are encouraged to use this technique to help decrease processing errors and ensure complete margin visualization.

References


Technical Considerations for Follicular Unit Extraction in African-American Hair

Hair transplantation is a highly effective treatment for androgenetic alopecia. For patients who like to wear their hair short or simply do not want a linear donor scar, a more-recent advancement in hair transplantation has been the advent of follicular unit extraction (FUE) to harvest the donor area. FUE uses a number of typically 1-mm punch excisions to harvest the follicular units from the donor area, which allows hair transplantation to be performed without a distinct visible scar. Rassman and colleagues originally described many of the early indications for FUE, such as early hair loss that require a smaller session, scarred donor areas or low supply, tendency to produce wider scars or keloids, and short hair cuts through which linear scars would be visible. More recently, surgeons have been using FUE in very sessions to treat more-extensive hair loss.

In our opinion, FUE works best for individuals with straight hair. Individuals of African descent have varying degrees of curly hair, and their follicular units are often curved. This makes a procedure such as FUE difficult, for fear of a higher transection rate. Compounding the challenge, in our experience, we find that men often wear their hair short in the occiput, which leaves FUE as the only practical option for hair transplantation, because harvesting the donor area using an elliptical strip will leave a visible donor scar.

Because strip surgery is contraindicated in many men of African descent because of shorter hairstyling practices, and FUE can be technically difficult with curly hair, we are concerned that these patients may be dissuaded from undergoing hair transplantation.

We report a 36-year-old African-American man with Norwood type IV male pattern hair loss (Figure 1) seeking consultation for hair

Figure 1. (A) Norwood 4 male pattern hair loss (B) Patient chooses to wear tapered, short hairstyle in occiput.
transplantation. He chooses to wear a short, tapered hair style in the occiput (Figure 2). We felt that his hair styling practice made using strip surgery for donor harvesting contraindicated because of the risk of a perceptible linear scar, and he agreed. Therefore, we chose to perform FUE to harvest the donor area.

A small test area was shaved. One-mm punch tools, similar to those used for skin punch biopsies, were used initially to excise the follicular groupings with perifollicular tissue just through the dermis, and then the follicular unit was gently extracted using microvascular forceps. Because the curl was at such an acute angle, it was difficult to prevent transection. The diameter of the punch was increased until the diameter of the punch tool was greater than the diameter of the curl “c” that the hair follicles formed. Therefore, it was not until we increased to 1.3 mm that we were able to perform the FUE with an acceptable rate of transection.

Discussion

As demonstrated above, FUE is possible in men of African descent with very tight curl (Figure 3), although special technical considerations should be made. From our observations and experience, we would make the following recommendations:

Ensure that the Angle is Parallel to the Curl as it Enters the Skin

As with any patient in whom FUE is performed, to decrease transection rates, the angle of the punch tool should mimic the angle that the hair follicle exits the skin surface. This is especially important with tightly curled hair, because the exit angle of the hair follicle tends to be more acute (Figure 4).

Use a Punch Tool Whose Diameter is Greater than the Diameter of the “c” that the Curl Makes

Changing the diameter of the punch tool greatly decreased our transection rates. In individuals with tightly curled hair, it is impossible to predict the angle of the hair below the skin surface. Therefore, until we increased the diameter of the punch to greater than the diameter of the “c” in the curl, we were unable to perform the procedure with acceptable transection rates (Figure 3).
Use Minimal Depth Incision

As stated above, coring the follicular unit just to the deep dermis and subcutaneous tissue and removing the remainder of the graft with forceps minimizes transection. With the small punches used for FUE, punching the follicular unit down to the base of the follicle is nearly impossible because it is difficult to predict the angle of curl beneath the skin surface. Therefore, with tightly curled hair, as is seen most commonly in individuals of African descent, we found that it imperative for the punch tool to penetrate even more superficially than typical, going only to the depth of the mid-dermis and gently extracting the follicular unit with light tension using a microvascular forceps. Some surgeons use a dull instrument to score the incision around the follicular unit and then insert a blunt-tipped instrument to the full depth of the follicle. We chose to use the above single-step method. In addition, even using blunt instrumentation, if the follicle varies significantly from the angle of the punch, blunt transection may occur.

Start With Manual Punch Tools

Because various punch diameters may need to be used before finding the appropriate diameter, it is more cost-effective to use less costly manual punch tools. In addition, in our opinion, we have found that manual punch tools achieve better control of the depth of incision. With rotating, motorized punch tools, it can be more difficult to control depth, which could lead to higher transection rates.

Conclusion

Follicular unit extraction (FUE) has been a promising advancement in hair restoration surgery. With its advent, many individuals who could not previously undergo donor harvesting using the strip surgery method are now able to undergo surgical treatment of their alopecia, but because of technical difficulties, individuals with tightly curled hair, most commonly individuals of African descent, are sometimes not considered good candidates for FUE. We have described technical considerations for the role of FUE for hair transplantation in African Americans to allow successful FUE with minimal transection of hair follicles. This technique may also be considered for individuals with central scarring alopecias because they can present with diffusely sparse hair throughout and would therefore benefit from hair transplantation without a visible scar.

Reference


Meena K. Singh, MD
Marc R. Avram, MD
Department of Dermatology
Weill Cornell Medical College/NY Presbyterian Hospital
New York, New York