Cross-Finger Flap

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Indications

1. Volar defect of the finger or thumb.

Possible Complications

1. Flap necrosis.
2. Skin graft failure.
3. Joint stiffness.
4. Undesirable scarring.

Essential Steps

Preoperative Markings

1. Dimensions of the defect to be covered are determined and transposed onto dorsum of adjacent finger where donor flap will be raised.
2. The flap is based on the side of the donor finger nearest the defect and extends on the dorsal aspect of the donor finger toward the far midaxial line.

Intraoperative Details

1. Patient is sedated and regional/peripheral nerve block is administered.
2. Patient is sterilely prepped and draped.
3. Tourniquet is applied to the involved upper arm, with pressure that allows for exsanguination and a bloodless operating field.
4. The wound is debrided and irrigated.
5. Incision is made along the markings carried down to the level of paratenon.
6. Flap is then undermined toward its base with release of Cleland's ligaments for extra mobility.
7. The tourniquet is deflated and hemostasis achieved with bipolar cautery.
8. Full-thickness skin graft is then harvested (usually obtained from antecubital fossa or the groin).

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9. The flap is inset into the palmar wound defect using 5-0 or 6-0 nylon sutures.
10. Skin graft is used to cover the flap donor site using 5-0 plain gut sutures.
11. The skin graft and sutures sites are covered with a nonadherent dressing and sterile gauze.
12. The donor and recipient fingers are secured against each other using a splint and non-compressive wrap.

Postoperative Care

1. First dressing change is performed at 7 days to assess flap and graft viability.
2. The flap can be safely divided after 14–21 days followed by daily dressing changes until wounds heal by secondary intention (other option is to inset the divided portion of flap).

Operative Dictation

Diagnosis: soft tissue defect of volar aspect of ring finger middle phalanx.
Procedure: cross-finger flap.

Indication

This is a ____ right hand dominant female with degloving injury of the volar aspect of the right ring finger middle phalanx necessitating soft tissue coverage. A cross finger flap from the dorsal aspect of the right middle finger at the same level is selected for the reconstruction. Patient understands the benefits, risks, and alternatives associated with the procedure, and wishes to proceed.

Description of the Procedure

The patient was brought to the operating room where time-out was performed to identify the patient and the appropriate procedure. Monitored sedation and a regional/peripheral nerve block were administered by the anesthesia team. The right upper extremity was prepped and draped in the usual sterile fashion after a tourniquet was applied to the upper arm. Surgical time-out was done. The tourniquet was inflated after exsanguination. Irrigation and debridement of the wound was performed. An incision was made along the predesignated markings on the dorsal aspect of the right middle finger and was carried down to the level of paratenon. The flap was then undermined toward its base with release of Cleland's ligaments to give extra mobility. The tourniquet was deflated and hemostasis achieved with bipolar cautery.

A full-thickness skin graft (FTSG) was then harvested from the patient's right antecubital fossa using a 15 blade scalpel. The flap was inset into the palmar wound defect of the right ring finger using 5-0 nylon sutures. The FTSG was then sutured at the flap donor site using 5-0 plain gut sutures. The skin graft donor site was closed using 4-0 nylon sutures. The skin graft and sutures sites were covered with a non-adherent dressing and sterile gauze. The two involved fingers were then immobilized in a palmar splint extending across the hand and wrist.