

Palmer Split Grafts for Defects of Palm, Fingers and Sole

*S. C. Lodha, M.S.,**

*M. K. Harsha, M.B;B.S.,***

A. M. Singhvi, M.S., F.I.C.S., F.A.G.S.,†

C. K. Lohra, M.B;B.S.,§

Introduction :

Wide application of split skin grafts and their excellent results have solved many problems faced by plastic and general surgeons. While grafting an area the Surgeon would prefer a donor area whose surface quality is comparable to the recipient site. This consideration is valid for the defects of the palm, sole and fingers.

The application of skin grafts from distant areas of the body leave much to be desired in terms of cosmetic and functional achievement.

The skin of the palm and sole is unique in composition and function. We have for sometime past used partial thickness palmer grafts to cover skin defects of the palm, fingers and sole. This is an attempt to review our results.

Anatomic Consideration of Skin of Palm and Sole :

The thickness of the skin ranges between 3-6mm, this is mainly due to the horny layer which is subjected to extra strain. The number of dermal papillae are maximum in the palm and the sole and are arranged in rows of pairs. Their prominence produces eleva-

tions on the surface of the epidermis in the form of papillary ridges. These ridges are arranged in a definite pattern such as loops, whorls, circles etc.

These dermal papillae are made up of vascular connective tissues and are responsible for making the superficial surface of the dermis most irregular, a means by which it increases the surface area of the vascular corium many fold. This provides more space for distribution of vessels and nerves which contributes to the extreme sensitiveness of the skin. The intimate contact of the vascular corium with the avascular cutis provides nutrition to the latter.

Experience :

Twelve grafts were done in eight cases to replace post traumatic defects and those following surgery for contracture. The donor skin healed satisfactorily and were indistinguishable from surrounding skin after 6 weeks.

The palm provides a generous and a convenient donor site with the added advantage of immediate ambulation. We found the results achieved by these grafts superior to other methods of skin grafting.

* Lecturer in Surgery

** Registrar

† Reader in Surgery.

§ House-Surgeon

Deptt. of Surgery, S. N. Medical College, Jodhpur. (Raj.)

Technique :

The hypothenar and thenar eminences are preferred, however any part of the palm can be used as a donor area.

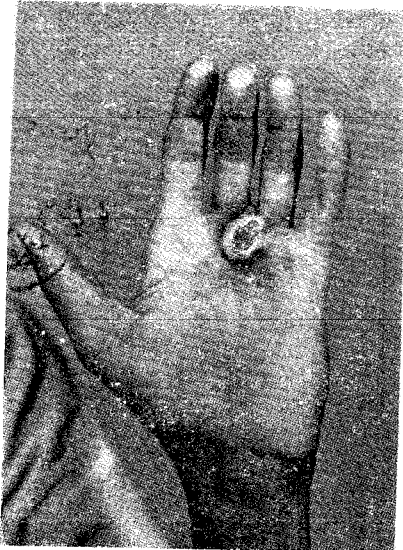


Fig. 1—An ulcer in the palm.



Fig. 2—Palmer split graft from hypothenar eminence.

A graft of intermediate thickness is removed either by a cut throat razor or by a Humby's knife. Here we will like to point out that one must take into account the thickness of the donor skin. In a calloused hand thicker grafts must be cut so that enough dermis is included for the viability of the graft.

Bleeding from the donor area is profuse which can be controlled by a pressure bandage.



Fig. 3—Showing healed grafted area of palm. Separated eschar from the graft lying in the right palm.

The primary dressing is inspected on 3rd, 5th and 10th post operation day. it is on the 5th day that the graft appears to be rejected. This should not cause alarm, as it is only thick dry stratum corneum, which is being cast off. This comes away as a thick dry eschar between 10 to 15 days, after which a Soft pink skin is revealed. Patient is warned to protect the new graft against injury for 4 to 6 weeks till normal papillary ridges reappear both on donor and recipient sites. There has been no complaint of loss of sensation over the donor site, and

good sensation appeared in the graft after 4 to 6 weeks.

Discussion

The problem of covering skin defects in the sensitive palmer surface has foxed plastic surgeons for some time now.

It was Webster in 1954 who for the first time emphasised the value of hairless donor site for resurfacing the defects of palm and advocated full thickness grafts from the medial aspect of foot. Later in 1963 LeWorthy used split thickness grafts from inner side of the foot, for such defects. Both these techniques were associated with discomfort and prolonged morbidity.

Patton in 1969 proposed split skin grafts from the ulnar border of the palm, satisfactory as this posed to be, could only be used for small finger tip defects owing to

the limited area of the donor site. This does not apply to thenar and hypothenar areas. Grafts of upto $2\frac{3}{4} \times 1\frac{1}{2}$ size could be made available.

The sensation over the different areas of the palm depends on the number of dermal papillae present in that particular part. The development of dermal ridges in the graft is evidenced by its retention of the skin print pattern. It is for this reason that good sensation appears in this graft at a subsequent date.

Summary :

The palm has proved to be the most satisfactory donor site for the defects of the palm, fingers and sole of the foot.

Our results were superior by this method—over the other methods we had tried.

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