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HOW I DO IT HEAD AND NECK

How I do dual flap reconstruction for middle third ear defects integrating Antia-Buch and a flip-flop flap

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Introduction

Large middle third auricular defects can present a complex challenge for reconstruction. Following skin cancer excision, an external ear deformity can have a significant psychological and functional impact. Poor cosmetic outcomes can lead to psychological distress, while functional issues, such as difficulty wearing glasses and hearing aids, can affect daily life.[1,2] In older patients, auricular reconstruction is especially challenging due to the poorer outcomes associated with cartilage grafts and alloplastic materials. For many patients, the benefits of a straightforward, single-stage technique that preserves aesthetic units removes the complexity of this reconstruction. The authors achieved a successful reconstruction under local anaesthesia and sedation by combining a postauricular subcutaneous pedicle island flap (flip-flop flap) with a modified Antia-Buch flap to provide both a functional and aesthetic outcome.[3–5]

Operative technique

Excision of the lesion required the removal of the underlying cartilage of the helix, antihelix and antitragus, along with partial excision of the cartilage from the concha bowl and triangular fossa (**Figure 1**). The postauricular skin was preserved for the flip-flop flap, an island flap based on the postauricular artery. A modified Antia-Buch technique was performed: the volar incisions are made along the antihelix rather than the helical rim, as is usual. This allows for the superior and inferior chondrocutaneous helical and antihelical advancement flaps to reconstruct the antihelix and helix. A Burow's triangle was created within the earlobe for contour adjustment, while minimal 4-0 Monocryl (Ethicon Inc) sutures were used to approximate the helix and the closure was completed with 5-0 Vicryl (Ethicon Inc) sutures.

Discussion

Reconstructing the middle third of the ear presents the challenge of ensuring durability while correcting the ear's helical contour. The Antia-Buch flap, first described in 1967, has been widely adopted for single-stage reconstruction of helical defects.[3] This modification, using the incision along the antihelix fold in order to reconstruct longer width defects, has been used relatively frequently by the senior author with good effect. The flip-flop flap, a postauricular island flap, was first

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Fig 1. (A) The lesion was excised with a 5 mm margin taking the underlying cartilage; (B) the margin abutting the external acoustic meatus; (C) the postauricular skin incised for the flip-flop flap; (D) modified Antia-Buch flap with incision along the antihelix fold; (E) the flip-flop flap secured to the external acoustic meatus; (F) the Antia-Buch flap advanced and closed; (G) result at 3.5 weeks postoperative; (H) result at two months postoperative

described by Masson in 1972 for reconstructing concha-helix defects.[5] Our approach combines these time-honoured techniques to reconstruct large auricular defects effectively. This is the first case to describe the combined use of these techniques for larger defects.

The main drawback of this reconstruction is the potential for aesthetic asymmetry compared to the contralateral ear and cupping. However, differences in ear length of up to 15 per cent between auricles are often unnoticeable. While a slight reduction in auricular length was observed postoperatively, the preservation of all aesthetic units contributed to an overall satisfactory cosmetic outcome. Most importantly for our patient, there was a positive functional outcome: the ability to wear glasses within one week postoperatively. Additionally, the contour of the flip-flop flap allows for hearing aids to be easily worn. This combined reconstructive approach can be considered for the middle third helix, as a simplified single stage reconstruction.

Conclusion

Combining a postauricular subcutaneous pedicle island flap (flip-flop flap) with a modified Antia-Buch flap provided excellent functional and aesthetic outcomes.

Patient consent

Patients/guardians have given informed consent to the publication of images and/or data.

Conflict of interest

The authors have no conflicts of interest to disclose.

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