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Locating recipient perforators for perforator-to-perforator anastomosis using color Doppler ultrasonography

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Perforator flap;
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Summary *Background:* The authors investigated the efficacy of color Doppler ultrasonography (US) to locate perforators prior to performing perforator-to-perforator anastomosis in free flap reconstruction.

Methods: The authors examined 20 patients who had undergone free flap transfers between April 2013 and July 2014 at the Department of Plastic and Reconstructive Surgery, University of Tokyo Hospital. On the day before surgery, color Doppler US examination was performed to locate lower-extremity perforators. During surgery, the perforators were dissected, observed directly, and used for perforator-to-perforator anastomosis.

Results: Perforator-to-perforator anastomosis was performed in 20 patients. The mean diameters of the perforators used in anastomosis were 0.69 mm in the anterolateral thigh lesion, 0.65 mm in the medial thigh lesion, 0.66 mm in the medial lower-extremity lesion, and 0.63 mm in the lateral lower leg lesion. Comparing preoperative data with the direct observation of perforators, no false-positive results were registered in the localization of the perforators.

Conclusions: By using color Doppler US as a preoperative examination technique, we can locate perforators in the lower extremity efficiently to perform perforator-to-perforator anastomosis, with shorter time, less invasiveness, lower cost, and no risk of radiation exposure.

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