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CORRESPONDENCE AND COMMUNICATIONS

Supratrochlear artery based V-Y flap for partial eyebrow reconstruction

Sir,

The eyebrow is a subunit of the forehead aesthetic unit of the face. Both position and continuity of the eyebrow hairline play key roles in the general harmony of the face.¹ A 59-year old male patient was admitted to our Unit with a nodular skin lesion at the lateral third of the left eyebrow. Surgical excision was then planned. Emergency and course of the left supratrochlear artery were marked by means of a hand-held Doppler. A V-Y skin island flap was planned based on the supratrochlear artery (Figure 1). Tumour was excised with a 0.5 cm margin, creating a defect of 3.1 × 3.8 cm. Flap dissection was performed in the subgaleal plane from lateral to medial. The thin frontalis muscle attachments were divided from the upper margin of the skin island. The supratrochlear artery and vein were intramuscularly dissected and skeletonised in the area where the fibres of the frontalis muscle blend with those of the corrugator supercillii, thus providing a perforator-like flap (Figure 2). The flap, just connected to the glabellar region by the artery and vein, was then advanced to cover the defect; the flap survived entirely. At 14 months follow-

up, neither forehead motility anomalies, nor sensation deficits were observed. The reconstructed eyebrow was slightly shorter than the contralateral; continuity, alignment and position symmetry of the eyebrow were preserved (Figure 3).

Several techniques can be used to reconstruct eyebrow defects ranging from direct closure to more complex procedures.² The V-Y flap with random vascularisation is a reliable surgical solution when dealing with medially or laterally located defects.

The flap is dissected in the subcutaneous plane and then advanced to the defect. Double flaps can be used for central defects. Kim et al³ described a single eyebrow reconstruction, using two small flaps, one supplied by the supraorbital artery and the other based on a branch of the superficial temporal artery, where both arteries were skeletonized. Silapunt et al⁴ discouraged the use of V-Y flaps to cover eyebrow defects larger than 1.5 cm, because of the impossibility to obtain the same eyebrow length postoperatively. This depends mostly on the age of the patient, on the laxity of the skin and on the overall eyebrow length: we feel that is still possible to use single or double 'classic' subcutaneous pedicle V-Y flaps for defects up to 2.0–2.5 cm. For larger defects, the subcutaneous pedicle V-Y flap with random vascularization is not provided of sufficient flap mobility, hence it becomes necessary to perform a more aggressive dissection of the pedicle to allow more flap mobility.

The use of V-Y flaps with axial vascularization and complete skeletonisation of the pedicle to reconstruct



Figure 1 Basal-cell carcinoma of the left eyebrow with 0.5 cm margins. Preoperative markings of the left supra-trochlear artery emergency and V-Y skin Island flap.



Figure 2 Flap harvested after aggressive pedicle skeletonization.



Figure 3 14 months follow-up showing reconstructed left eyebrow.

eyebrow defects has not been described in the literature. We have employed supratrochlear artery based V-Y flaps with complete skeletonisation of the pedicle in other two cases. No postoperative complications were encountered. When defects exceed 1/2 the length of the eyebrow, the remaining of the aesthetic sub-unit is so exiguous that a good aesthetic result cannot be guaranteed, even using non-surgical camouflage procedures of the contralateral eyebrow. In this cases even the modified V-Y flap as described above cannot be used and it is necessary to use more complex procedures such as free composite grafts, micrografts⁵ or hair bearing superficial temporal artery islanded flap.⁶

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A new approach to the antecubital scar contracture: Rhomboid rotation flap

Scar contracture is still one of the most complicated challenges developing after either skin damages or burns. Although splints, pressure therapy, massage, and rehabilitation have been widely used for softening of the scar later the skin injury, in some cases all methods are ineffective to avoid developing a scar contracture which is capable of deforming the appearance of skin surface and restricting joint motions. Several approaches to the correction of contractures have been proposed, including skin grafts, Z-plasty, local flaps, regional flaps, transposition flaps, rotating flaps, axial flaps, perforator flaps, and free flaps, but many of which still have some disadvantages such as necrosis, donor site morbidity, long operation time, and difficult surgical dissection, so there is no ideal technique.^{1–5} In this study, a new method for releasing antecubital contractures was presented.

This study included eleven patients who had antecubital scar contracture treated successfully with a new approach, rhomboid rotation flap. Patients were all children, whose ages varied between 5 to 11 years. They suffered from contracture for at least one year which were localized in the left antecubital area in 7 patients and the right antecubital area in 4 patients. Contractures which were in mild to moderate severity, made extension of the elbow joint significantly difficult, needing surgical release.

We modified the well known shape of the rhomboid which is usually used in releasing burn scars as a form of incision. The rhomboid was lengthened through the axis which placed between both obtuse angles, so it gained more tissue available for rotation in this axis which would be turned to the contracture line when the flap elevation and rotation completed (Figure 1 a, b). After this modification, rhomboid consists of two axis, short and long. Naturally, the longer the axis, the more tissue the flap has.

Preoperatively, a rhomboid was drawn on the antecubital area, long axis of which was placed just over the antecubital skin crease, perpendicular to the contracture line (Figure 2a). Lateral and medial borders of the flap were determined according to the need of flap length which would release the contracture line after rotation. Incision was made firstly into the skin and scar tissue, and then deepened to the antecubital fascia, releasing the