SUPPLEMENTARY MATERIALS

Predictive Capability of Near-Infrared Fluorescence Angiography in Submental Perforator Flap Survival

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Supplemental Figure 1 - Perforator Selection and Establishment of ROIs using NIR Fluorescence Angiography: Perforator selection. Shown are the color video (left), NIR fluorescence (middle), and the pseudo-colored (green) merged image (right) recorded prior to flap elevation. The perforator artery (PA) is identified during the initial ICG injection and the flap is outlined on the skin using a marker. Flaps were divided into four groups based on PA location in the flap (central vs. non-central) and dominance (dominant vs. non-dominant). The top row shows the central, dominant perforator PA1 in a perforator flap and the bottom row shows the non-central, non-dominant PA4 in a flap; PAs are indicated by dashed lines in the NIR and merged images. Other dominant and non-dominant PAs are indicated by solid and dotted lines, respectively, in the merged images. T, time post-injection.
Supplemental Figure 2 – Perfusion Patterns Identified by NIR Fluorescence Angiography:

A. Perfusion patterns identified by NIR fluorescence angiography.

B. Perfusion patterns in individual ROIs plotted over time. Perfusion patterns: A, arterial; AD, arterial/delayed drainage; Cap, capillary; AI, arterial-insufficient. ROIs: PA, perforator artery; WPC/p, well-perfused area(s) contralateral and proximal to PA; WPi/d, well-perfused area(s) ipsilateral and distal to PA; PP, poorly-perfused area; NP, non-perfused area; Control, area nearby and outside of flap.

C. Drainage ratio pre- and post-operatively at ROIs. ROIs: PA, perforator artery; WPC/p, well-perfused area(s) contralateral and proximal to PA; WPd/i, well-perfused area(s) distal and ipsilateral to PA; control, area nearby and outside flap.
Supplemental Figure 3 – Effect of Location and Dominance of the Perforator Artery. Drainage ratio (top) and $P_{\text{max}}$ ratio (bottom) were evaluated at the PA. Comparison of parameters between central and non-central PAs are shown on the left and between dominant and non-dominant PAs on the right. Asterisk indicates statistically significance difference. Values represent mean ± SEM. X-axis indicates the time before or after flap elevation.
Supplemental Figure 4 – Perfused Area as a Percentage of Total Flap Determined by NIR Fluorescence Angiography and Clinical Assessment Over Time: Quantitation and comparison of viable area determined by clinical assessment and perfused area determined by NIR fluorescence as a percentage of total flap among central (top center), non-central (top right), dominant (bottom center), and non-dominant (bottom right) PAs. X-axis indicates time before or after flap elevation. Asterisk indicates a statistically significant difference. Values represent mean ± SEM.