicle for otoplasty. *Plast Recon Surg* 1948;3:352-6.
6. Ellabban MG, Maemoun I. Maamoun and Moutaga Elsharkour. The bipedicle post auricular tube flap for reconstruction of partial ear defects. *Br J Plast Surg* 2003;56:593-8.
7. Cosman B, Crikelauf GF. The composed tube pedicle in ear reconstruction. *Plast Recon Surg* 1966;37:517-22.
8. Lewin ML. Formation of the helix with post-auricular flap. *Plast Recon Surg* 1950;5:432.
9. Millard DR. The chondro-cutaneous flap in partial auricular repair. *Plast Recon Surg* 1966;27:523.