Advances in Plastic & Reconstructive Surgery

Applis Publishers

Research Article ISSN: 2572-6684

Eclectic Approach of the Donor Area in Baldness Surgery- Use of the long hair (PLH) and the hybrid harvesting technique (FUE + FUT): the perfect choice for advanced cases.

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Introduction

On the technique of hair transplant of follicular units (FUs) for baldness correction and after effects of the scalp, donor site of the occipital region and the bilateral temporal areas are used. Traditionally, the harvesting of these follicular units may be done through the method of the withdrawal of scalp range known as total follicular unit transplantation (FUT) or by the method of extraction (FUE). Each harvesting method has its limitations, advantages and disadvantages, such elasticity of the scalp, hair density per cm^2, hair type, colour (in contrast with the skin), degree of baldness, amount of FUs to be transplanted, and the type of the remaining scar [1, 2, 3].

In 2009, Dr. Robert True [4] and Dr. Tsilosani [5] in 2010, both published papers highlighting the importance of combining the FUE and FUT techniques, in patients with advanced degrees of baldness type V, VI and VII. Norwood, with the objective of harvesting a greater number of roots and offer these patients the possibility of a greater coverage of the bald area, and in some cases, graft entire area in one surgical session, or in two consecutive days.

In 2012, Dr. Crisostomo [6] published a paper emphasizing the use of the untouched strips in combined surgeries on the lower portion of the FUT line, with the tactical objective of conserving the FUs in this area and avoid extracting them by the FUE technique, in order to, in future moment, enable a second hair transplant using the FUT technique using this previously preserved area.

The objective of our work is to show the importance of the long hair in the FUT strip of the combined technique (FUT + FUE) and its advantages and applications [Figure 1].

FUs harvesting methods

When the FUT method is indicated for the harvesting of UFs, there is no need to shave the patient's hair, allowing the long hair to be used in the follicular units at the moment of grafting [7, 8].

Figure 1: The photo shows the patient prepared for surgery. Note the longhairs kept on the strip (FUT + PLH) andthe rest of the donor area fully shaved for the FUE method.

As for the FUE method, when indicated, it is necessary to shave the hair from the patient's donor area, in order to facilitate the handling of the follicular unit extraction equipment. This method is carried out with the aid of manual, motorized or robotic punch.

When combining both methods, FUT and FUE, in a single operative procedure, the hairs of the donor area are normally shaved completely, making it impossible to apply the long hair technique, which makes the grafting less efficient to maintain the direction of the remaining hairs, especially in the frontal [9, 10] and temporal areas and in the restoration of areas with swirls, often present in several spots of the head, such as on the crown, and on the frontal, parietal and temporal regions [Figure 2 and 3] [4, 5, 11].

As for the advanced baldness cases, which compromise the noble areas like the frontal, parietal, and crown, with one or more swirls and temporal recesses, we normally choose to remove a strip of scalp from the temporal region, above the ears, through the occipital protuberance, until the temporal region of the opposite side, preserving the long hairs throughout the path [Figure 4] [9, 10, 15].

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Received: April 14, 2017; **Date Accepted:** June 2, 2017; **Date published:** June 3, 2017.

Figure 2 and 3: Patient J R B, 41 years old, with Norwood / HAMILTON type V baldness [1, 2, 12, 13]. Hair transplant performed in the noble frontal and temporal regions. The surgical plan for this patient was the use of the hybrid technique and the long hair to restore the anterior hairline, temporal peak, frontal and intermediate region of the bald [14]. Units coming from the FUE method are used to fill the intermediate region. Note long hair assisting in the correct direction of remaining hair.

Figure 4: The photo show the Long hairs preserved on the donor strip (FUT + long hair + FUE)

The grafting of the follicular units with the long hairs facilitates restoring the swirls and maintains the direction of the remaining hairs in the noble, frontal and temporal areas, without the need of a blind grafting which is performed when the hair is shaved [Figure 5, 6 and 7] [14].

Figure 5

Figure 6

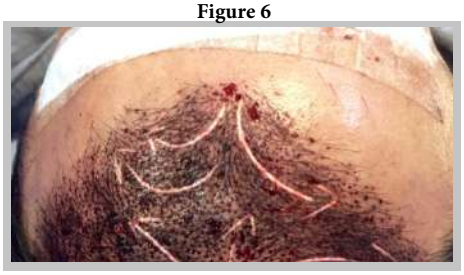

Figure 7

Figure 5, 6 and 7: Immediate postoperative showing the reconstructed Swirls in frontal and parietal region(FUT + long hair + FUE)

Thus, the merge of the two harvesting techniques, FUT + FUE, associated with the use of the long hair (PLH) in the FUs of the strip, it allows for a perfect combination for the restoration of extensive baldness, bringing a safe grafting along the exact direction of the original hairs. [Fig. 8 and 9]

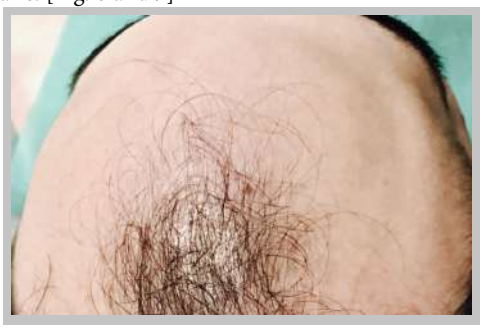

Figure 8

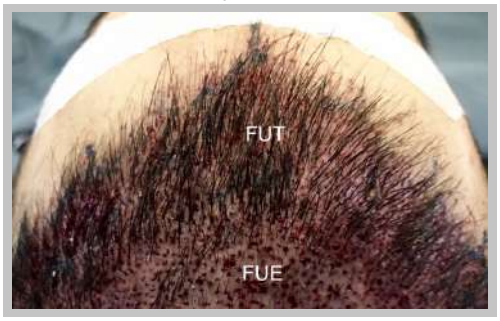

Figure 9

Figure 8 and 9: Patient MUB, 41 years old, with Norwood type V baldness. [1, 2, 12,13]. The photo on the right shows the immediate postoperative with the anterior hairline [9, 10 and 15] and frontal noble zone reconstructed by FUT and LONG HAIR. The intermediate region was filled by the FUE method. [4, 5]

Surgery

Having the patient in the supine position [15], we began to remove the scalp strip in three or four phases, and grafting the units of each piece removed. In order to do this, we gently turn the patient's head sideways and remove the first portion of the strip. While skilled assistants specialized in three dimensional microscopy start to separate the FUs from the 1st portion of the strip, the surgeon carefully makes the haemostasis and joins the edges on two layers, deep or subbulbar, with absorbable suture (5-0 Monocryl), and superficial continuous suture, with nonabsorbable sutures (nylon 5-0) [5, 6].

In the majority of the cases the suture used is the trichophytic closure [16], especially when there is no tension on the edges. Then, the FUs are extracted by the FUE method. Meanwhile another surgeon infiltrates the recipient area with titrated solution of lidocaine, with and without adrenaline [4, 6, 10], to begin the grafting of the first FUs that were collected by the FUT method and extracted one by one by the FUE method, and it goes on until the end of the surgery [Figure 10 and 11].

Figure 10

Figure 11

Figure 10 and 11: Removed the first part of donor strip (FUT) and follicular units extracted from temporal region (FUE)

In the trans-operative period, one group grafts the FUs by the incision method and simultaneous placement (stick and place), while another group extracts more FUs with the aid of micro-motors and special punches (FUE). This "hair by hair" extraction is strictly carried out in the safe donor area (SDA) of the occipital and temporal regions. The FUs obtained by the FUE method are used to complement the anterior and posterior zones. We do not use these FUs (extracted with shaved hair) to graft noble areas, such as the irregular anterior line, nor to restore the temporal zone (male temporal top and descending female curve [8, 9], nor to remake swirls, due to the lack of the necessary long hair to guide the perfect direction of the hairs after the incision and placement of the roots.

We believe that the harvesting of a greater number of FUs in the 1st procedure minimizes the need for a second intervention [4, 5] However, when necessary, the residual fibrosis left by the punctate scars of the extractions, does not affect the resection of a second strip, which might either be above or below the primary linear scar, and may or may not be included it in this new removal, depending on the elasticity of the scalp. It is tactically possible to extract FUs with long hairs using special punchs. However, we still do not have a large casuistry in relation to the application of this method in the surgery of multiple techniques of FUs harvesting. The long hairs should be washed and dried by dryer at the end of the procedure. The new hair can be combed, carefully [17].

Post-operative care

The postoperative care is the same as in the isolated surgeries of FUT and FUE. In general, patients (especially the younger ones) accept the fact that the scar is exposed in the first twenty or thirty days after the surgery, provided they are told so and are well oriented on the pre-operative phase.

The long hair is washed, dried and combed causing immense joy to the patients, who feel satisfied with the procedure performed [14].

On the 2nd postoperative day the patient is free for routine activities. At around the 10th to the 15th day, the suture is removed and the patient is advised of the medical follow-up procedures.

The patient is then seen at the 1st, 4th and 12th month after the surgery, when the final result of the procedure is achieved. On that occasion the need for a second surgery is considered, depending on the case and desire of the patient.

Figure 12

Figure 13

Figure 12 and 13: Pre and post operative Patient A, 62 years old, with NORWOOD / HAMILTON type VI baldness. On the right the photo shows the result of only one surgical treatment by the associated multiple harvest method (FUT + PLH + FUE) in the 7th postoperative month. Note the transplant in the frontal, parietal and temporal regions remade with Long hair, strictly respecting the direction of the fine and few remaining hair.

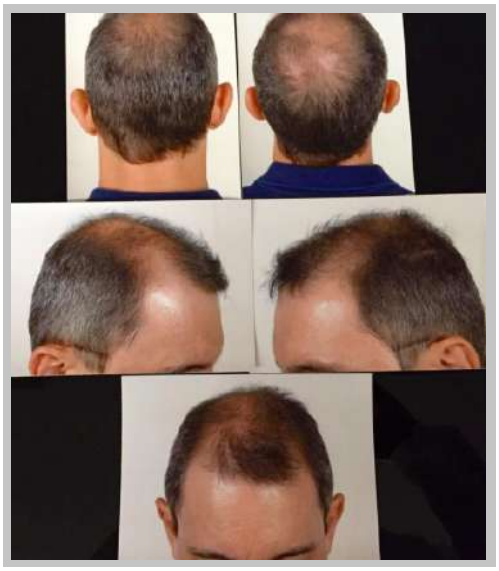

Figure 14

Figure 15

Figure 16

Figure 14, 15 and 16: Patient M A S, 43 years old, before and result after 1 year of surgery

Figure 17

Figure 18

Figure 17 and 18: patient C L, 49 years old, with NORWOOD / HAMILTON type VII baldness [1, 2, 12, 13]. On the right the photo shows the result of only one surgical treatment by the associated multiple harvest method (FUT + PLH + FUE) in the 7th postoperative month. In this case, the long hair helped in the art of grafting the units creating a perfect orientation for the case

Conclusion

The eclectic approach of the donor area in order to obtain FUs (FUT + FUE + PLH) is, in our clinic, the first choice in the treatment of NORWOOD / HAMILTON type V, VI and VII advanced baldness. Not only because of the increasing of the amount of roots harvested, but also to make it possible to graft the long hairs of the strip, being this the main advantage of this method. This leads to a more efficient restoration of the extensive baldness, especially when it involves the frontal and temporal noble areas, regions in which the grafted hairs need to follow strictly the direction of the remaining ones.

This multiple harvest method was also effective in restoring bald areas with swirls, such as crown and other glabrous regions of the scalp, by the simple use of long the hair in the FUs, contributing positively to a more natural result.

The logistics of the operation will depend exclusively on each professional. We prefer to start by removing the donor strip, performed in three or four phases, having the patient in the supine position.

We performed the multiple methods of harvesting and grafting the FUs in just one day of surgery. However, it can be done in two consecutive days, removing the strip with long hairs (FUT + PLH) and grafting of the FUs on the 1st day, and the FUs (FUE) removing and grafting on the 2nd day. In our case, the surgery on two consecutive days becomes unnecessary due to our experience in hair transplant and the intensive training of our team, making it possible the execution of this multiple method of harvesting and grafting the FUs done in only one surgical event, having an average duration of 9 hours.

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