

Lower Limb Perforator Propeller Flaps – Clinical Applications

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Abstract

Background: A great variety of flaps have been used in lower limb reconstructive surgery: random pattern flaps, axial flaps and free microsurgical transfers with many variants. After further research on the cutaneous blood supply and improvement of microsurgical techniques, perforator propeller flaps began to be studied and used.

Material and method: A propeller flap is defined as an insular flap mobilized through an axial rotation on a perforator pedicle in order to cover a defect that has to be reconstructed. According to the specialized literature data and to the studies we made on cadavers, this paper establishes a classification based on several criteria: 1) the position of the supplying perforator; 2) the reconstructive necessities and the skin island; 3) the flap blood supply; 4) the aesthetic and functional demands of the reconstructed areas. Based on this study we established the specific reconstructive indications for these propeller flaps.

Conclusions: The reconstructive lower limb strategy allows the use of the perforator propeller flaps as first therapeutic option for small and medium defects in certain areas considered as "critical". Knowledge of the pedicle length and the surface of the flaps facilitates the optimum flap choice in the reconstruction of a certain area.

Key words: lower limb reconstruction, perforator propeller flaps, clinical applications

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