Official Publication of the International Society of Hair Restoration Surgery

FORUM

HAIR TRANSPLANT FORUM INTERNATIONAL

VOLUME 28 | NUMBER 6
NOVEMBER/DECEMBER
2018

IN THIS ISSUE

The Use of Body Hair with Scalp Hair for "Combination Grafting" to Enhance Visual Density of Hair Transplantation and Increase Coverage in Advanced Alopecia

Anil Kumar Garg, MBBS, MS.MCh, FISHRS | *Indore, India* | anilgarg61@yahoo.com;
Seema Garg, MBBS, MSc | *Indore, India*

ABSTRACT

Introduction: Hair transplantation is becoming the most common cosmetic procedure for men across the world with demand for higher density and treatment of extensive hair loss. This requires a higher number of donor follicles. Beard and body follicles can be used in addition to scalp hair as donor in suitable patients.

Objective: To demonstrate the use of body hair to increase the visual density and for better coverage for higher grades of androgenetic alopecia (AA).

Method & Material: Sixteen patients were selected due to the availability of body donor hair and consent for body hair harvesting was taken. The beard was the first preference and then chest and abdominal follicles were used in combination with scalp hair follicles to treat Norwood grade IV and above. Beard and body hair were harvested using the follicular unit excision (FUE) technique. Post-operative pictures were taken and patient satisfaction, doctor's observation, and global photographic evaluation was done.

Results: Following hair transplantation, patient photographs were taken at 4, 8, and 12 months. The results were assessed on the basis of global photography. The use of body hair combined with scalp hair greatly enhanced the visual density, leading to better coverage in even higher grades of hair loss.

Conclusion: "Combination grafting" is a good method to use to treat higher grades of hair loss as well as to enhance the results of hair transplantation in suitable patients.

Key words: combination grafting, FUE, Norwood grade

INTRODUCTION

Hair transplantation is becoming a very popular procedure. The demand for higher density coverage with a normal appearance is increasing. This requires a higher number of donor hair follicles. The biggest limitation of the hair transplant procedure is the discrepancy between demand and supply. Beard and body hair are a good source of donor hair follicles.[1,2] We use "combination grafting" in which scalp hair follicles are transplanted with body hair follicles. Combination grafting is a similar procedure to mixed grafting in which multifollicular units (MFUs) are mixed with follicular units (FUs). This not only increases the total number of donor hair follicles but it also enhances results because of the higher diameter and visual density of beard hair. Although body hair other than the beard is thinner, it certainly adds to the coverage value and is better than scalp micropigmentation.

Beard hair typically is thicker and curlier, giving higher visual density, and is used in the forelock and mid-scalp area. Beard, chest, and other body areas are non-scalp sources of donor hair follicles and their growth is androgen-dependent, which is an advantage in androgenetic alopecia.

OBJECTIVE

We used a combination of body hair follicles and scalp hair follicles to enhance the visual density of hair transplantation and provide better coverage for higher grades of scalp hair loss.

PAGE 221

FORUM
HAIR TRANSPLANT FORUM INTERNATIONAL
VOLUME 28 | NUMBER 6 | NOVEMBER/DECEMBER
2018

TABLE OF CONTENTS

HAIR TRANSPLANT FORUM INTERNATIONAL
is published bi-monthly by the
International Society of Hair Restoration Surgery

First-class postage paid Milwaukee, WI and additional mailing offices.

POSTMASTER Send address changes to:

Hair Transplant Forum International
International Society of Hair Restoration Surgery
303 West State Street
Geneva, IL 60134 USA
Telephone 1-630-262-5399
U.S. Domestic Toll Free 1-800-444-2737
Fax 1-630-262-1520

Official Publication of the
International Society of Hair Restoration Surgery

President's Message

Arthur Tykocinski, MD, FISHRS | *São Paulo, Brazil* | president@ishrs.org

The Future of the Hair Transplant Industry

After continuous evolution in the hair transplant procedure over the past three decades, we are now facing a dilemma: super high-quality clinics on the one side, offering an artistic and artisanal hair transplant that makes us really proud, and on the other side, we have the "industrial scale, assembly line" hair transplant clinics. The latter has been under the radar for a while, but now the bad results are surfacing…mainly in Europe and around the Mediterranean, but soon, they will be seen everywhere.

What we're seeing is just the tip of the iceberg; soon all this will be discovered by the public and can affect HT credibility worldwide. The low-quality HT has many faces: 1) the assembly lines—where 10, 20, or more HTs are done per day, and/or 2) the untrained doctors who supervise a procedure they don't know, which is entirely an unethical practice; yes, that's correct: a surgeon who is legally responsible for a procedure that he/she doesn't have expertise in and is blindly trusting the work offered by techs who are hired or offered by companies. This is a perfect example of the merchandising of medicine: unethical behavior and no care for the patient, which is ultimately our major goal as physicians. What a shame.

In response, the ISHRS has created our Black Market Awareness Campaign (BMAC), which received massive support from our members during the World Congress in Hollywood; thank you all! During the annual business meeting, we asked members about the campaign and of the 100 members who voted, 95% of them supported this campaign…remarkable!

To start, we recorded several interviews with members about the BMAC, and there is much more to come. It is not an easy task to alert the public about these low-quality HT clinics that are only focused on money, are unethical and many times illegal, and that produce disastrous results such as donor area depletion, bizarre low hairlines, or poor hair growth.

If nothing is done, it will be the end of HT as we know it. This is not fair to the patients who are getting harmed. Now is the time for us to unite. We need to fight the black market on many fronts and are focusing on the following:

1. **Communicate to the public about what the black market is and the harm it can cause to unknowing patients.** There is nothing better than getting information directly from the source: stories from patients damaged by the black market clinics. If you have patients suffering the consequences of a black market procedure, we encourage you to ask them to help us by sharing their story. Please email us at BlackMarketAwareness@ISHRS.org. We need to record these personal experiences. Please contribute!
2. **Communicate to other medical societies.** Most physicians around the world have no idea that this problem exists. We must inform them. The ISHRS is preparing a PowerPoint presentation for our members to use to share this information with any other medical society for which they will give a lecture. It is important not only to alert prospective patients but also to inform physicians "outside HT" so they don't unknowingly get trapped by companies irresponsibly offering them easy money through unethical behavior.
3. **Advance legal efforts to combat this issue.** Although it takes time, we are also trying this route.

This is what we can do now. At this point, anyone or any group that wants to join our BMAC is welcome—for the good of the patients, for the dignity of our profession. If you would like to support us and be involved, contact any member of the Board of Governors or Executive Committee as each and every one of us will be pleased to help you.

We are also accepting donations for our BMAC. We can only succeed with your full support!

Thank you so much. ■

Co-editors' Messages

Andreas M. Finner, MD, FISHRS
Berlin, Germany
forumeditors@ishrs.org

The World Congress in Hollywood was a great success. Rachael Kay and her contributors wrote a detailed report, but each of us had many additional personal impressions, observations, and discussions during this well-organized meeting.

In this issue, Anil Garg describes how he is able to use scalp, beard, and body hair to increase the donor hair supply. In his Indian patient population, many patients have thick and dense scalp, body, and beard hair and darker scalp skin with less contrast.

Paul Rose obtained a histology from FUE dots demonstrating that they are actually scars extending into the deep dermis. And Walter Unger again emphasizes how these circular incisions add up to a huge incision length. It is unethical to call FUE scar-less and non-incisional.

As our specialty faces increasing challenges by unethical providers, the ISHRS's new Black Market Campaign will be important in our efforts to create public awareness and protect patients. New risks arise not only from medical tourism but also from inland suppliers of lower standards; they can easily attract and mislead patients through the internet.

It is ***unethical*** to do surgery on unsuitable patients and only aim for a short-term effect, to promise unrealistic outcomes, to play down the medical and cosmetic risks of the surgery, to deceive patients about physician qualifications, and to let non-medical, unlicensed staff do surgery.

It is ***ethical*** to manage the donor and recipient areas based on future hair loss progression, to inform patients about the realistic chances for success and risks of the surgery, to reject unsuitable patients, and to do no harm.

To ensure a high-quality level of hair restoration, we need to define guidelines based on scientific evidence and clinical experience. And we need to inform future patients how complex the procedure is and how they can distinguish an unethical provider from a trustworthy specialized physician.

This ePUB FORUM may become a source of information for an extended readership in the future. Your submissions of articles and ideas are important to achieve this goal and to reflect the level of expertise we have reached in hair restoration surgery. Please send them to forumeditors@ishrs.org. ■

Bradley R. Wolf, MD, FISHRS
Cincinnati, Ohio, USA
forumeditors@ishrs.org

Congratulations to all for another great meeting; to Paul Cotterill and Jerzy Kolasinksi for their Follicle awards, and a special congrats to a past *Forum* Co-editor and mentor, Mario Marzola, for his well-deserved Manfred Lucas award. The meeting wouldn't have been possible without the hard work of Parsa Mohebi, Tommy Hwang, Victoria Ceh, and the ISHRS staff over the past year. It was great to see old friends and colleagues while learning from the best about the current state of our specialty.

The results shown in Anil and Seema Garg's lead article on combination grafting using scalp and body hair are very impressive and show an evolved technique. Harvesting and placing 7,000 grafts, 5,000 from the scalp and 2,000 from the beard and body, in two days is a gargantuan task requiring a large, well-coordinated, and experienced staff to accomplish.

The secrets of FUE continue to be revealed in articles by Paul Rose and Marie Schambach. I've used the Trivellini device and it seems a small amount of suction does facilitate contact of the skin to the entire circumference of the punch. This makes it easier and faster to incise the skin then advance the punch using different motion modes.

The enemy we face with FUE is the exposure of every extracted follicle and dermal papilla to potential trauma due to their proximity to the punch and tearing of the graft from the fat. With FUT, follicles between the strip edges are completely protected and insulated from trauma. FUE is a totally blind procedure while FUT is an open procedure where all follicles in harm's way are visualized. Wide strip scars can almost always be hidden by growing the hair above longer while the devastation we are seeing from FUE is unprecedented due to the destruction of so many follicles in the direct path of trauma.

It's ironic that FUE, a more difficult and blind procedure, is being entrusted to unlicensed assistants. And this isn't only happening in countries that turn a blind eye to the laws. A series of rogue clinics staffed by non-physicians is only one aspect of the black market. Reputable physicians, often plastic or cosmetic surgeons, who have no experience doing hair restoration surgery are buying machines and hiring experienced non-licensed technicians to perform the surgery. There are three clinics in my city and five in the state where I reside that use unlicensed assistants in conjunction with a turnkey FUE machine. All physicians and patients need to be made aware of the complicated nature of and the laws surrounding hair restoration surgery. I applaud the ISHRS for taking a strong stand against a trend that affects us all. ■

CONTINUED FROM FRONT PAGE

METHOD

Scalp hair follicles were mixed with body hair and transplanted to cover the area of hair loss. In all 16 cases, combination grafting was performed. To assess the suitability of patients, all cases of male pattern alopecia of Norwood grade IV and above were examined and evaluated for donor availability of scalp and body hair. In India, many patients have very good beard hair. A detailed discussion was conducted with the patient and consent was taken for using the combination approach. In all cases, a scalp donor hair trichoscan pre-examination at five locations was performed. Scalp hair was harvested either by FUT or FUE, with the selection of the harvesting method made by choice of the patient after discussing each method's pros and cons. Body donor hair follicles were harvested using the FUE technique. Two surgeons harvested and planted simultaneously to reduce the surgical time. The total follow-up period was 18 months.

In **Norwood grade IV**, we planned 2,500-3,000 grafts. With consent, we harvested 20-30% of the total grafts/follicles from the beard (approximately 600-900).

In the first 2cm of the defined hairline zone, including the transition zone, only scalp hair follicles were used and placed as per the standard guidelines described by Shapiro and others.[5] Then in the three rows behind the defined zone, we mixed scalp with beard hair in the ratio of 2:1 for a more natural look, while in the forelock area, we mixed scalp with beard 1:1 for more fullness. Similarly, in the mid-scalp area, we placed the remaining beard hair mixed with scalp hair follicles roughly in the ratio of 3:1. We did not cover the crown in younger patients, we advised them to initiate medical therapy. Figure 1A depicts scalp hair placement and Figure 1B depicts beard hair placement showing the planning of combination grafting. Figure 1C shows the actual plan drawn and executed on the patient's scalp.

In **Norwood grade V** baldness, 4,000-5,000 grafts were planned. In a single harvesting, either by FUT or FUE, we harvested 2,000-3,000 grafts from the scalp donor area and the remaining from the beard and/or chest. Planning of placement with mixing of the scalp to body ratio remained the same as explained in grade IV, only that the remaining body hair was placed in the mid-scalp area. The above procedure was done over two consecutive days. All scalp hair follicles were inserted on day 1 leaving space for beard/other body hair follicles for the next day. On the second day, body hair follicles were harvested and inserted in the gaps left between the scalp hair follicles. (See Figure 2.)

FIGURE 1. *A:* After hair follicle insertion in Norwood grade IV, *B:* after beard hair follicle insertion, *C:* planning of combination transplantation (scalp + beard)

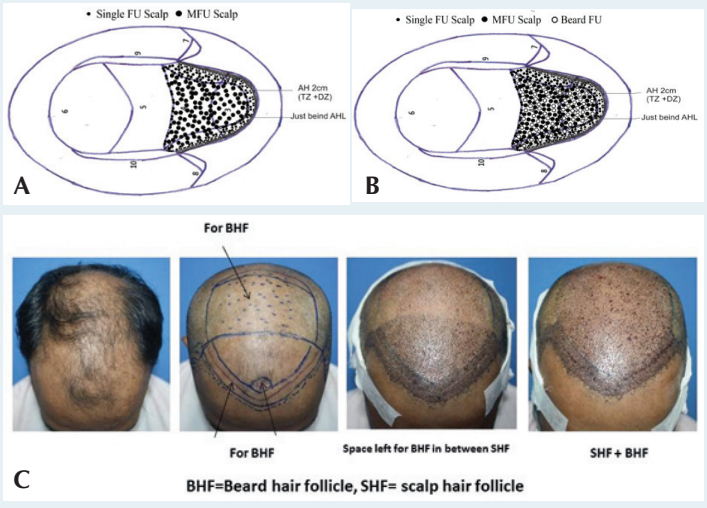


FIGURE 2. Planning of scalp and beard hair follicles in Norwood grade V

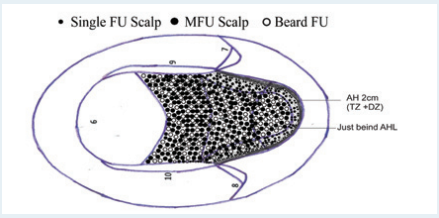


FIGURE 3. Grade VI planning

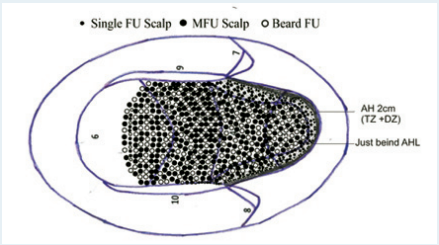
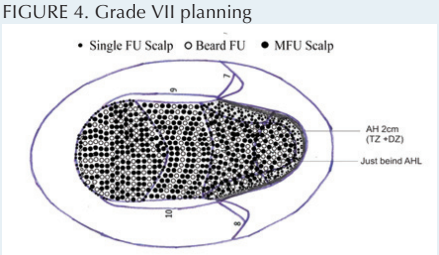


FIGURE 4. Grade VII planning



In **grades VI and VII**, a detailed master plan of recipient and donor areas was done after discussion with the patient. The total amount of FUs to be transplanted were calculated and the number of follicles harvested from each area in multiple stages was planned as explained below (Figures 3 and 4):

- Routinely, we transplant 6,000-7,000 grafts for grade VI loss depending on donor availability and the number of grafts the patient desires. Out of this total, we harvest 4,500-5,000 from the scalp in multiple stages and the remaining from the beard and other body parts.
- In the first session, two consecutive days are planned. A total of 5,000 grafts are harvested to transplant from the hairline to the vertex transition point. Out of these grafts, 2,500-3,000 are harvested from the scalp and the remaining from the beard or other body parts. The planning of graft distribution in the front area remains the same as described in grades IV and V, and the remaining area of the scalp is done mixing scalp hair with beard hair.
- If a patient wants further sessions, a minimum 4-month delay is recommended. It may be a 1- or 2-day harvesting session. On any given day, we do not harvest from more than two body areas and all precautions are taken that the dose of anaesthetic agent remains within safe limits.

In **grade VII**, we transplant 7,000-8,000 grafts in multiple sessions. Planning remains the same as in Norwood grade VI.

RESULTS

See Figures 5-9 on the next page, which show overall results for each case.

PAGE 222

CONTINUED FROM PAGE 221

FIGURE 5. Case I, Grade IV

Total grafts - 3,017, Scalp - 2,493, Beard - 524, Single day

FIGURE 6. Case II, DPHL/Diffuse Pattern Hair Loss

Total grafts - 5,119, Scalp - 3,112, Beard - 2,007, Two days

FIGURE 7. Case III, Grade VI

Total grafts - 4,900, Scalp - 2,996, Beard - 1,904, Two days

FIGURE 8. Case IV, Grade VII

Total grafts - 8,017, Scalp - 4,007, Beard - 3,010, Chest - 1,000, Days 2 + 2

FIGURE 9. Case V

Total grafts - 5,200, Scalp - 3,207, Beard - 1,993, Two days

Discussion

The total scalp hair-bearing area is approximately 520cm^2 (Bernstein and Rassman[6,8]), and from this, around 200cm^2 is usually the safe donor area (Cole[7-9]), the remaining area is approximately 300cm^2, which is androgen dependent and vulnerable to alopecia. To give the visual effect of reasonable density, we ideally need to transplant 30-40 grafts per square centimeter in this 300cm^2 area. For this, we need around 9,000 grafts. As per standard calculation, the total graft number in the safe scalp donor area is 12,500, and out of this, we can safely harvest 6,000 grafts. So there is a deficit of approximately 3,000 grafts to cover hair loss in the grade VII patient. This deficit can only be covered by using additional non-scalp hair follicles (i.e., body hair follicles). By presuming that any patient presenting at grade IV or above has the chance to progress to grade VII, we might need up to 9,000 grafts in total to cover the hair loss in the future. But certainly this calculation demands the search for non-scalp donor area. Body hair of around 3,000 FUs and above can be harvested from the beard, chest, and extremities as per the requirement and availability. Even in patients who wish to keep a beard, we design what shape of beard they would like to have and then harvest from the remaining area. We have not used donor hair from the extremities.

Alternatively, there are steps to make up the deficit, such as planning a higher anterior hairline, avoiding transplanting in the crown and temporal triangle, or using gradient density and scalp micropigmentation.

The term "mixed grafting"[3,4] was used for a hair transplant procedure in which FUs along with multi-follicular unit grafts (MUGs) were implanted to increase density and reduce implantation and overall surgical timing. The main advantage was better density, but when not done properly there could be cosmetic compromise as proper planning of placement of MUGs with FUs is very important. This used to be a problem in the era of MUGs, but then micro-grafting was developed that improved the cosmetic appearance, so MUGs almost disappeared. Still, the need for higher density could not be overlooked. Recombinant grafting[15] and high-density grafting[10,11] have their own advantages and disadvantages: high-density grafting adversely affects graft survival and recombinant grafting needs a greater number of donor hair follicles.

The advantage of body hair follicles is that they are non-scalp donor hair follicles. Beard hair is thicker, giving a better illusion of density. Hair from other body areas certainly increases the density and is better than scalp micropigmentation.

We plan for body hair transplantation even at the first hair transplant procedure so a proper scalp and body hair "combination grafting" is planned and scalp hair is preserved

for future use. In Norwood grade IV cases, as narrated, we transplant a total of 2,500-3,000 grafts, and out of this, we harvest 2,000 follicles from the scalp and the remaining from the beard and place them just behind the hairline, forelock, and mid-scalp. We have seen very encouraging results in terms of visual density.

Similarly, the use of chest hair is good for the mid-scalp and crown along with the beard and scalp hair. Chest hair is thinner compared to beard and scalp hair, but because of the curl of chest hair, the resulting visual density is reasonable and certainly better than doing scalp micropigmentation. Another area yielding good quality of hair is the pubic area, for which patients often opt if harvesting is done by FUE.

Studies by Kim,[12,13] Hwang,[12,13] and Lee[14] show that when body hair is transplanted to the scalp, the thickness remains unchanged, but they become longer and the growth rate also increases. We have been harvesting body hair for more than three years using Cole Instruments 0.75 and 0.80mm sharp serrounded punches for beard, chest, and abdomen hair, but we have no experience with hair from the extremities. In the last two cases where chest and abdomen hair were very curly and long, we used a 0.9mm flared punch and this reduced transection. We evaluated beard and chest donor hair for density and thickness.

Patient satisfaction with body hair is very high. In our series, in almost all cases, body hair after transplantation did not go into anagen effluvium (no comparative study done). The transplants were frizzy and dry initially but improved over two years. In our experience, chest hair growth appeared to be slower (no comparative study, just an observation).

CONCLUSION

"Combination grafting" is a good method for treating extensive hair loss as well as enhancing the results of hair transplantation in suitable patients.

With experience, the physician can overcome technical challenges of body hair harvesting such as anesthesia, harvesting speed, and transection, and can perform body hair harvesting as a good adjunct to hair transplantation.

References

1. Cole, J. Donor Area Harvesting Body to Scalp. In: W.P. Unger and R. Shapiro, eds. *Hair Transplantation*, 5th Ed. London: Informa Healthcare, 2011; pp. 304-305.
2. Yu, J.M., and A.Y. Yu. Donor Area Harvesting Beard to Scalp. In: W.P. Unger and R. Shapiro, eds. *Hair Transplantation*, 5th Ed. London: Informa Healthcare, 2011; pp. 300-302.
3. Unger, W.P. Why Mixed Grafting: Follicular Units and Multi-Follicular Unit Grafts. *Hair Transplantation*, 4th Ed. New York: Marcel Decker, 2004; p. 477.
4. Ibid. p. 488.
5. Shapiro, R. Principles of creating a natural hairline. In: W.P. Unger, ed. *Hair Transplantation*, 5th Ed. London: Informa Healthcare, 2011; pp. 373-382.
6. Bernstein, R.M., et al. Standardizing the classification and description of follicular unit transplantation and mini-/micro grafting techniques. *Dermatol Surg.* 1998; 24:957-963.
7. Cole, J., and J. Devroye. A calculated look at the donor area. *Hair Transplant Forum Int'l.* 2001; 11(5):150-154.
8. Jimenez, F., and J.M. Ruifernandez. Distribution of human hair in follicular units: a mathematical model for estimating the donor size in follicular unit transplantation. *Dermatol Surg.* 1999; 25:294-298.
9. Unger, W., et al. Delineating the "safe" donor area for hair transplanting. *Am J Cosm Surg.* 1994; 11:239-243.
10. Mayer, M., et al. Graft Density Production Curve with Dense Packing. Presented at the Annual Meeting of the International Society of Hair Restoration Surgery. Sydney, Australia; August 24-28, 2005.
11. Nakatsui, T., et al. Survival of densely packed follicular unit grafts using the lateral slit technique. *Dermatol Surg.* 2008; 34:10161025.
12. Hwang, S., et al. Does the recipient site influence the hair growth characteristics in hair transplantation? *Dermatol Surg.* 2002; 28:795-799.
13. Hwang, S., et al. Recipient-site influence in hair transplantation: a confirmative study. *Dermatol Surg.* 2009; 35:1011-1014.
14. Lee, S.H., et al. The changes in hair growth pattern after autologous hair transplantation. *Dermatol Surg.* 1999; 25:605-609.
15. Harris, J.A. Recombinant Follicular Transplantation. In: W.P. Unger and R. Shapiro, eds. *Hair Transplantation*, 5th Ed. London: Informa Healthcare, 2011; p. 371. ■