

Reconstruction of the Tragus Using a Pedicled Chondrocutaneous Superficial Temporal Artery Perforator Flap

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We present an interesting and novel technique to reconstruct the tragus of the ear after oncological resection, using a pedicled chondrocutaneous superficial temporal artery perforator (STAP) flap.

A 77-year old lady was referred to our clinic after shave biopsy of a squamous cell carcinoma of the right tragus. We advised a wider excision and reconstruction, utilizing like-for-like tissue of the helical root on the same ear.

Intraoperatively, wider excision of the squamous cell carcinoma was performed with a 6-mm resection margin and the posterior branch of the superficial temporal artery (STA) carefully preserved. Corresponding chondrocutaneous tissue of the helical root was remarked (►Fig. 1 a, b).

Using the microscope and hand-held Doppler, the perforating artery of the posterior branch of STA and its single corresponding venae-comitantes running into the helical

root tissue was identified and preserved, and the helical root tissue was incised. Superiorly, the posterior branch STA artery and vein were ligated using microligation clips (►Fig. 2 a, b).

The chondrocutaneous flap was transposed on the deep temporal fascia from superior to inferior and into the tragal defect (►Fig. 3 a, b).

The donor site was closed directly, the flap was easily inset into the oncological resection defect, and simple interrupted sutures were used for skin closure.

Free chondrocutaneous STAP flaps have been well described^{1,2} for nasal alar reconstruction, utilizing the posterior branch of the STA. However, the use of a pedicled chondrocutaneous STAP flap for reconstruction of auricular defects has not previously been described and represents an excellent reconstructive option for defects around the ear.



Fig. 1 Resection defect and planned adjacent superficial temporal artery perforator (STAP) flap: (a) Intraoperative image of resection defect and adjacent STAP flap planned for reconstruction; (b) Schematic representation of the resection defect and blood supply to the adjacent STAP flap.

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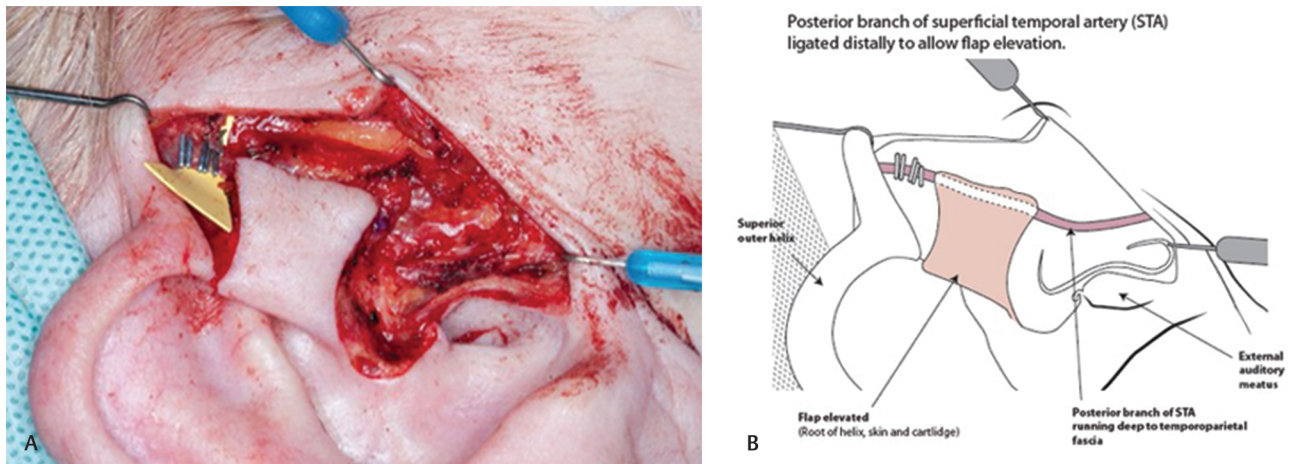


Fig. 2 “Islanding” of superficial temporal artery perforator (STAP) flap on the posterior perforating artery of the superficial temporal artery: (a) Intraoperative photo; (b) Anatomical schematic.

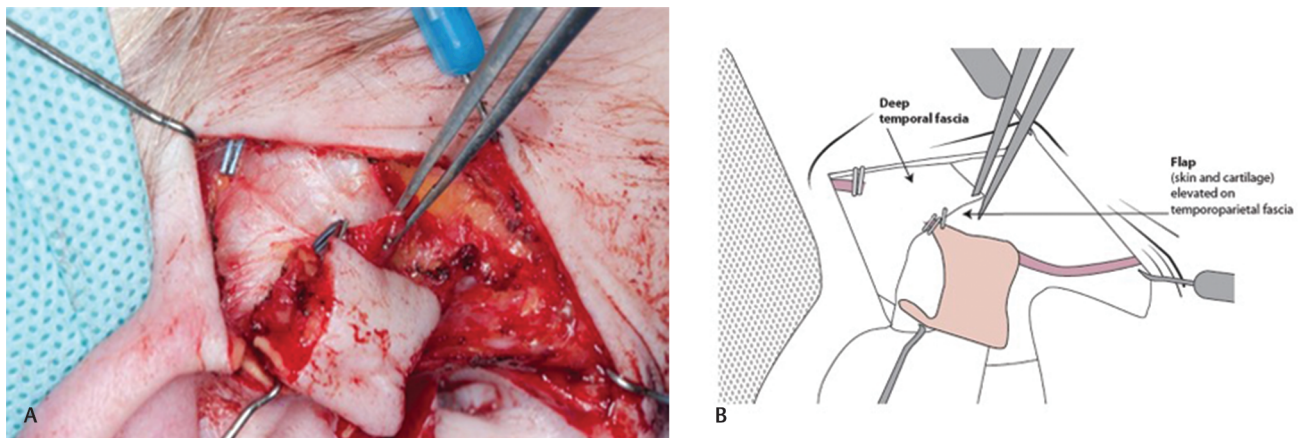


Fig. 3 Superficial temporal artery perforator (STAP) flap elevation: (a) Intraoperative photo; (b) Anatomical schematic.

Scaglioni³ eloquently demonstrates a posterior perforator of the STA to the root of the helix in a cadaveric study, using latex and barium sulfate injection from the external carotid artery and the use of this angiosome to reconstruct anterior ear skin defects with a tunneled pedicled flap. We have developed this angiosome further by using the same perforator to elevate a chondrocutaneous flap of the root of the helix in order to reconstruct the tragus. To the best of our knowledge, this is the first time a pedicled chondrocutaneous flap has been described using this angiosome. Chondrocutaneous tissue at the root of the helix offers the best aesthetic match for the tragus with very minimal donor site deformity. The incisional scars were well placed parallel to the relaxed skin tension lines. Further cases are needed to establish the consistency of the blood supply, incidence of flap survival, and aesthetic result of the donor site and recipient areas.

Author's Contribution

All authors contributed equally to the preparation of this manuscript.

This article conforms to the Declaration of Helsinki.

Conflicts of Interest

The authors declare no financial conflicts of interest.

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