# Importance of donor site selection in skin grafting

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**Skin grafting has been done for over 100 years, and the importance of the type of graft — split thickness, full thickness or composite — has been well established. However, the importance of selecting a donor site that is appropriate to the type of graft and to the patient's age and sex has received scant attention, despite the fact that, in many cases, the scar at the donor site may prove to be of greater long-term concern to the patient than the initial injury. Examples of malchosen donor sites are presented and a plea is made for more careful selection by all concerned with skin grafting.**

**Les greffes de peau se font depuis plus de 100 ans, et l'importance du typé de greffe — épaisseur de clivage, pleine épaisseur ou mélange des deux — est maintenant bien établie. Toutefois, l'importance du choix d'une zone de prélèvement du greffon qui soit appropriée au type de greffe et à l'âge et au sexe du patient n'a reçu qu'une attention limitée, en dépit du fait que, dans plusieurs cas, la cicatrice de la zone de prélèvement s'avère, à long terme, source de plus d'ennuis pour le patient que la lésion initiale. On présente des exemples de zone de prélèvement de greffes mal choisies et on demande un choix plus judicieux de la part de tous ceux qui s'occupent de greffe de peau.**

Although skin grafting has been done for well over 100 years[1] the importance and significance of donor site selection has received scant attention.

Surgeons have always been somewhat aware of the scar left at the donor site, and even as long ago as 1949, in a discussion of pinch grafts, it was mentioned that the appearance of the healed donor site was frequently considered unsatisfactory (Fig. 1).[2] However, the significance of the donor site scar has frequently been underestimated.

In the excitement of the operating room it is sometimes forgotten that the cutaneous scar will be a lifelong reminder to the patient of his injury. Often the surgically expert repair of deeper structures will be of less consequence to the patient than the unpleasant surgical scar.

In an emergency a tracheostomy can be done through a transverse incision with no loss of time, and the resulting scar can readily be revised. Compare this with the complex problem of the long vertical hypertrophic scar. Maloney[3] has shown that more satisfactory scars can be produced by an inguinoscrotal incision for hernia repair in children than by a conventional groin incision. If a shoulder joint can be exposed from an axillary rather than a deltoid approach, a hip from a groin rather than a lateral approach, and a breast from a periareolar rather than a radial approach, then, even though there may be some minor intraoperative inconvenience to the surgeon, the patient will, for years to come, carry a much more acceptable scar.

### Commonly selected donor sites

Two areas commonly used as a donor site for a skin graft are the volar surface of the forearm and the extensor surface of the thigh. Although readily available they should almost always be avoided because of the long-term esthetic implications.

In the performance of relatively minor surgery of the hand small skin grafts are commonly needed. A few inches away from the operative field is a large stretch of inviting skin — the volar surface of the forearm. Because this area has usually been sterilized and any other site provides some temporary inconvenience for the surgeon, it is commonly used as a donor site. The resulting unpleasant scar (Figs. 2 and 3) is constantly exposed and difficult to revise. In a review of 67 cases in which forearm donor sites were used in skin grafting of the hands, Zavier and Lamb[4] noted pronounced hyperpigmentation in 60%; approximately 6% of the patients indicated some degree of unhappiness with the donor site selection.

The anterior thigh provides a large expanse of skin for larger skin grafts, is readily available since most patients are supine, and offers a relatively firm

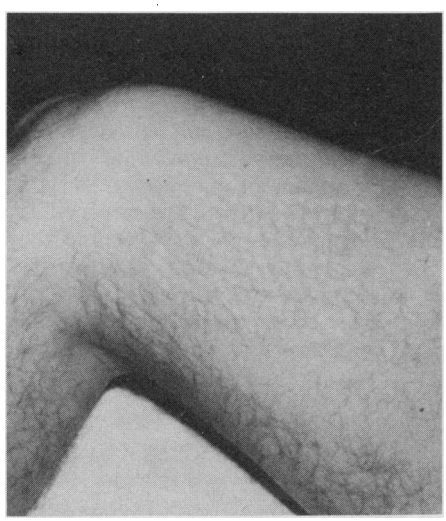

**FIG. 1—Typical scar at donor site of pinch graft, with multiple circular epithelial patches.**

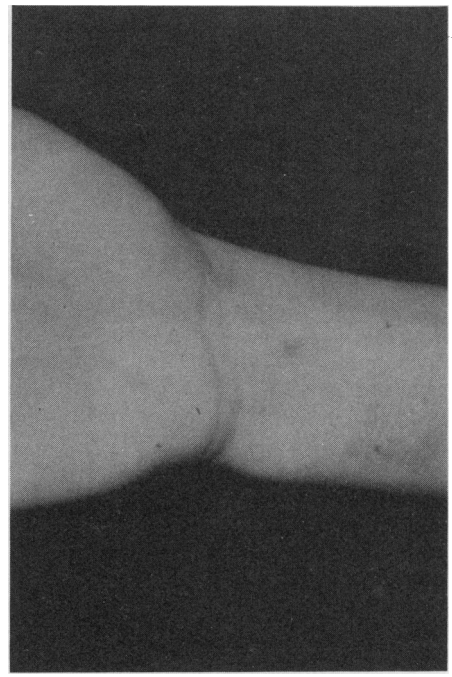

**FIG. 2—Hyperpigmented scar at donor site of split-thickness skin graft, along lower ulnar border of volar surface of forearm.**

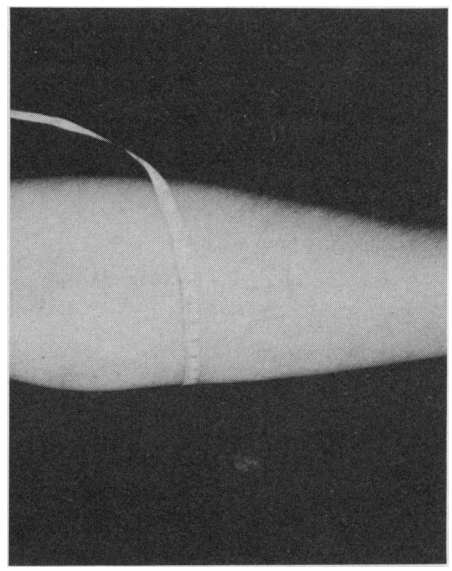

**FIG. 3—Tranverse scar at donor site of full-thickness skin graft on ulnar surface of forearm.**

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FIG. 4—Scars at donor sites of split-thickness skin grafts.

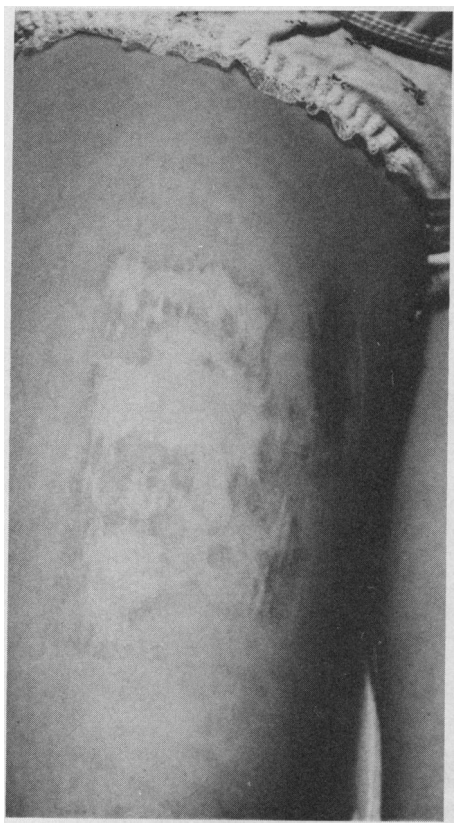

FIG. 5—Hypertrophic irregular scar at donor site of deep split-thickness skin graft in teen-aged girl.

muscular background to facilitate the obtaining of the graft. Not only is the resulting scar (Figs. 4 and 5) exposed to others when shorts or a short skirt is worn, but also the patient continually sees the area, especially when sitting. Hence the scar remains a constant source of concern.

The anterior abdomen is also available in supine patients, but a scar in this area is often readily visible and dictates the style of swimwear (Fig. 6).

### More preferable donor sites

The ulnar border of the hypothenar area is an excellent source of small grafts for the fingertips.[5] Dekeratonization may be required. A graft of a quality most appropriate for hand use is thus available. No significant esthetic deformity or functional interference is produced at the donor site.

The bikini area of the lateral buttock and posterior gluteal region and even the posterior upper thigh present no particular problem in terms of the resulting scar (Fig. 7). The occasional postoperative maceration or infection may delay healing in a patient confined to bed but this temporary inconvenience can be more than balanced by the hidden position of the scar.

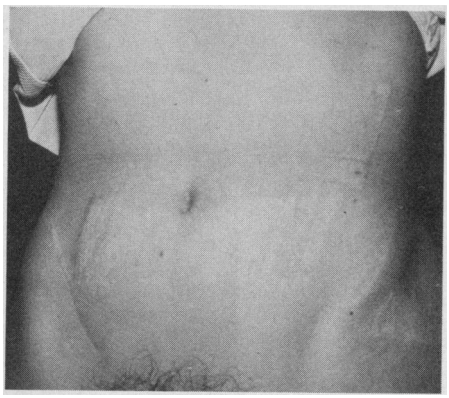

FIG. 6—Complex scar at donor sites of sheets of split-thickness skin graft.

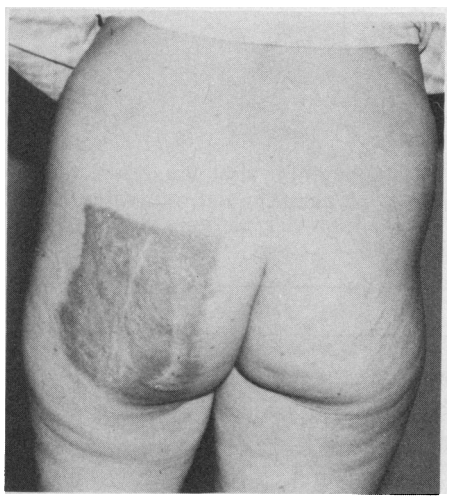

FIG. 7—Slight hypertrophic scar at donor site of split-thickness skin graft, entirely in bikini area despite size and thickness of graft.

Paravertebral lumbar and thoracic axillary areas provide large sheets of thick skin. Although use of these areas may necessitate the cutting of the skin graft as a separate first step in the operation, the resulting scar is much more acceptable than when the large sheet of skin is taken from the anterior thigh or abdomen.

### Factors to consider in selecting a donor site

In the long term the skin at the donor site at best has an altered texture and pigmentation and at worst has an irregular texture and contour and contains areas of hypertrophic scarring. On occasion the scar at the donor site may be a worse problem than the original injury.

The importance of clothing styles, particularly those of swimwear, must be considered in the selection of the donor site.

Women are particularly concerned about the lower anterior thigh as a donor site because this area is commonly exposed by short skirts.

With a very thin split-thickness skin graft the scar at the donor site will be the least pronounced. With pinch grafts an unnatural stippled scar complex is produced at the donor site. A full-thickness graft can usually be taken from an area in a skin crease or another area that is more acceptable.

### Conclusion

It is frequently forgotten that the scar at the donor site of a skin graft may be of significant consequence to the patient. It is therefore of the utmost importance that a site be selected with attention to the type of graft and the patient's age and sex.

The types of scars illustrated are not infrequent, which suggests that all surgeons should choose donor sites carefully. Thus, with a little forethought and a lot of hindsight they might achieve more desirable long-term esthetic results at the donor site.

### References


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