Available online at www.sciencedirect.com

ScienceDirect

British Journal of Oral and Maxillofacial Surgery 57 (2019) 378–380

BRITISH Journal of Oral and Maxillofacial Surgery
www.bjoms.com

Technical note

Reconstruction of a marginal defect of the ear: "another feather in the cap"

A. Sayan *, T.E. Seah, V. Ilankovan

Poole Hospital NHS Foundation Trust

Accepted 28 February 2019
Available online 28 March 2019

Keywords: Ear; reconstruction; cutaneous malignancies; helical advancement

The ear can be involved in trauma, cutaneous malignancy, and congenital deformities. Up to half these affect the margin, and involve the helix, antihelix, and scapha.[1]

Several reconstructive and modified techniques have been reported, and a one-stage procedure is preferable. The complications described are butterfly deformity, cubing, and pinched appearances.[2]

We report a technique that is suitable to cover small and large defects that involve the helix, antihelix, and scapha.

The vascular supply of the auricle is from branches of the superficial temporal artery (SAA) and posterior auricular artery (PAA). There is a helical arterial arcade connecting the SAA and PAA, which contributes to the success of the technique.[3]

Surgical technique

Affected tissue is excised with adequate margins, and the composite defect created may include any or all three auricular components.

The incision is made through skin and cartilage, sparing the posterior skin. The superior and inferior arms can include helix only, or all three, with a backcut (Fig.1). The backcut is made along the superior end to cross the triangular fossa and extend medially to the antitragus and along the inferior end. We use blunt dissection between the posterior skin and the

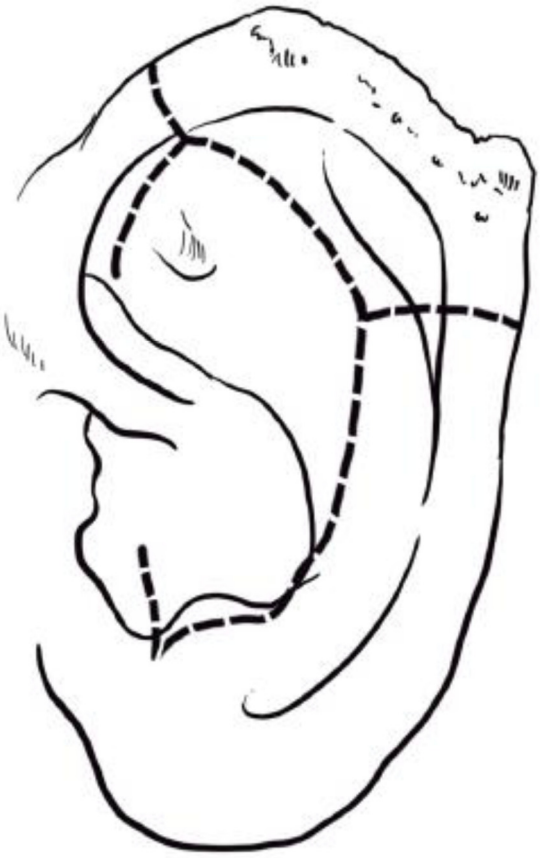

Fig. 1. Excision of the composite defect and reconstruction.

* Corresponding author. Fax: +44 1202 448410.
E-mail address: anna.sayan@poole.nhs.uk (A. Sayan).

https://doi.org/10.1016/j.bjoms.2019.02.011

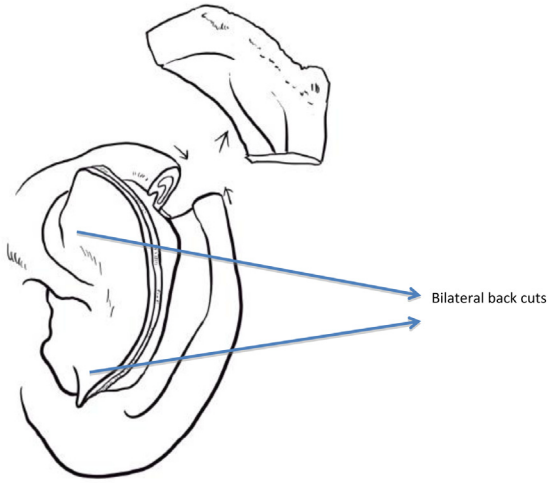

Fig. 2. Blunt dissection of cartilage from the posterior skin, and advancement of the rim.

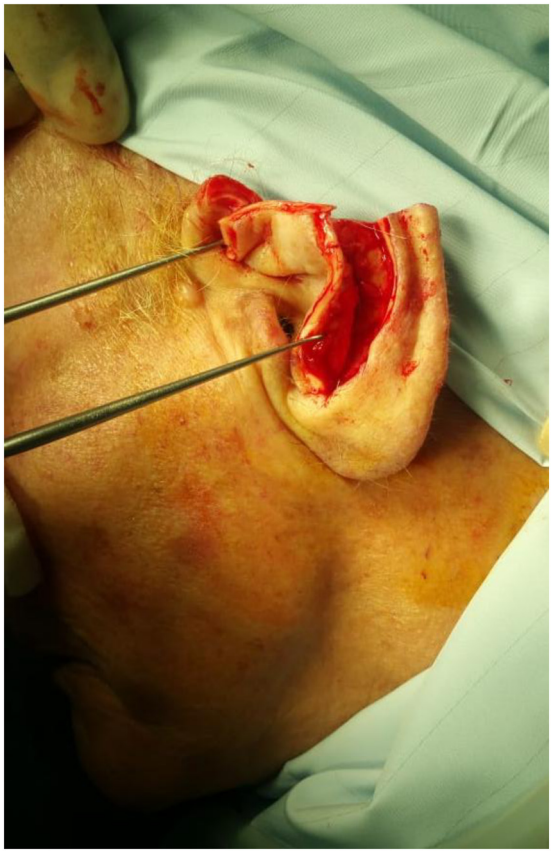

Fig. 3. Wide local excision of a squamous cell carcinoma of the superior helix with the cartilage mobilised.

cartilage, so the vascularity of the ear lobe is left unimpeded (Figs. 2 and 3).

After adequate mobilisation, the two limbs are brought together by passing a round-bodied suture through a cartilage, followed by a polypropylene suture to the skin (Fig. 4). A pressure dressing is placed for 48 hours.

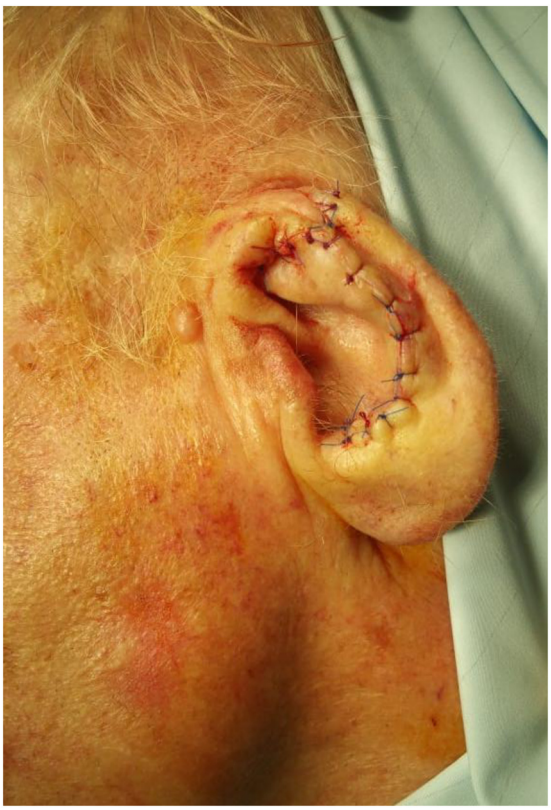

Fig. 4. Bilateral helical advancement flap with bilateral backcuts and repair with polypropylene sutures.

Discussion

Antia and Buch described the rim advancement technique based on a posterior skin flap in 1967.[4] Subsequently, multiple modifications have been described with both benefits and pitfalls.[2,5] However, they described only the helical defect.[4] Fata described a technique to excise the conchal borders but this may compromise the conchal blood supply.[5] The earlobe based advancement flap that was described by Zilinsky et al deforms the ear lobe.[3] The modified advancement flap suggested by Low[6] includes a triangular cutaneous extension flap, but this extends the surgical approach outside the auricle with dissection of the anterior skin from the perichondrium. Antia and Buch's approach also extends to involve the anterior helical skin.[4]

Our technique maintains good vascularity to both anterior and posterior surfaces, and can be used in both small and large defects. It can be used not only in defects of the helix but also in those that extend to involve the antihelix or the scapha, or both, without affecting the auricular skin or the conchal aesthetics. The scars along the triangular fossa and anterior to the tragus are completely hidden. The ear projection from the mastoid is not altered, which results in a reliable reconstruction with a good aesthetic outcome.

Conflict of interest

We have no conflicts of interest.

Ethics statement/confirmation of patient's permission

Ethical approval not required. The patient's permission was not required.

References

1. Leferink VJ, Nicolai JP. Malignant tumours of the external ear. *Ann Plast Surg* 1988;**21**:550–4.
2. Taylor JM, Rajan R, Dickson JK, et al. Maintaining ear aesthetics in helical rim reconstruction. *Ann Plast Surg* 2014;**72**:318–22.
3. Zilinsky I, Cotofana S, Hammer N, et al. The arterial blood supply of the helical rim and the earlobe-based advancement flap (ELBAF): a new strategy for reconstructions of helical rim defects. *J Plast Reconstr Aesthet Surg* 2015;**68**:56–62.
4. Antia NH, Buch VI. Chondrocutaneous advancement flap for the marginal defect of the ear. *Plast Recontr Surg* 1967;**39**, 427-7.
5. Fata JJ. Composite chondrocutaneous advancement flap: a technique for the reconstruction of marginal defects of the ear. *Plast Reconstr Surg* 1997;**99**:1172–5.
6. Low DW. Modified chondrocutaneous advancement flap for ear reconstruction. *Plast Reoncostr Surg* 1998;**102**:174–7.