

**Title: Free flaps monitoring by laser-doppler flowmetry in head and neck surgery**

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*Objective.* Early recognition of free flap vascular impairment is essential for flap salvage attempts. Several methods for surveillance of post-operative flaps are available. Among these, we have extensively used Laser-Doppler Perfusion Flowmetry (LDF) monitoring. We report our experience on this topic and illustrate the advantages and weak points.

*Methods.* Over seven years, 110 consecutive free flaps for head and neck reconstruction were monitored using Periflux System 5000® (Perimed AB, Järfälla, Sweden). In addition to maximum and minimum peaks, a pattern called vasomotion can be detected. Monitoring time lasted from 3 to 7 days, 24/24 h.

*Results.* Six of 110 (5.5%) cases of vascular problems were detected and clinically confirmed. In 5 cases, venous thrombosis was present: 4 patients were successfully treated. In 1 case, both arterial and venous thrombosis occurred. Flowmetry data always showed a more or less sudden disappearance of vasomotion.

*Conclusions.* LDF is a highly sensible, specific, and reliable method. It is easy to use and interpret at a low cost. Remote monitoring could also be developed.

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