Replacement of the Soft Tissue Loss of the Distal Phalanx Index Finger—A Convenient Method

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Slicing injuries of the tip of the index finger are common and can be repaired by free grafts or pedicle flaps. Primary suture for closure of these wounds with or without shortening of underlying bone is full of disadvantages. The split thickness free skin graft does not replace the pulp, and many techniques involving pedicle flap repairs are found cumbersome by the patients. Additional advantage of the procedure described is that it can be done under local anaesthesia and the patient may be treated as an outdoor case. These are important considerations in this country.

Management

After debridement and cleaning of the wound under local anaesthesia (Fig. 1) a flap pattern of the required size is marked on the dorsal aspect of the thumb of the same hand. The skin flap is raised along with the subcutaneus tissue. The raw surface so created on the dorsal aspect of the thumb is covered with a split skin graft (Fig. 2). The injured index finger is flexed

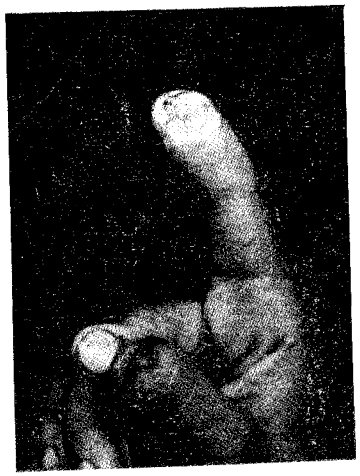

Fig. 1

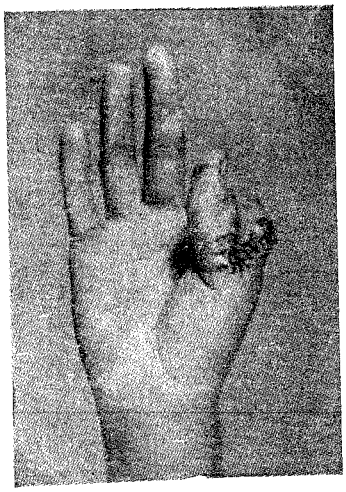

Fig. 2

and brought over the thumb and flap is sutured to the margins of its raw area (fig. 3). The finger is immobilised in flexed position over the thumb with adhesive plaster. The sutured flap is left exposed without any dressings, allowing observation of vascular efficiency and timely readjustment of positioning of fingers when necessary.

The stitches are removed on the seventh post operative day, though the immobilisa-

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tion of fingers is allowed to continue for another two weeks. The flap is than divided

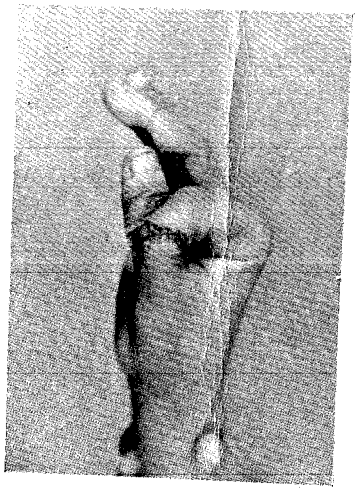

Fig. 3

from the thumb and stitched over the raw area of the finger (fig. 4).

The patient is encouraged to use the remaining fingers without wetting the dressings and soiling the stitch line.

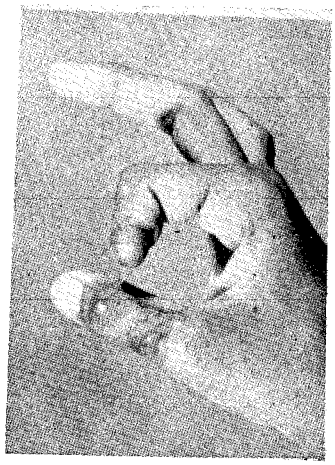

Fig. 4

Discussion

Some disadvantages of the more common type of flap procedures in use for this kind of injury are mentioned below :

(*i*) *U-Shaped Thenar flap.* The donor defect is only partially closed as it is difficult to cover the area by local tissue undermining. It often produces stiffness in fingers and a painful scar in the palm. The position of the fingers is more inconvenient.

(*ii*) *Cross finger flap.* The advantages of the present method over the cross finger flap is that more skin is available over the dorsal surface of the thumb, than over any other fingers. Better adjustment of position of the donor and recipient areas becomes possible because the extent and direction of the movements in the thumb are greater than in any other finger.

(*iii*) *Distally based cross finger flap.* The disadvantage of this technique lies in the base of the flap facing in opposite direction to the supplying blood vessels.

(*iv*) *Pedicle resurfacing from arm, chest or lower abdomen.* The requires prolonged hospitalisation and care. The entire hand has to be immobilised and the return of normal function of the hand is therefore delayed.

The coverage obtained is inferior in its texture and colour.

(*v*) *Transfer of Neurovascular Island flap from the Ulnar aspect of either the middle or ring fingers* : This is a complicated procedure. After the transfer of the skin with neuro-vascular bundle to the defect, the sensations are not established immediately. Proper orientation may take longer for coordination of sensation and motor activities of the hand. Long scars in the palm are an additional disadvantage in Neurovascular flap procedures.

Comments

We have tried this procedure with very satisfactory results for covering the skin and pulp loss on the whole of the volar aspect of terminal phalanx of the index finger and we feel that it has not been given the importance due to it.

In short the advantages that it offers over conventional methods, can be listed as below :

(i) It can be performed under local anaesthesia.

(ii) Does not need hospitalisation.

(iii) The position of immobilisation is very comfortable and remaining fingers can be effectively used during the period of waiting.

(iv) This leads to early rehabilitation of the hand.

Summary

A convenient method for covering the soft tissue loss of the distal phalanx of the index finger is described. This can be done under local Anaesthesia as an outdoor procedure and gives good cosmetic and functional covering.