Dense Hair Transplantation From Sparse Donor Area — Introducing the "Follicular Family Unit"

by David Seager, MD, Scarborough, Ontario, Canada

The ultimate, maximum density of a hair transplant is limited by fixed, unchangeable factors, such as donor hair density, color and texture, and hair shaft diameter. This article will describe how to achieve a natural-looking hair transplant, which is denser than the donor area from which it was taken, after one session.

Dr. O'Tar Norwood touched upon this technique when he referred to my suggestions which he described as "multiple follicular transplantation" in the September–October 1997 *Hair Transplant Forum International*, page 10. Dr. Norwood correctly wrote that I occasionally dissect double follicles when more density is desired. There are, however, certain "secrets to success" regarding this technique which are used in order to produce an increase in density, without signs of graft compression.

When any two randomly chosen follicular units are planted into one incisional site to achieve more density, the resulting growth would look like either a small minigraft, or a compressed unnatural looking micrograft, depending upon the size of the recipient site.

While dissecting slivers that are one follicular unit wide into individual follicular units, it is sometimes unclear as to which unit a seemingly "stray" hair belongs. In other words, occasionally it is not completely obvious where one follicular unit ends, and an adjacent one begins. In this instance, when one is specifically trying to create increased density, a stray hair would be included with an (unusually) close neighboring, larger follicular unit, containing possibly three hairs. This technique would create a four-haired unit, when there may have been no four-haired units there at all. This resulting "four-haired unit" can be virtually indistinguishable from a naturally-occurring four-haired unit (and may even be a naturally occurring four-haired unit). Hair transplant technicians and physicians, experienced in microscopic dissection of donor hair, might all agree to the following assertion. Often there are varying opinions when deciding which are three-haired units, and which are adjacent one- and two-haired units, closely positioned together.

The technique described above demonstrates that I do not randomly take two adjacent units and just bundle them together — or "double-up," as Dr. Robert Bernstein suggested in his commentary following Dr. Norwood's article mentioned above (page 11). One must find two separate units that look close enough to almost "belong together." Similarly, in cases where there are very few three- or four-haired units, but mainly one- and two-haired units, three-haired units can be created by dissecting closely contiguous one- and two-haired units together. If the two contiguous units are chosen correctly, the resulting three-haired unit can be very difficult, sometimes impossible, to distinguish from a naturally occurring truly three-haired follicular unit. However, these "doubled" follicular unit micrografts are usually marginally longer than a naturally occurring single follicular unit with the same number of hairs. Consequently, it is necessary to use a slightly larger recipient site, created by a 16- or 18-gauge needle, instead of, respectively, an 18- or 19-gauge needle, in order to minimize trauma during planting and avoid compression.

There are four specific indications where these "synthetic" three and four haired units are best used.

First is the correction of "bad" hairlines created with compressed minigrafts, or old, 4-mm plugs. In these cases, the density of hair in these existing grafts is often artificially and excessively increased. If there is a shortage of naturally occurring three- and four-haired follicular units, it will be very difficult to correct such a hairline using mainly one- and two-haired units. However, if additional three- or four-haired units are created as described above, the hairline can be effectively corrected with one session of dense packing. This would be impossible without what Dr. Robert Bernstein in the September–October 1997 *Forum*, (page 11), refers to as "doubling." It is not necessary to make the patient come back for a second session, when one session can provide the necessary density between the larger compressed grafts using this technique. Dr. Robert Bernstein also wrote: "Nature was able to create this magnificent density using only follicular units." The point is that the cases in which I use this technique simply do not have "magnificent density." In fact, what I am achieving is a deliberate compression, which does not look compressed once the hair has grown in. This is how we can sometimes create "magnificent density" out of relative

continued on next page

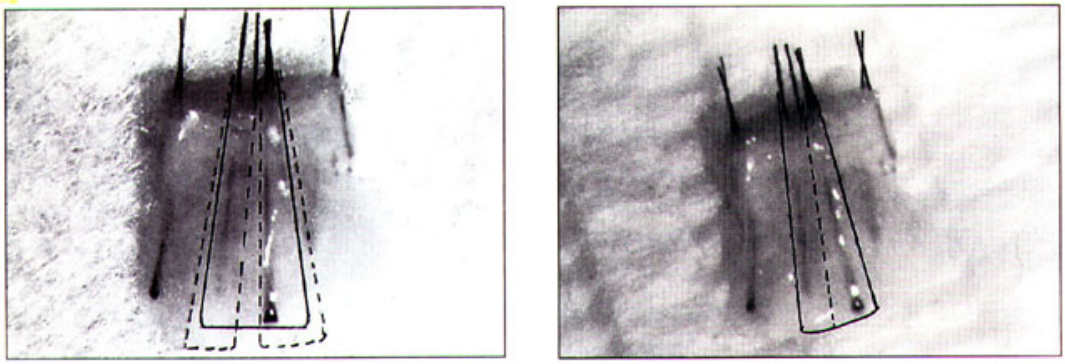

Figure A In the center of this sliver, there are two follicular units - each with two hairs. They can be combined into one larger "family follicular unit"™ plantable into an 18 gauge needle—and mimic a natural occurring 4-haired follicular unit. Note that each two-haired follicular unit, although in close proximity to one another—have their own, separate sebaceous gland visisble.

continued from previous page

sparsity.

The second solution, in which I use this novel technique, is when the goal is to provide decent density in the hairline and part, in a (usually female) patient with diffusely thinning hair loss over the entire scalp, including the donor area. In these patients, the hairline and part are key "anchor" areas where 1) thinness of hair appears most obvious; 2) when thickened using this method, the hair from these areas, grown long, can shingle over a large area of the balding scalp, and considerably improve the patient's whole hair image.

The third situation consists of patients with very fine, light-colored hair, whose donor hair has proportionately very few naturally existing three- and four-haired follicular units. This technique is an effective way to achieve reasonable density in these cases. Four sessions of successful 4-mm punch grafts that produce complete growth will not provide sufficient density in these areas. This is because the donor hair is simply not dense enough. Moreover, in the best of hands, 4-mm punch grafts frequently result in incomplete growth. I hate to disagree with Dr. Bernstein, for whom I have astronomically high respect; however, this method of creating three- or four-haired follicular units out of suitably adjacent smaller units offers a totally new method for achieving an extremely natural looking hair transplant with "increased density" using sparse donor area. This would be impossible to achieve by any other method. The older, alternative method was to use compressed minigrafts, which look terrible. In contrast, these "synthetic" three- and four-haired units look completely natural. Indeed, virtually identical follicular units probably occurred in the same area, in the same patient, years before!

The fourth and last situation is when building up the anterior temporal fringes in the extensively bald patient. It is otherwise very difficult to achieve a natural looking high density in these prominent and conspicious areas without multiple micrografting sessions.

The only disadvantage is, of course, as Dr. Bernstein rightly mentioned in the same commentary, that the donor hair is depleted more rapidly. Therefore, one

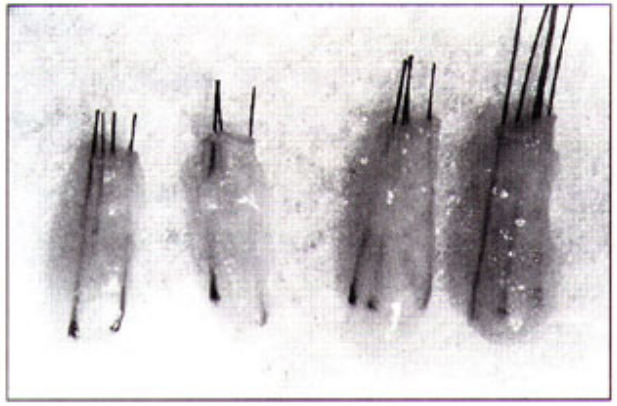

Figure B: Each of these grafts contain two or more follicular units. The two grafts in the left could easily be placed into a recipient site made with an 18 gauge needle site. The two on the right - into 16 gauge needle sites.

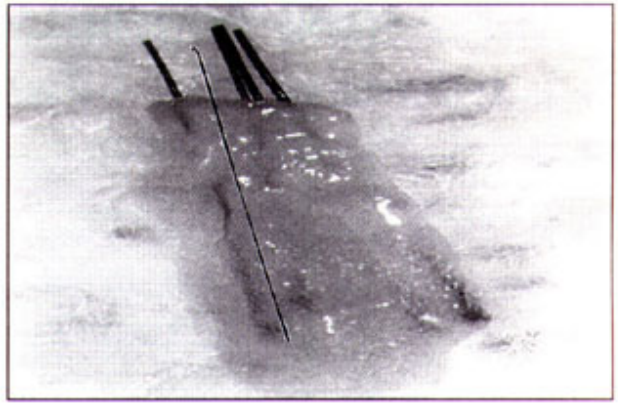

Figure C: This is a "family follicular unit.™" It consists of a one-haired follicular unit on the left and a three-haired follicular unit on the right. This graft is of suitable size to be easily planted into an 18 gauge needle site.

continued from previous page

must judiciously continue this technique to relatively few candidates and small areas in these candidates, such as mentioned in this article.

I believe this is a brand-new technique that has never been described before. These "follicular units," containing an artificially large number of hairs are only constructed from smaller follicular units which are closely positioned to each other (see fig. A, page 21). Since they look as if they "belong" or "fit" together, I have coined the term "Follicular Family Units" to describe these larger groups of follicles.

I plan to have articles that are more comprehensive on this useful, new technique, together with more explanatory illustrations and "before" and "after" photographs available for publication in the near future.

To summarize, density of transplanted hair is the result of several factors, including hair shaft diameter (weight of hair), color and texture, which cannot be changed, and proximity of recipient site placement, which has an upper limit, after which it cannot be increased.

One of the most important factors which influences transplanted hair density is the number of hairs in the majority of follicular units. Using the Binocular Stereoscopic Dissecting Microscopes, we are effectively able to manipulate this number "upwards" in a limited but significant number of follicular units. The key to success in this endeavor is the concept of the "Follicular Family Unit." If any ("non family") two-follicular units, are randomly doubled up, the resulting graft will be more the size of a minigraft, rather than a micrograft. It would need a larger recipient site, which would preclude dense packing because of both technical planting limitations and impairment of scalp vasculature. If, on the other hand, despite their larger size, they are forced into minute micrograft-sized recipient sites; they would be normalized during attempts at insertion. In addition, they may tend to "pop" if densely packed, and when they grow, look more compressed.

Follicular transplantation, facilitated by the Binocular Stereoscopic Dissecting Microscope, is an exciting new field. The advantages seem boundless. ■