

CASE REPORT

RECONSTRUCTION OF A BURNED HEEL WITH A PEDICLE FLAP

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SUMMARY. This case report describes the reconstruction of a burned heel using the pedicle flap. The surgical procedure is described, and references are made to the relevant literature.

Introduction

The heel of the foot carries the main weight stress of the body on its surface during both standing and walking (*Figs. 1,2*).^{1,2}



Fig. 1 - Weight- and non-weight-bearing areas.

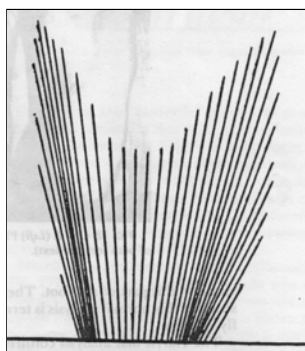


Fig. 2 - Vertical foot-floor reaction vector of a normal subject walking at free walking speed. From Simon D.T.: Foot-floor calculated reaction vector. Bull. Prosthet. Res., 18: 309, 1981.

In common experience, in the heel area, split-thickness and full-thickness grafts can be used only to cover shallow wounds, without bone or tendon exposure, immediately after the injury. These types of grafts are also suitable for provisional covering of granulation tissue.

This covering has a tendency to ulcerate, re-

quiring further skin restoration with a pedicle flap or a free flap with sufficient vessel and nerve supply (*Fig. 3*).³

Parts of the foot that are not subject to weight stress can ultimately be treated with full-thickness grafts without any limitations or restrictions.

For reconstruction of the surface of the heel, we have to use tissue that is similar in its structure and properties, preferably skin originating from an adjacent area.⁴⁻⁷

For the creation of the posterior heel surface and Achilles tendon in-



Fig. 3 - Secondary heel ulceration in the split-thickness skin



Fig. 4 - Lateral island heel flap by Grabb and Argenta.

sions, Grabb and Argenta's lateral heel flaps are the best (Fig. 4).⁸

These inserts are incised on the dorsolateral heel surface, just below the ankle, as pedicle grafts or free flaps. They usually demonstrate a good blood supply and are innervated by peripheral branches of the sural nerve (distance of stimuli discrimination, about 20 mm).

However, the almost ideal material for reconstructing the heel surface is the fornix of the foot.⁹

Short flexor muscles, along with overlying skin, can be transferred to the calcaneus. Rotation flaps or free flaps with preserved vessels and innervation coming from the medial plantar nerve are used (Fig. 5).^{3,10}

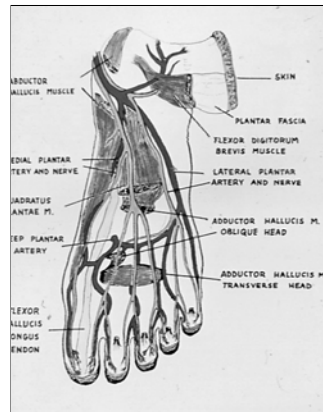


Fig. 5 - Scheme of vessel anatomy of the foot.



Fig. 6 - Heel ulceration.

Case report

We consider the foot of a 17-yr-old girl with deep heel ulceration after a hot water burn (she immersed her feet in a hot tub) (Fig. 6).

The girl had previously sustained a spinal injury with partial medullar damage, which largely contributed to the extent of the burn.



Fig. 7 - Reconstruction of the heel.

The ulcerations were excised under local anaesthesia.

A 6x7 cm flap consisting of skin and underlying tissue was harvested from the fornix of the foot. Me-



Fig. 8 - Fenestration in the dressing on the heel to control flap perfusion.

dial plantar vessels and cutaneous peripheral branch-



Fig. 9 - Good result after 10 months.

es of the plantar nerve were included in the flap pedicle, but not short flexor muscles (*Fig. 7*).

The graft was translocated freely to the heel and sutured in, without any tension. There was no need

RÉSUMÉ. Les Auteurs présentent un cas de la reconstruction d'un talon brûlé avec l'emploi du lambeau pédiculé. Ils décrivent la procédure chirurgicale et font des références à la littérature relative.

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