

Dynamics of hair transplant on afro ethnic hair. Navigating the follicle curve and optimising hair follicle survival, growth and outcome on curved hair follicles

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Abstract

A hair transplant is an effective technique that can help people with hair loss regain their desired cosmetic appearance. Proper planning and execution of the hair transplant operation can result in good results. Follicular Unit Transplantation (FUT) and Follicular Unit Extraction (FUE) are the two main forms of hair transplantation methods used in hair restoration surgery. We'll embark on discussing the FUE technique, in which follicular units are employed in hair transplants on afro ethnic hair.

Keywords: Hair transplant • Follicular Unit Extraction • hair follicle

Introduction

The enormous diversity of hair fibers found in all human populations is striking. The basic structure of human hair fibers is often the same. However, depending on ethnicity, the three-dimensional form of the complete fiber varies greatly. Tight curls, waves, and kinks are typical features of afro ethnic hair, which also grows nearly parallel to the scalp. Curly hairs also have curved follicles, which could make harvesting and transplanting these kinds of hair follicles incredibly challenging. Curved hair follicles require specialized maneuvering during the transplant procedure in order to extract complete and viable follicles, unlike straight hair follicles.

Graft survival after a hair transplant is essential for getting the best-looking outcome. The growth and survival of follicular grafts following hair transplantation are influenced by a variety of factors. When performing hair transplant surgery, the shape of the hair follicle should be one of the most important considerations. The shape of the hair and the angulation of the hair follicle in the scalp both have an impact on how the hair grows [1,2].

Case Report

Critical hair follicle structures to preserve during hair transplant harvesting

Sebaceous glands (Figure 1)

- Develop alongside the follicle
- Provide lubrication, seal in moisture and provide protection against microbial attacks.



Figure 1. Position of sebaceous glands within the hair follicle.

Outer root sheath (Figure 2)

- Extend from the epidermal layer and surrounds the follicle
- In it the bulge resides which stores the stem cells
- Also houses the sebaceous gland
- Provide attachment of the erector pili muscle



Figure 2. Position of outer root sheath(ORS) within the hair follicle.

Hair bulb (Figure 3)

- Base of the hair follicle
- Cell germinating center for the hair follicle
- Mitosis takes place in the bulb

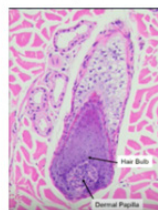


Figure 3. Hair bulb as a mid-segment of the hair follicle.

Dermal papilla (Figure 4)

- Connective tissue
- Forms the communication between the hair follicle and the rest of the body
- Contain blood vessels and nerve endings from the dermis

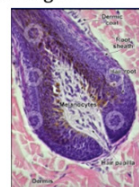


Figure 4. Position of dermal papilla within the hair.

Factors in Hair Follicle Harvesting Technique

Afro ethnic hair growth

Direction of the hair fall guides on the direction of the hair follicle. The hair grows adjacent to the hair follicle, how acute the angle of the hair follicle to the hair is depends on how curly the hair is (Figure 5a-5d).

Punching technique

Consider the angulation of the punching machine. Too acute could transect the follicle. Too obtuse could traumatise follicle structures or even transect the follicle [3]. Stop the punch tip just before hitting the follicle curve or use a short punch (Figure 6).

Follicle extraction

Considerations while collecting a curved hair follicle after punching: amount of tissue still holding onto the hair follicle (Figure 7).

Support the hair follicle gently with tissue forceps while pulling it from the skin. Rationale: Pulling without support could lead to leaving the lower part of the follicle under the skin (transection) [4,5]. The gentle pull ensures no trauma is caused by the tissue forceps holding the hair follicle (Figure 8 and 9).

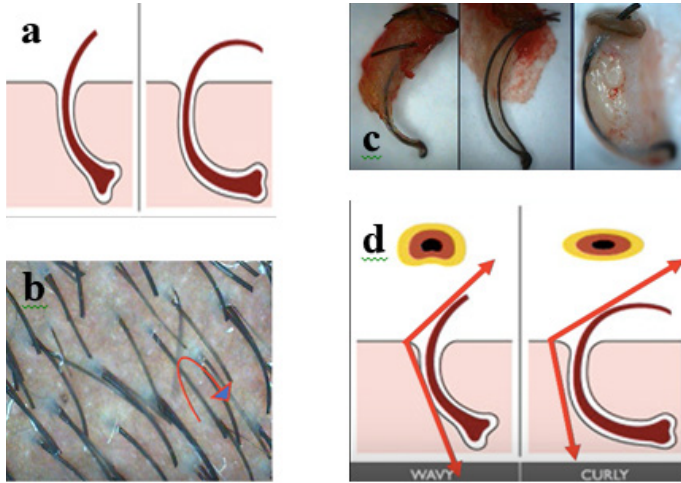


Figure 5. a,b) Afro hair follicle curve, c,d) Illustration of adjacent growth of hair follicles and the hair shaft.

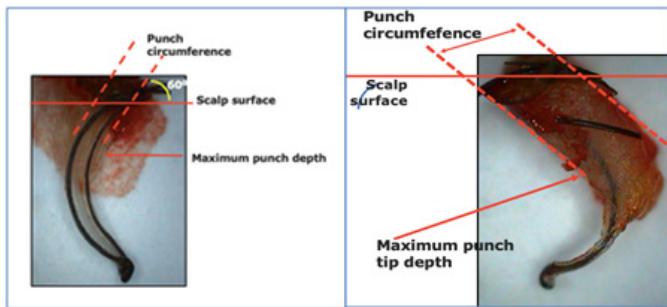


Figure 6. Illustration on curved follicle punching.

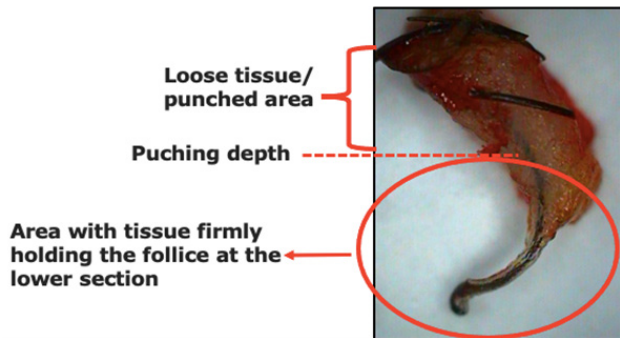


Figure 7. Illustration on extracting curved hair follicle after punching.

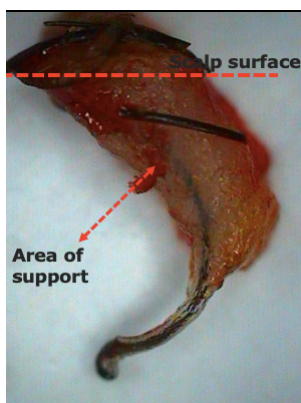


Figure 8. Illustration on supporting curved hair follicle while extracting

Factors in hair follicle harvesting technique: Types of trauma

Transection

Follicle remains in the donor scalp tissue (Figure 10).

Pairing

Laceration or the ORS(outer root sheath by the punch tip) (Figure 11).

The division of the hair follicle into fragments at either end. Resulting from an increase in axial force that causes the punch tip to rotate as a result of: supple skin, thick, long follicles elasticity of skin and punching with a blunt punch (Figure 12).

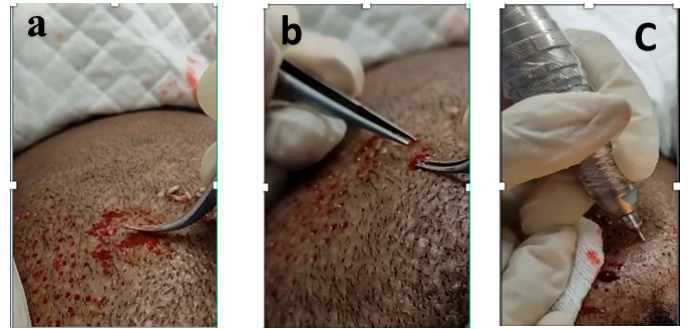


Figure 9. a) Not Supporting, b) Supporting follicles while extracting, c) punch angulation.

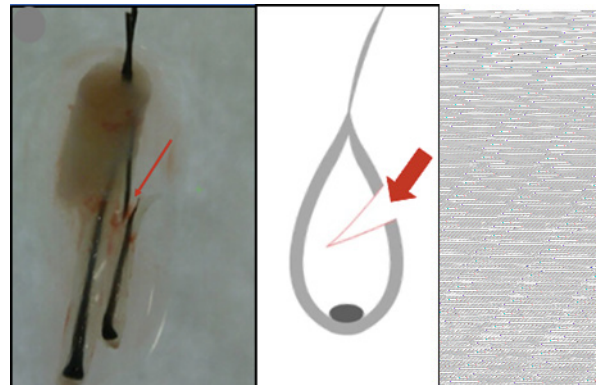


Figure 10. Transected hair follicle.

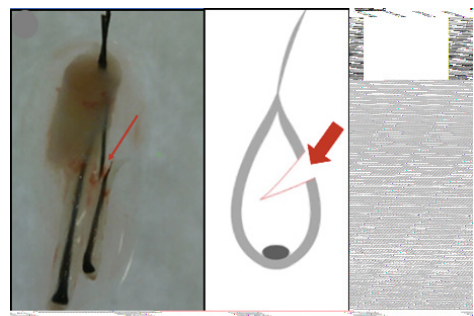


Figure 11. Follicle showing pairing type of trauma.

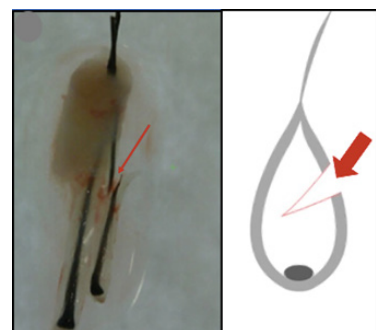


Figure 12. Follicle showing fracture trauma.

Dermal papilla injury

The tissues of the outer root sheath, which contain the bulb and dermal papilla, might be separated while pulling in cases of superficial punching depth. These tissues enable the perifollicular tissue and hair follicle to adhere to one another (Figure 13) [5].

Considerations in follicle placement for wavy and curly hair follicles

1. Direction of hair growth-which direction is the hair growing towards?
2. Angle of the slit – slits are made in a diagonal direction.
3. Direction of the follicle curve inside the slit.

Placement of the hair follicle determines direction of hair growth (Figure 14)

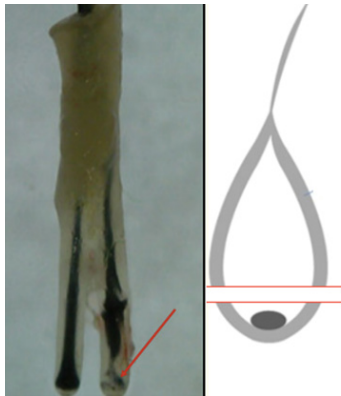


Figure 13. Follicle showing dermal papilla injury.

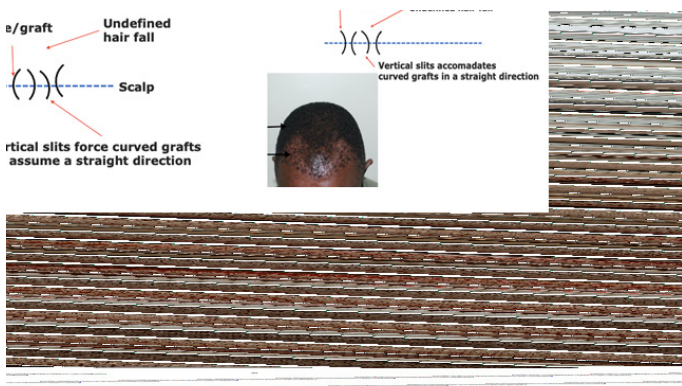


Figure 14. Correct placement of curved follicles

Outcome of placing curved follicles in vertical slits

Placing curved hair follicles in vertical slits leads to hair growing in undefined direction. The hair lacks a definitive natural fall. It also could cause follicle trauma during planting (Figure 15).

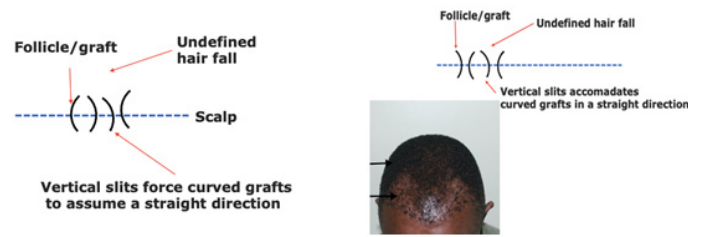


Figure 15. Incorrect placement of curved follicles resulting in hair growing in undefined direction.

Discussion

Patients who have undergone follicular hair transplant using these techniques demonstrate higher graft survival rate which culminates to optimal results. For those whose hair transplant is done along the hairline these techniques gives the hairline a cosmetically acceptable hair fall and a natural appearance. This approach also show significant reduction in transection in afro ethnic hair.

Conclusion

The most ideal result from every procedure is a fantastic hair restoration surgery that aids in restoring the desirable cosmetic features . The direction that hair grows depends on where on the scalp it is. For a natural result, especially along the hairline and frontal area, proper angulation and direction of the transplanted hair are essential. Any graft even in the less conspicuous areas will not look natural if placed incorrectly. The first step to obtaining results you'll appreciate is having in-depth knowledge of the manoeuvres required to carry out a successful afro hair transplant. A well-done afro hair transplant requires meticulous preparation, in-depth expertise, and not to mention utmost artistry. It's crucial to keep in mind that patients who undergo surgery are worse off as a result. Hair t ransplant on afro ethnic hair is not only achievable but is a tremendously satisfying treatment when carried out skillfully, both for the physician and the patient.

References

1. Characteristics of a natural-looking hairline. (2022, October 12). Retrieved October 2022, from Hair Transplant Glasgow, Scotland | FUE | Direct Implantation specialist.
2. Westgate, G., E., Rebecca S. G., and Martin R. G. "The biology and genetics of curly hair." *Experimental dermatology* 26.6 (2017): 483-490.
3. Ethnicity and hair structure. (n.d.). Retrieved October 2022, from Activilong Paris.
4. Jimenez, F., et al. "Hair transplantation: Basic overview." *J American Academy Dermatology* 85.4 (2021): 803-814.
5. Zito, P., M., & Blake S., R. "Hair transplantation." (2019).
6. Park, J., H., & Seung H., Y. "Various types of minor trauma to hair follicles during follicular unit extraction for hair transplantation." *Plastic and Reconstructive Surgery Global Open* 5.3 (2017).