
Meshed keystone flap: A last-step modification to reduce tension and cover a larger surface



Barbara A. F. Miguel, MD, Daniel Morgado-Carrasco, MD, Agusti Toll, MD, and Javier Pérez-Anker, MD
Barcelona, Spain

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SURGICAL CHALLENGE

Reconstruction of large defects on the limbs after excision of cutaneous carcinomas can be very difficult. Poor skin elasticity, scarce vascularity, and a large number of tendons that cannot be left exposed are factors to keep in mind; occasionally, the wound bed characteristics are not optimal to ensure skin graft survival. The keystone flap is a fasciocutaneous flap irrigated by vascular perforators¹ and is an alternative to skin grafts used to cover medium and large defects, although the latter sometimes cannot be closed without excessive tension and risk of necrosis or wound dehiscence.

SOLUTION

One solution is to use a meshed (fenestrated) keystone flap. After the keystone flap has been designed and slid toward the defect and when excessive tension is noticed, several horizontal cuts or fenestrations, perpendicular to the maximum tension lines and distributed along the entire flap, are performed to stretch the flap, cover a larger surface and reduce tension (Fig 1, B). This modification of the last step is intuitive, not time consuming, very easy to carry out, and leads to minimal bleeding. We have observed good functional and acceptable cosmetic results during follow-up (Fig 1, C).

The use of a meshed keystone flap can increase the surface area and reduce tension, which leads to reduced risk of necrosis and wound dehiscence. Furthermore, this modification can be used when performing other fasciocutaneous flaps.

From the Department of Dermatology, Hospital Clínic de Barcelona, Universitat de Barcelona.

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Correspondence to: Javiera Pérez-Anker, MD, Dermatology Department, Hospital Clínic—IDIBAPS, University of Barcelona, Barcelona, Spain. E-mail: javiperezanker@gmail.com.

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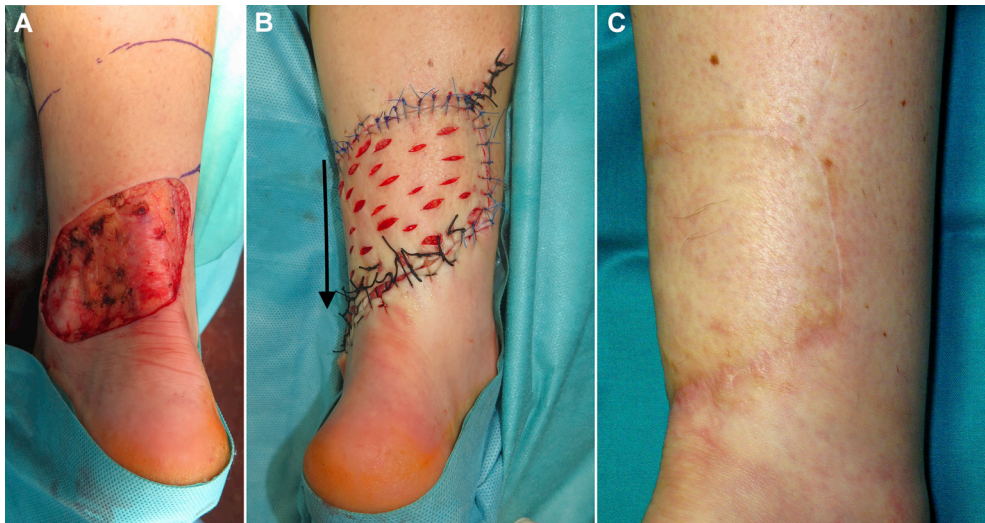


Fig 1. Meshed keystone flap. **A**, A large defect (8 cm) on the lower portion of the leg after wide local excision of melanoma and design of the keystone flap. **B**, Fenestration of the keystone flap: several horizontal cuts, perpendicular to the maximum tension lines and distributed along the entire flap. **C**, Good cosmetic result at the 6-month follow-up. Fenestrations of the flap are barely noticeable.

REFERENCE

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