

Nail Reconstruction by Nonvascularised Graft from Toe to a Reconstructed Finger -Possible Method of Reconstruction

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Abstract

There are conditions where the nail may be lost. The cosmetic importance of nail is very clear in this case of finger reconstruction. There are many methods to camouflage the defect with synthetic nails and materials. But once own nail can be harvested and used as free graft in reconstructed fingers. With one example the possibility is described.

Keywords: Reconstructed Finger; Nail Graft; Harvesting Nail Graft.

Introduction

The normal, fingernail is composed of laminated layers of keratin, in several parts:

1. Nail root (germinal matrix) is the portion of the nail that actually sits beneath the skin behind the fingernail and extends several millimeters into the nail. The lunula is the whitish base of the nail underneath the plate.

2. Nail bed is part of the nail matrix, also known as the sterile matrix. It is the skin upon which the nail plate sets. Cells at the base of the nail bed (matrix) produce the fingernail plate.

3. Nail plate is the hard portion of the nail that is most visible (the actual fingernail) and is made of translucent keratin. The pink appearance of the nail

comes from the blood vessels underneath the nail.

Eponychium (cuticle) is the thin layer of skin overlying the base of the nail. Perionychium is the skin overlying the nail plate on its sides. Hyponychium is the area between the nail plate and the fingertip.

There are many situations in which finger nails are injured partially or totally.

The studies on success of nail reconstruction is less and all says the results are not satisfactory especially in total loss.

The method used in partial injury nail is to fix it in the bed and give splinting. In case of late repair the deformity of lifted nail. Grooved nail, crooked nail etc can be treated by scar excision and flap cover.

In this paper I would like to present a case of nail reconstruction in a degloved finger reconstructed with groin flap primarily and later toe to finger nail matrix and nail transfer done.

Case Presentation

18yr old college student had a degloving injury while on a tour in accident in bus. The right ring finger was avulsed with loss of distal part of the finger. For the cosmetic purpose 2 options were given. One was ray amputation and the other was covering with groin flap.

The finger was covered with groin flap thin and it healed in 6 months time. The nail reconstruction was insisted upon by the patient. Hence the nail matrix with lunula graft was taken from the 3rd and 4th toes and it was transferred as composite graft. The flap was raised to reconstruct the eponychium and nails fixed to the deeper bone and tissues.

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The graft healed and the nail had grown with a groove and reasonably good appearance was obtained.



Fig. 1: Left ring finger reconstructed with thin groin flap at 6 months postoperatively



Fig. 2: Nail harvested from the 3rd and 4th toes



Fig. 3: Nail harvested which include matrix, lanula and the plate



Fig. 4: Nail plates fixed with sutures



Fig. 5: Nails are fixed and the post operative appearance



Fig. 6: Nail healed grooved appearance after 2yrs of scar revision

Discussion

In hand injuries the finger tip injuries are associated with partial or total nail injuries. If it is partial injury we repair the nail and fix it and it will act as a splint for the terminal finger injury.

In late deformities of the nail injuries, scar excision and nail matrix grafts are used. All these cases give reasonably acceptable cosmetic correction. But the nail bed graft in a reconstructed finger using groin

flap is not reported yet. So the new technique we used for reconstructed finger is reported .

Ethical Clearance

No ethical issues in the case and committee cleared.

Conflict of Interest

No conflict of interest

Reference

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