features

A Neighbor's View of the "Follicular Family Unit"

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The introduction of the "Follicular Family Unit" by Dr. David Seager[1] (*Forum* Vol. 8, No.1, 1998), is a welcome expansion of the technique of follicular unit transplantation, as it increases the utility of an already versatile procedure. The focus of this discussion is to point out areas, which, in my opinion, the "follicular family unit" can add to the power of follicular unit transplantation, but also to caution about areas in which its use might actually detract from the ability to produce the most natural results.

The strict definition of follicular unit transplantation is "A method of hair restoration surgery where hair is transplanted exclusively in its naturally occurring, individual follicular units, and the grafts are placed into small recipient incisions."[2] Follicular units are relatively discrete entities, spaced, on the average, at approximately 1 unit/2 mm. When seen as three-dimensional objects under the dissecting microscope, follicular units do not always exhibit the same sharp anatomic demarcation seen histologically (Figure 1). The reason is that the individual hair follicles that comprise each follicular unit sometimes are distinct, but in close proximity, and sometimes actually share anatomic structures with each other. At times they fuse and exit the skin from a single follicular orifice, and sometimes they exit separately.

Although follicular units are closely grouped in the mid- and upper dermis, at their deepest portion (in the upper subcutaneous fat), their distribution is practically random (Figure 2). As a result, individual follicles will have changing relationships to one another as they course through different levels of the skin. The importance is that the close proximity of the follicles in each group allow for their easy dissection from the surrounding stroma, so that they can form a relatively compact implant that can fit into a small recipient site.[3] If follicles from adjacent units are close enough to still be placed into small recipient sites, then most of the benefits of follicular unit transplantation can be preserved (but not necessarily all). However, if the addition of follicles from adjacent units requires larger sites, then much of the benefits of follicular unit transplantation may be lost.

In my view, the key to the success of this technique lies in one phrase that sits quietly at the end of the fifth paragraph. It reads, "Consequently, it is necessary to use a slightly larger recipient site..." If the "follicular family unit" truly represents only the inclusion of stray hairs that might possibly belong together naturally, due to their close proximity to the nuclear family, then one could hardly argue that these should not be included. If one sticks to Dr. Seager's recommendation that "One must find two separate units that look close enough to almost belong together..." or "dissecting closely contiguous one-and two-haired units together," then site sizes should not need to increase to any substantial degree, and the technique should be valuable. In fact, it might always be better to include these "strays," as they might be subject to less trauma than if they were dissected away. This is, of course, provided that the dissection has provided enough naturally occurring follicular units to create the transition zones of the hairline. The staff should always try to keep "borderline grouping" whole, and good dissectors will do this instinctively.

On the other hand, if including extended members of the follicular family requires a larger house (i.e., larger wounds) then I would suggest that the advantage of follicular unit transplantation will be diminished. In my experience, follicular dissection in patients with fine hair can often yield grafts of 3, 4 or even 5 hairs which can fit into 18-gauge Nokor needle sites. This is because of the low volume of each individual hair follicle. However, in patients with low density, regardless of the diameter of the hair shaft, the bulk of the intervening skin often precludes the use of small sites when multiple follicular units are used. In general, a shift from a 19-gauge to 18-gauge needle for site creation, is not very significant, especially behind the frontal hairline. However, a shift from an 18 g to 16 g (as is suggested in this article) to accommodate concomitantly larger grafts, in my opinion, can present prob-

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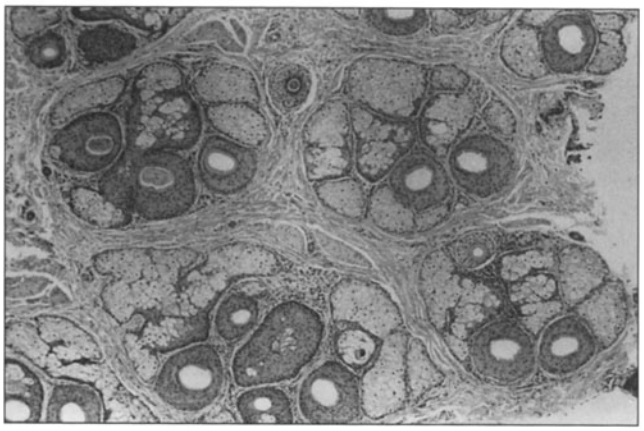

Figure 1. Transverse microscopic anatomy of the normal adult male scalp at the level of the sebaceous glands showing groupings into distinct follicular units.

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lems, as this size site can on occasion lead to surface changes and an unevenness in distribution that is never encountered with pure follicular unit transplantation.[4] In addition, the altered scalp makes subsequent procedures more problematic.

Some examples that are presented in this article are particularly worrisome to me. Using larger grafts to correct "bad hairlines created with compressed minigrafts or old plugs" is the most problematic. Often these patients not only present with a "pluggy look" that can be corrected by adding hair, but with volume changes due to the excess skin moved. This, in combination with the "hyperfibrotic" changes that they may elicit (I find this to be much more common finding than originally described), can alter the overall contour of the patient's scalp and present additional problems in the repair. In these instances, even the slightest increase in additional skin volume will worsen, rather than improve, the patient's appearance. It is certainly helpful to use 3- and 4-hair follicular units in front of old plugs for better camouflage, if they occur naturally, but I would argue that in this situation, rather than combining units with their concomitant increase in tissue bulk, it would be better to accomplish the goals in a second session. This is especially true where the pluggy hairline is already in a forward (low) position and the zone of camouflage cannot be made too deep.

The second situation of concern, is the female hairline. The female hairline is always the most delicate, and is naturally composed of fine, vellus hairs at the leading edge.[5] I would be extremely hesitant to use grafts larger than follicular units in the hairline or even "the part" as in these locations even the slightest surface irregularity or unevenness in distribution will be detected as the patient continues to thin. More importantly, I would question the wisdom of transplanting a woman with "diffusely thinning hair loss over the entire scalp including the donor area" as the donor hair in these patients is, by definition, not permanent and will continue to be lost after it is transplanted. In addition, these women with "diffuse unpatterned alopecia" often become extensively bald and the even small grafts tend to become isolated over time. In the case of women with diffuse hair loss, but a stable permanent zone (diffuse patterned alopecia) transplantation is occasionally warranted to re-create a hairline that can be used to soften the edge of a hairpiece or to camouflage a larger area of thinning behind it. However, in both of these situations, the patient often desires to wear her hair pulled back so the detail of the frontal hairline is visible and must be must be exacting. In both of these situations, multiple procedures are generally needed and in my experience the goal of recreating a satisfactory female hairline can rarely be accomplished in one session.

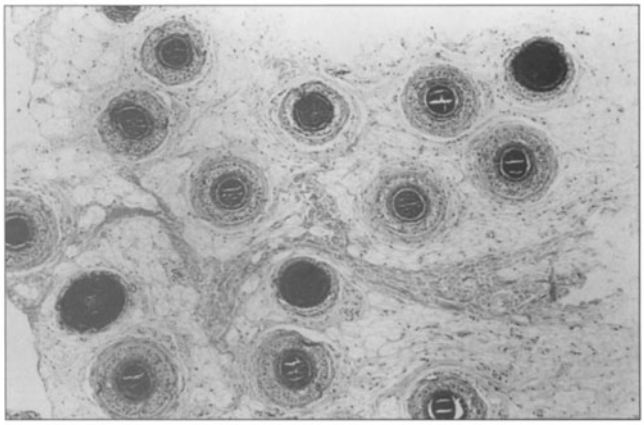

Figure 2. Scalp shown in a horizontal plane at the level of the upper subcutaneous fat, showing a random distribution of follicles.

In the third situation, in the patient with very fine, light-colored hair, it is stated that "Four sessions of successful 4-mm punch grafts that produce complete growth will not provide sufficient density in these areas, because the donor area is simply not dense enough." It is then offered that "creating three- or four-haired follicular units out of suitably adjacent smaller units offers a totally new method for achieving an extremely natural looking transplant with increased density using sparse donor area." This is the most puzzling comment of all. The article begins with "the ultimate maximum density of a hair transplant is limited by fixed unchangeable factors such as hair density..." If this statement is correct, then how can one increase the density beyond that of a series of 4 mm grafts by the new technique described if only one session was used? It would seem logical to me that one could only increase the density of a given area and maintain a natural look with repeat procedures that used grafts whose hair-to-skin ratio was greater than in the donor area (i.e., to use follicular units carefully trimmed of extraneous non-hair bearing tissue). In any event, I would argue that a patient with fine, light-colored donor hair of low density, should have a fine, light transplant, as a final result.

The last example, "building up the anterior temporal fringes in the extensively bald patient" also seems problematic using follicular family units. The most difficult aspect of reconstructing the temple hairline is creating angles so acute that the emerging hair lies flat against the skin surface. When grafts larger than very compact one- and two-hair follicular units are used, I have found it much more difficult to achieve a totally natural result. In addition, any increased bulk to the graft can produce an irregularity in the very fine temporal skin. It is then stated that "it is otherwise very difficult to achieve a natural looking high density in these prominent and conspicuous areas without multiple micrografting sessions." I wonder whether one would want to achieve high density in the "anterior temporal fringe of an extensively bald patient" and if one were, I would think that several sessions using the most delicate of grafts would be the best way to approach the problem.

It has been is stated that "The important point is not that the patient be guaranteed that all his hair loss problems will be solved in one, two, or any number of sessions, but that the surgeon should make every attempt to accomplish the restoration in as few sessions as possible."[6] I feel that this statement is most applicable with repairs, hairline reconstruction, temple restoration, and the

treatment of women. One never wants to subject the patient to a protracted course of multiple surgeries, but in these situations especially, trying to achieve maximum density in a single session may not be the best way to achieve one's goals.

It would seem that the "follicular family unit" could be a general workhorse, useful in most situations, where follicular units are generally used, i.e., in areas where the "definition" of the naturally occurring follicular unit could be slightly broadened without compromising the aesthetic outcome of the transplant. However, in the examples above, I feel the more compact, individual follicular unit would be the best choice.

In summary, it seems that some of these new additions may be old family members dressed up in new clothes, and we are, of course, happy to have them around. But, since family reunions may be held more than once, we don't necessarily need to accomplish everything in one visit. I would readily welcome new members of the "follicular family unit" as long as they were reasonably compact, and could be placed into very small recipient sites. However, if the new members were of a size that necessitated a move into a larger home, then I would be cautious about having them in our neighborhood. ■

References

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