A combined flap technique for earlobe reconstruction in one stage

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SUMMARY. Many of the techniques available for earlobe reconstruction require that the rest of the ear is in continuity with retroauricular skin and they usually need two stages; in some cases a graft is also required. We present a method to create an earlobe in one stage and without grafts, illustrated by one case report. The technique is a combination of the flap techniques of Davis and Zenteno Alanis, using an extended retroauricular flap together with an anterior ear flap.

Treatment of earlobe defects usually includes local flaps. Many techniques require that the rest of the ear is in continuity with retroauricular skin and, in this way, different flaps can be elevated from the mastoid region. With these techniques, the earlobe is usually reconstructed in two stages: first, the inferior part of the ear remnant is sutured to the mastoid skin and, at a second stage, the flap is elevated. Some of the local flaps also require a skin graft to give posterior earlobe covering.

We present a simple method for the reconstruction of the lobe in one stage, without grafts and, at the same time, offering a pleasant appearance.

Case report

A 32-year-old black female had the lower third of her right external ear bitten off by another woman during a fight. Although we were aware of the low survival rate following replantation,1 we sutured the earlobe back in place within 2 hours and following partial fat removal. As we foresaw, we had no success and all the tissue became necrotic. One month later, when all the necrotic tissues had been removed the ear was reconstructed under local anaesthesia. At that time, we were presented with a partially amputated ear with its inferior margin free and not in continuity with the postauricular skin (Fig. 1). The tissue loss included just a little more than the lobe, although the cartilage was undamaged.

Operative technique

We have not found many reports in the last few years on earlobe reconstruction. After reviewing the most important techniques,2-4 we found some of them fairly interesting although none was completely suitable for our case.

As Converse and Brent show,4,7 Davis described an imaginative technique: he used a flap based on the lower auricular margin and extended it upwards along the retroauricular and mastoid region. Another flap was raised from the anterior surface of the helix and antihelix and transposed inferiorly to become the posterior surface of the earlobe. In our case, this last flap was not sufficient because the loss included a little more than the earlobe. Therefore, we used the principle of Zenteno Alanis' technique9 and to the main retroauricular flap we added an inferior extension, which was turned up behind the main flap (Figs 2, 3). In this way, we obtained complete posterior skin cover without any skin grafts (Figs 4, 5). As Brent9 says, it is very useful to make the flap large in order to compensate for tissue shrinkage. In summary, our technique is a combination of those of Davis and Zenteno Alanis (Fig. 6). One flap, which is based on a medial pedicle, is raised from the postauricular skin (x) and a second one from the anterior surface of the helix and antihelix (y). Posterior covering of the earlobe is supplied by this last little flap and by the lower folded prolongation of the main one (z). The upper portion of the retroauricular flap covers the cartilage, which is left exposed after elevation of the lining flap (y), and the mastoid donor defect is closed by direct suture.

As the earlobe is a site where keloids frequently develop, we advised the patient to use a light pressure-spring earring.11,12

Figure 1—Defect of right ear.
Discussion

Cosmetic aspects are the main problem for patients with congenital or acquired defects of the external ear. Extensive defects that cannot be solved by mere suturing require plastic surgery, which is very difficult to perform due to the anatomy of the ear and to the fact that the ears are situated in a very exposed position. The earlobe is a portion of the ear which is difficult to reconstruct, basically because of its thickness and its fat content. The use of skin grafts for the posterior surface of the lobe makes the lobe thinner and, in our opinion, gives it a poor appearance. We think that our combined method is another one to be borne in mind for earlobe reconstruction, especially when the edge of the defect is hanging free and in cases where the loss also includes a little more tissue than the lobe. The advantages are that the defect can be repaired in only one stage and with no skin grafting.

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Figure 6—Design of flaps. (A, B, C) Anterior view. (A', B', C') Posterior view. (A, A') Auriculo-mastoid (x) and anterior (y) flaps; note the lower portion of the main flap (z). (B, B') The two flaps crossed after their elevation. (C, C') The flaps are sutured in place and the donor defect is closed.

References


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