



Basic Over view: Hair Transplantation and detailed Explanation of Follicular Unit Transplantation, Follicular Unit Extraction

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Abstract

In the current setting, one of the most sought-after treatments for andro-genetic alopecia is hair transplantation. Instant Follicular Hair Unit Transplant (IFHUT), an innovative method that extracts hair follicles one by one from the safe donor area and immediately implants them, eliminates the possibility of graft damage in the conventional FUE method of hair transplantation.

Methods: The study included ten andro-genetic alopecia patients. One half of the donor area was used for IFHUT, and the other half was used for conventional FUE. At each follow-up, the implantation results were documented and compared pictorially and through trichoscopy. Results: Fundamentally, better development was seen by the unaided eyes, pictographic correlation and hair scope assessment in the IFHUT site in 9 patients.

Conclusion: The IFHUT method's efficacy and superior results demonstrate its potential to reshape the hair transplant industry's future, despite the steeper learning curve for surgeons and the need for clear protocols and proper execution.

Keywords: Transplantation; follicular unit extraction; follicular unit transplantation; Andro-genetic; Trichoscopy

Introduction

Hair transplantation is a surgical procedure that involves the transplantation of hair follicles from a donor site on the scalp to a bald or balding area. It is a popular cosmetic procedure for individuals experiencing hair loss or thinning hair. Hair transplantation is a safe and effective procedure that can provide natural-looking results [1].

Types of Hair Transplantation

There are two main types of hair transplantation: follicular unit transplantation (FUT) and follicular unit extraction (FUE).

Follicular Unit Transplantation (FUT)

Follicular Unit Transplantation (FUT) involves the removal of a strip of skin from the donor site, usually the back or sides of the scalp [2]. The strip is then divided into small units of hair follicles, which are transplanted into the bald or balding area. The donor site is then sutured closed, leaving a linear scar [3].

FUT Procedure

The FUT procedure is performed under local anesthesia, and patients are usually awake during the procedure. Before the procedure, the surgeon will determine the size and shape of the donor strip, based on the amount of hair needed for transplantation and the donor site's density. The donor site is usually located at the back of the scalp, where the hair is denser and less likely to fall out [4].

Once the donor site has been identified, the surgeon will use a scalpel to remove a strip of skin from the donor area. The size of the strip varies depending on the patient's hair density and the number of hair follicles needed for transplantation. The donor site is then sutured closed, leaving a linear scar. The strip of skin is then dissected into individual hair follicle units under a microscope by a trained team of technicians. The follicles are sorted into groups based on their size, shape, and quality. The recipient area is then prepared for transplantation. Tiny incisions are made in the recipient area using a specialized needle or

blade, and the individual follicle units are inserted into the incisions. The surgeon carefully places each follicle unit, ensuring that the hair grows in the correct direction and angle to create a natural-looking hairline and density [5] [Figure 1].

Recovery and Results

Recovery time after FUT is relatively short, and most patients can return to work within a few days. However, patients may experience some discomfort, swelling, and redness in the donor and recipient areas for the first few days after the procedure. The sutures at the donor site are usually removed within 7 to 14 days. The transplanted hair may initially fall out, but this is a normal part of the process, and new hair growth will begin within a few months. Full results are usually visible after 6 to 12 months [6].

Advantages of FUT

FUT has several advantages over other hair restoration techniques. One of the primary advantages is that it allows for the transplantation of a large number of hair follicles in a single session, making it ideal for patients with advanced hair loss [7]. FUT also provides a high yield of hair follicles, which means that more hair can be transplanted in a single session, resulting in a fuller head of hair. Another advantage of FUT is that it allows for the transplantation of hair from the donor site to the recipient site with minimal damage to the follicles, resulting in a high success rate of hair growth. FUT also allows for the transplantation

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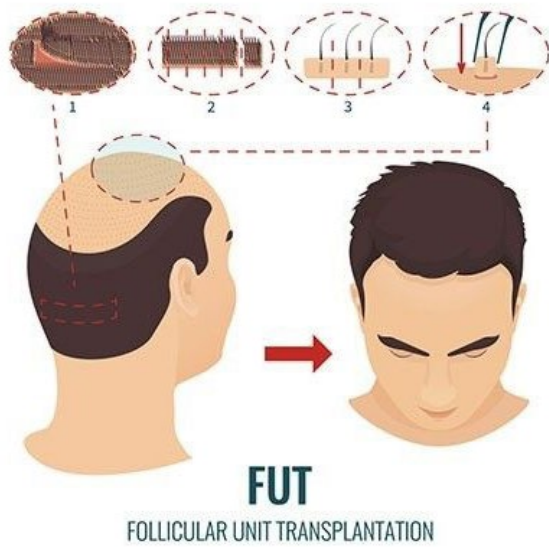


Figure 1: Follicular Unit Transplantation.

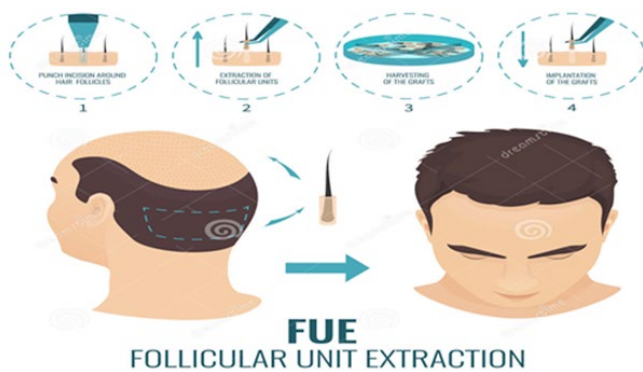


Figure 2: Follicular Unit Extraction

of hair in a natural direction and angle, resulting in a natural-looking hairline and density [18].

Disadvantages of FUT

The primary disadvantage of FUT is the linear scar left at the donor site. While the scar can be minimized with proper surgical technique, it is still visible and can be a concern for some patients. Another disadvantage of FUT is that it is a more invasive procedure than other hair restoration techniques, which can result in longer recovery times and a higher risk of complications [9].

Follicular Unit Extraction (FUE)

Follicular Unit Extraction (FUE) involves the removal of individual hair follicles from the donor site using a punch tool. The follicles are then transplanted into the bald or balding area. FUE does not leave a linear scar and can provide a more natural-looking result [10].

FUE Procedure

The FUE procedure involves the use of a specialized instrument called a punch or a needle, which is used to extract individual hair follicles from the donor area. The donor area is usually located at the back of the scalp, where the hair is denser and less likely to fall out.

Before the procedure, the surgeon will determine the size and shape of the donor area, based on the amount of hair needed for transplantation and the donor site's density. The donor site is then shaved or trimmed to allow for easy access to the hair follicles. The surgeon then uses a punch or needle to make small incisions around the hair follicle, which is then extracted from the scalp using a pair of forceps. The extracted follicle is then stored in a specialized solution to keep it hydrated and healthy until it is ready to be transplanted [11].

Once enough follicles have been extracted, the recipient area is prepared for transplantation. Tiny incisions are made in the recipient area using a specialized needle or blade, and the individual follicles are inserted into the incisions. The surgeon carefully places each follicle, ensuring that the hair grows in the correct direction and angle to create a natural-looking hairline and density [Figure 2].

Recovery and Results

Recovery time after FUE is relatively short, and most patients can return to work within a few days. However, patients may experience some discomfort, swelling, and redness in the donor and recipient areas for the first few days after the procedure. The transplanted hair may initially fall out, but this is a normal part of the process, and new hair growth will begin within a few months. Full results are usually visible after 6 to 12 months [12].

Advantages of FUE

FUE has several advantages over other hair restoration techniques. One of the primary advantages is that it does not leave a linear scar at the donor site, making it ideal for patients who want to keep their hair short. Instead, FUE leaves tiny circular scars that are easily hidden by the surrounding hair. Another advantage of FUE is that it is a less invasive procedure than FUT, which means that it results in a shorter recovery time and a lower risk of complications [13]. FUE also allows for the transplantation of hair in a natural direction and angle, resulting in a natural-looking hairline and density.

Disadvantages of FUE

The primary disadvantage of FUE is that it is a more time-consuming procedure than FUT, which means that it is often more expensive. FUE also requires a skilled surgeon and a trained team of technicians to ensure that the follicles are extracted and transplanted correctly, which can also contribute to the higher cost. Another disadvantage of FUE is that it can result in a lower yield of hair follicles, which means that multiple sessions may be required to achieve the desired results [14]. FUE also requires the use of a larger donor area, which can limit the number of sessions that a patient can undergo. Hair transplantation is performed under local anesthesia and can take several hours to complete, depending on the size of the transplant. Before the procedure, the surgeon will determine the donor site and the number of hair follicles needed for transplantation. The surgeon will then prepare the donor site and the recipient site for transplantation. During the procedure, the surgeon will remove the hair follicles from the donor site and transplant them into the recipient site. The surgeon will carefully place each follicle into the recipient site, ensuring a natural-looking hairline and distribution. After the transplantation is complete, the surgeon will provide instructions for postoperative care and follow-up appointments [15].

Recovery and Results

The recovery period for hair transplantation is relatively short. Patients may experience mild discomfort, swelling, and redness at the

donor and recipient sites, but these symptoms usually subside within a few days. Patients should avoid strenuous activity and exposure to the sun or harsh chemicals for several weeks after the procedure. The results of hair transplantation can vary depending on the number of hair follicles transplanted and the patient's individual hair growth pattern. Most patients begin to see results within a few months, with full results visible after 6-12 months. Hair transplantation provides a permanent solution for hair loss or thinning hair. However, it is important to note that the transplanted hair will continue to grow and may require trimming or grooming to maintain a natural appearance.

Risks and Complications

Hair transplantation is a safe and effective procedure, but like any surgical procedure, it carries some risks and complications. These include: Infection at the donor or recipient site Bleeding, Swelling, Pain, Itching, Scarring, Poor hair growth or unnatural appearance. To minimize the risk of these complications, patients should choose a qualified and experienced surgeon and follow all postoperative instructions.

Conclusion

Hair transplantation is a safe and effective cosmetic procedure for individuals experiencing hair loss or thinning hair. The two main types of hair transplantation are follicular unit transplantation (FUT) and follicular unit extraction (FUE). The procedure involves the removal of hair follicles from a donor site and transplantation into a bald or balding area. Recovery is relatively short, and results can be natural-looking and permanent. Hair transplantation is a safe and effective option for individuals seeking to improve their appearance and self-confidence.

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