Pedicled Perforator Flaps: A New Principle in Reconstructive Surgery

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Background: In the evolution of flap physiology and reconstruction, there has been a trend of decreased donor-site morbidity. In this article, the chronology of flap reconstruction is discussed, with particular emphasis on the current state of nonmicrosurgical perforator based flaps.

Methods: A literature search was conducted to study the evolution of flap physiology and reconstruction. Using this database, the authors describe the evolution of pedicled perforator flap reconstruction. Various examples of perforator-based flaps are discussed in this article.

Results: The literature review identified examples of scenarios where pedicled perforator flaps from various regions of the body are viable options. Several clinical cases are presented with respect to each region.

Conclusion: Pedicled perforator flaps are a new concept in nonmicrosurgical perforator flap reconstruction. (Plast. Reconstr. Surg. 125: 201, 2010.)

Although these concepts were initially used in microsurgical free flap surgery, their applications are widespread. This development has led to new classifications for perforator flaps. The original classifications of Cormack and Lamberty and Mathes and Nahai were now obsolete, given these new techniques. The “Gent” Consensus on Perforator Flap Terminology brought some level of standardization. This evolution has led to a multitude of descriptions regarding perforator flaps, with new flaps and applications being introduced in the literature routinely. Nonetheless, the majority of reconstructive surgeons in practice are not routinely using perforator flap principles or techniques.

Perforator concepts in microsurgical free flap surgery can be applied in pedicled flaps for reconstruction. It is a natural progression that a perforator flap originally harvested for a microsurgical free flap can be easily harvested as a pedicled perforator flap. By eliminating the microsurgical component, these applications can be widespread and the potential risk of flap loss diminished. The principle would allow for perforator flap design that the nonmicrosurgical reconstructive surgeon can use.

The consequence of muscle loss and donor-site morbidity with a myocutaneous flap is still

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