Propeller Flaps For Leg Reconstruction

Reference:

Scientific Literature Review

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Podiatric Relevance:
This study provides a detailed approach of using vascularized tissues in the form of perforator-based propeller flaps to achieve coverage leg soft tissue defects overlying infected bone and tendons.

Methods:
Six patients were treated with perforator-based propeller flaps for soft tissue defects of the leg and knee involving exposed tibial bone, knee joint, or damaged Achilles tendon. This prospective study conducted between December 2006 to May 2007, involved preoperative perforating vessel detection utilizing Doppler sonography and radical debridement of infected, nonviable tissue prior to flap coverage. Flap design was based upon the location of best perforator vessel (nourishing pedicle) and optimizing the coverage of the defect. Four flaps were raised on one perforator pedicle, one flap was raised on two pedicles (one arterial and one venous) and one flap on two artero-venous pedicles.

Results:
Complete and stable coverage of the soft tissue defects was obtained in all cases with the flap covering the majority and skin grafting of the residual part. No flap necrosis was observed, except for a small superficial necrosis of the tip of one flap which was already scarred at time of flap mobilization and harvesting. Two patients developed a transient venous congestion which resolved spontaneously. Mean operative time was two hours with flap sizes ranging from 8x9cm to 25x12cm.

Conclusions:
On the basis of the findings, perforator-based propeller flaps offer a reliable, easy to perform method allowing for coverage of wide defects utilizing viable tissue (single perforator) similar in skin texture and thickness to the tissue lost with good cosmetic and functional results.