



CASE REPORT

Distally based first web flap for coverage reconstruction of the great toe

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Introduction

Resurfacing the distal part of the foot is still difficult. Distally based fascio-cutaneous first web flap has a sufficient arc of rotation to reach the toes. This flap is reverse-flow vascularised by the distal communicating artery,^{1,2} which is the distal connection between the plantar and the dorsal first metatarsal arteries. The authors describe its application for the coverage of a dorsal defect of the great toe.

Case report

A 38-year-old man was a victim of a partial amputation of his left hallux with a circular saw while working. There was a section of the extensor hallucis longus and a fracture of the proximal phalanx of the great toe (Fig. 1a). The proximal phalanx was pinned and the extensor hallucis longus tendon repaired. Fifteen days later, a dorsal skin necrosis exposing the tendon was covered with a distally based first web island flap. The flap was designed on the dorsal skin between the first and second

metatarsals, including the point corresponding to the distal communicating artery (Fig. 1b). The permeability of the artery was controlled by Doppler examination to be sure about intact retrograde circulation in the first web. The first dorsal intermetatarsal artery was coursing superficially to the first dorsal interosseous muscle. The flap was raised proximal to distal, including the first dorsal interosseous muscle aponeurosis. At the distal edge of the intermetatarsal ligament the pedicle was not dissected and the flap elevated with the fatty tissue of the first web (Fig. 1c). The flap was transposed through a subcutaneous tunnel to the recipient skin defect without tension and the donor site was primarily closed. No complication was noticed in the immediate post-op period. The patient returned to work 8 months later. The 2-year postoperative clinical course has been uneventful (Fig. 1d).

Discussion

The distally based first web flap is a very reliable flap because of the constancy of the cutaneous arteries in the distal web space.⁴ The authors recommend to raise the whole fatty tissue of the first web space without dissecting the distal communicating artery,

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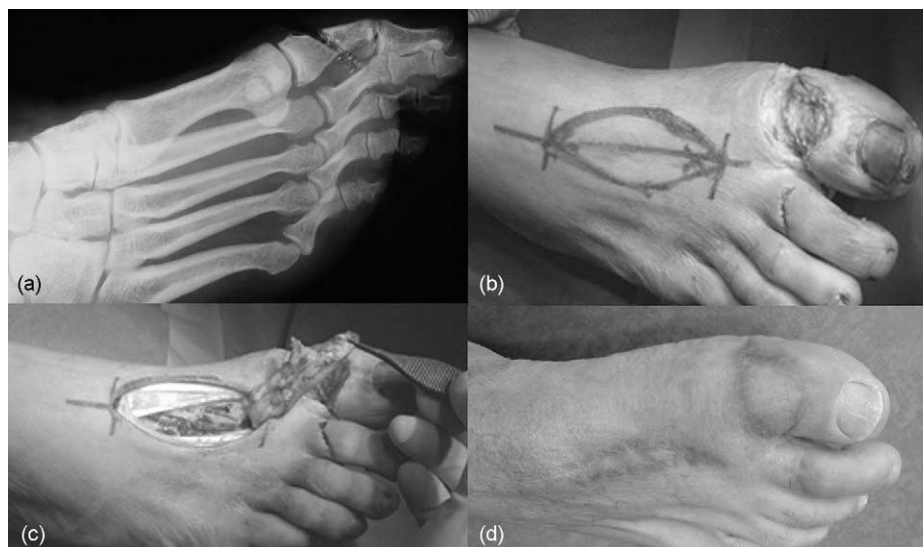


Figure 1 (a) The preoperative X-rays. (b) The 2.5 cm diameter loss of substance and the design of the flap (2.5 cm \times 5 cm). The X indicates the distal communicating artery. (c) The distally based islanded first web flap elevated with the distal communicating artery. (d) 2-years postoperative appearance.

to assure a good venous drainage in the flap. The only similar case in the literature was published by Kaneshige and Kazuya³ but the donor site was not primarily closed and the pedicle was not subcutaneously transposed. The authors call the flap they used the «dorsal foot skin island flap pedicled on the plantar vasculature» but it seems to be the same flap that Earley and Milner² have described.

In conclusion, the distally based first web island flap is a very good flap for resurfacing the great or the second toe. It is easy to raise and primarily closure of the donor site gives few sequel.

References

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