

Toe transfers for microsurgical aesthetic fingertip reconstruction : results of a series of 23 cases.

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Abstract

Introduction : Study objective was to evaluate clinical functional and aesthetic results of free custom-made toe nail vascularized transfers.

Material and Methods : We report retrospectively 23 custom-made toe nail vascularized transfers in 23 patients operated between 1994 and 2003 with a mean follow-up of 5 years.

The mean age at surgery was 26 year-old (2-60). The mean delay before surgery was of 16 months (0-50). Reconstructed digits were the thumb (n=6), the index finger (n=5), the middle finger (n=6), and the little finger (n=6). In all cases, a previous trauma occurred. Indications were nail complex avulsion (n=5), nail dystrophy (n=5), very distal amputation (n=7) and claw nail deformity (n=6). The custom-made toe vascularized transfer was harvested from the great toe in 11 cases, from the second toe in 11 cases and in one case from the third toe. 70 % of our custom-made toe harvesting had a short neuro-vascular pedicle (n=16). In the 23 vascularized transfers, 48 % were composite transfers (n=11). Donor site coverage was achieved through the use of skin grafts, local or cross toe flaps, some were allowed to heal second intention. In all cases, healing was obtained between 6-8 weeks.

Results : In our series, 21 transfers survived completely. Four of them needed a revision for early arterial thrombosis. One complete and one partial necrosis was observed.

Patients functional and aesthetic evaluation showed 90 % satisfaction. Imperfections included lateral nail fold problems, width and length of the nail or bulky pulp.

Conclusion : Microsurgical nail reconstruction by vascularized transfers is a sophisticated operation, indicated for children, motivated young people and musicians. Age is not a contraindication.

When the avulsion leaves the pulp intact, we use a free vascularized nail graft from the great toe for the reconstruction of the thumb and from the second or third toe for the reconstruction of the

fingers. After a distal amputation with a loss of bone, pulp and nail complex, a custom-made toe transfer is preferred: partial great toe for the thumb and second or third toe for the finger.

Our results show an excellent free vascularized transfer survival rate with the harvesting of a short pedicle which moreover, allows a diminishing surgical time and avoids difficulties with plantar arterial variations.

The final cosmetic result of free vascularized transfers is not always perfect. Refinements are sometimes necessary using local flaps, eponychium flaps or removing fatty tissue from the pulp.