Perfusion monitoring of rotation flaps in the periocular area

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Introduction

After tumor excision in the periocular area, rotation flaps are often used for reconstruction. The aim of this study was to assess the effects on perfusion in glabellar flaps, upper eyelid skin flaps, and lower eyelid full-thickness flaps.

Materials and methods

Perfusion was monitored using laser speckle contrast imaging (LSCI) in patients undergoing three different oculoplastic surgical procedures: (I) seven patients with glabellar flaps, (II) 29 human upper eyelid skin flaps, dissected as part of a blepharoplasty procedure, and (III) nine patients with full-thickness lower eyelid flaps, dissected as part of a Quickert procedure.

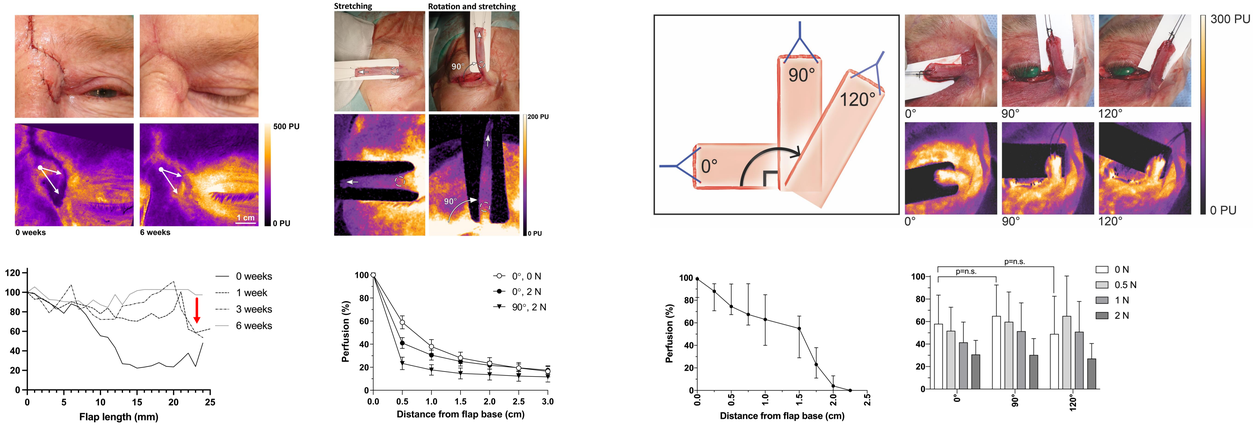
Results

Blood perfusion decreased gradually from the base to the tip of the flap in all three types of flap (I-III). In general, perfusion was fairly well preserved up to 2 cm from the base of the flaps, but was limited more distally. Rotating the flaps by 90 or 120° had little effect on the perfusion (II-III). The glabellar flaps rapidly reperfused, especially in the proximal 20 mm of the flap where perfusion was restored within a week (I).

I. Glabellar flaps

II. Upper eyelid flaps

III. Full-thickness lower eyelid flaps



Conclusions

Perioperative laser speckle contrast imaging provides a useful means of monitoring the perfusion of periocular flaps during surgery. The findings of the present study confirm that the periocular area is well vascularized and forgiving to reconstructive surgical procedures.

Further information

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