Letters to the Editor

Effectiveness of Topical Application of Nitroglycerin Spray to Increase Survival of Cutaneous Flaps and Grafts

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To the Editor:
Necrosis of surgical sites is a common complication in dermatological surgery that can lead to clearly obvious cosmetic blemishes, an increased risk of infection, and further surgery on occasions. Various factors are implicated in its development,1 but the main one is insufficient blood flow resulting from arterial insufficiency. Trials have been conducted with different systemic treatments, such as nifedipine,2 pentoxyphylline, and allopurinol, as well as topical treatments such as prostaglandins,3 minoxidil,4 and nitroglycerin,5-7 in order to enhance the survival of flaps and grafts, with conflicting results found in the dermatological literature.8

Nitroglycerin is a potent arterial and venous vasodilator that enhances local...
blood flow, without increasing the precapillary to postcapillary resistance ratio, and has been used topically in cardiological patients, in anal fissures, or as an expander of collapsed peripheral veins. Its use in dermatological surgery is not yet well established, and the results reported are sometimes conflicting.

In our experience, we have found that early use of topical nitroglycerin administered as a spray (Trinispray) 4 times a day for the first 7 days over the entire flap and the surrounding skin has allowed us to recover surgical sites and grafts with considerable skin injury that would otherwise have progressed irremissibly toward skin necrosis.

We describe an 80-year-old male smoker with solid basal cell carcinoma near the internal canthus of the lower right eyelid. Figure 1 shows the immediate postoperative period, 24 hours after the procedure was completed. The distal area of the flap showed evident signs of skin injury. After the topical application of nitroglycerin spray 3 times a day for 7 days, we obtained survival of the surgical site, as shown in Figure 2.

The literature contains contradictory data on the use of topical nitroglycerin. A single dose in ointment form, applied in the immediate postoperative period, does not appear to be beneficial, as reported by Dunn et al.9 In our opinion, the spray is more effective when used every 6 hours and could be beneficial in dermatological surgery, enhancing the survival of skin plasties and grafts that show signs of injury, or as prevention in high-risk patients, such as smokers or patients with diabetes.

Figure 1. 24 hours postoperative.

Figure 2. Skin flap survival after topical treatment with nitroglycerin spray 3 times a day for 7 days is evident.

References