



ELSEVIER



CORRESPONDENCE AND COMMUNICATION

Choosing the correct sense of rotation in 180° propeller flaps

Medial leg propeller flaps, with a single perforator as vascular pedicle, can be rotated up to 180° around their pivot point to cover defects of the lower third of the leg.¹ The distal reach of this flap has meant that areas previously considered unreachable by a local flap can now be resurfaced.²

In the medial region of the lower leg, perforator vessels originate from the posterior tibial artery; these vessels have one, two or more accompanying veins.³ The 180° arc of rotation of the flap results in a considerable twist of the pedicle: comitantes venae compression plays a major role in causing venous congestion of these flaps.³

While transposing a propeller perforator flap with a 180° arc of rotation, turning the flap on its pedicle will cause torsion forces on it that will be worse for one sense of rotation than for the other one. It's mandatory to determine which is the safer sense of rotation (i.e. clockwise or counter-clockwise). By gently rotating the flap first counter-clockwise and then clockwise it is possible to evaluate flap perfusion, prior to beginning the inset of the flap (Figure 1 A, B).

The alignment of the perforator artery and vein(s) at their origin does not necessarily follow the longitudinal axis (cranio-caudal) of the main vessel (posterior tibial artery) and their three-dimensional position can favour obstruction in one of the two senses of rotation.

This concept can be applied to any 180° propeller flap.

References

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2. Teo TC. Perforator local flaps in lower limb reconstruction. *Cir Plást Iberlatinamer* [Online] 2006;32:287–92.

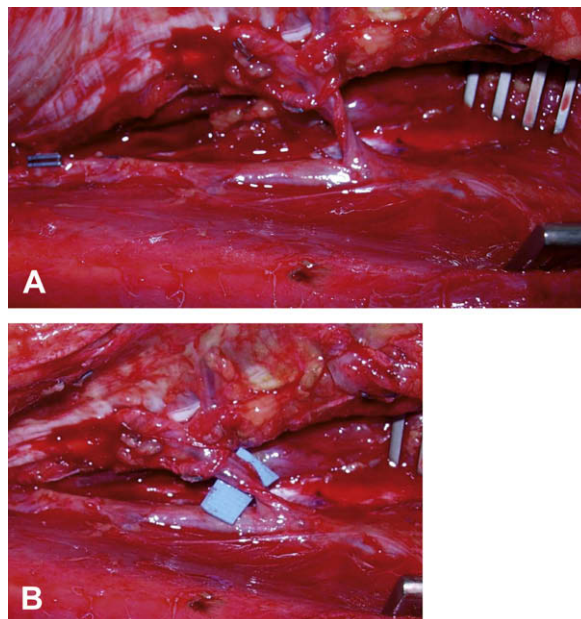


Figure 1 Perforators' origin from the posterior tibial artery. (A) Counter-clockwise sense of rotation with considerable twist of the pedicle. (B) Clockwise sense of rotation with safer positioning of the pedicle.

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