Hair transplantation: Standard guidelines of care

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ABSTRACT

Hair transplantation is a surgical method of hair restoration. **Physician qualification**: The physician performing hair transplantation should have completed post graduation training in dermatology; he should have adequate background training in dermatosurgery at a centre that provides education training in cutaneous surgery. In addition, he should obtain specific hair transplantation training or experience at the surgical table(hands on) under the supervision of an appropriately trained and experienced hair transplant surgeon. In addition to the surgical technique, training should include instruction in local anesthesia and emergency resuscitation and care. **Facility**: Hair transplantation can be performed safely in an outpatient day case dermatosurgical facility. The day case theatre should be equipped with facilities for monitoring and handling emergencies. A plan for handling emergencies should be in place and all nursing staff should be familiar with the emergency plan. It is preferable, but not mandatory to have a standby anesthetist. **Indication for hair transplantation** is pattern hair loss in males and also in females. In female pattern hair loss, investigations to rule out any underlying cause for hair loss such as anemia and thyroid deficiency should be carried out. Hair transplantation can also be performed in selected cases of scarring alopecia, eyebrows and eye lashes, by experienced surgeons. **Preoperative counseling and informed consent**:Detailed consent form listing details about the procedure and possible complications should be signed by the patient. The consent form should specifically state the limitations of the procedure and if more procedures are needed for proper results, it should be clearly mentioned. Patient should be provided with adequate opportunity to seek information through brochures, computer presentations, and personal discussions. Need for concomitant medical therapy should be emphasized. Patients should understand that proper hair growth can be expected after about 9 months after transplantation. **Preoperative laboratory studies** to be performed include Hb%, blood counts including platelet count, bleeding and clotting time (or prothrombin time and activated partial thromboplastin time), blood chemistry profile including sugar. **Methods**: Follicular unit hair transplantation is the gold standard method of hair transplantation; it preserves the natural architecture of the hair units and gives natural results. Mini-micro-grafting is a method hair transplantation involving randomly assorted groups of hairs, with out consideration of their natural configuration of follicular units, under loupe or naked eye examination. Mini-grafts consist of 4-5-6 hairs while micro-grafts consist of 1-3 hairs. Punch gives ugly cosmetically unacceptable results and should no longer be used. **Patient Selection**: Hair transplantation can be performed

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Evidence - Level A- Strong research-based evidence- Multiple relevant, high-quality scientific studies with homogeneous results, Level B- Moderate research-based evidence- At least one relevant, high-quality study or multiple adequate studies, Level C- Limited research-based evidence- At least one adequate scientific study, Level D- No research-based evidence- Based on expert panel evaluation of other information

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in any person with pattern hair loss, with good donor area, in good general health and reasonable expectations. Caution should be exercised in, very young patients whose early alopecia is still evolving, patients with Norwood grade VI or VII with poor density, patients with unrealistic expectations, and patients with significant systemic health problems. **Medical therapy:** Most patients will need concurrent medical treatment since the process of pattern hair loss is progressive and may affect the remaining hairs. **Manpower**: Hair transplantation is a team effort. Particularly, performing large sessions, needs a well trained team of trained assistants. **Anesthesia:** 2% lignocaine with adrenaline is generally used for anesthesia; tumescent technique is preferred. Bupivacaine has been used by some authors in view of its prolonged duration of action. **Donor dissection**: Strip dissection by single blade is recommended for donor area. **Steromicroscopic dissection** is recommended for dissection of hair units in follicular unit transplantation; mini-micro-grafting does not need microscopic dissection. **Recipient insertion**: Different techniques and different instruments have been used for recipient site creation ;these depend on the choice of the operating surgeon and have been described in the guidelines. **Graft preservation** is important to ensure survival. **Density**: Minimum density of 35-45 units per sq cm is recommended. Results depend on donor characteristics, technique used and individual skills of the surgeon

Key Words: Hair loss, Alopecia, Minigrafts, Micrografts, Single hair transplant, Hair unit transplant

EXPLANATION AND EVIDENCE FOR THE RECOMMENDED GUIDELINES FOR HAIR TRANSPLANTATION

INTRODUCTION

Hair transplantation has become popular in recent years as a method of treating male pattern hair loss. Medical treatment with drugs such as minoxidil, finasteride and dutasteride play a vital role in treating hair loss in addition to surgical treatments. Surgical hair restoration has had a chequred history, with the era of the punch transplants leaving a stigma on the technique. However recent techniques, such as follicular unit transplantation by mega sessions have restored much respectability to this methodology and it is now possible, by a properly trained and experienced team to give highly satisfactory cosmetic results.

RATIONALE AND SCOPE

The technique is still evolving and there is much variation in the techniques being followed by different surgeons. Evidence in the form of controlled data is not available for all techniques being used; an attempt is here made to summarize standard protocols with the available evidence. As hair transplantation is a procedure depending on the surgical skill of the team, much depends on the needs of the individual patients and the view of the operating surgeon. It should be understood that these recommendations are by no means binding and universal, and as in all surgical techniques, variations in techniques are possible.

DEFINITION

Hair transplantation involves relocation or transfer of hairs from the occipital area to the bald area.

Follicular unit hair transplantation is a surgical treatment of baldness in which follicular units of hair, (consisting of naturally occurring bundles of hairs), are dissected under a stereomicroscope and transplanted in the bald area so as to give natural look.

Mini-micro-grafting is a method hair transplantation involving randomly assorted groups of hairs, with out consideration of their natural configuration of follicular units, under loupe or naked eye examination. Mini-grafts consist of 4-5-6 hairs while micro-grafts consist of 1-3 hairs.

Punch transplantation is a method of hair transplantation using punch grafts extracted from occipital area and transplanted in to recipient sites created by punches. This method gives ugly cosmetically unacceptable results and should no longer be used.

EVIDENCE: LEVEL B

The History of hair transplantation Walter P. Unger, Dermatol Surge 2002, 28; 11, 1035-1042

Bernstein RM, Rassman WR, Seager D, Shapiro R, *et al*.: Standardizing the classification and description of follicular unit transplantation and mini-micro grafting techniques. Dermatol Surg 1998; 24:957-963,

Headington JT: Transverse microscopic anatomy of the human scalp. Archives of Dermatology 1984; 120:449-456,

Jimenez F, Rui Fernandez J. Distribution of human hair in follicular units. Dermatol Surg 1999; 25:294, 8.

RATIONALE OF HAIR TRANSPLANTATION

1. Occipital area is unaffected by balding process and

the hairs in this region last a life time; i.e. they are permanent. Since Male pattern hair loss shows donor dominance, they can be relocated to the bald area where they will grow in a normal pattern

EVIDENCE: LEVEL A

Alfredo Rebora. Pathogenesis of androgenetic alopecia Am Acad Dermatol 2004: 50; 5; 777-779
Orentreich N: Autografts in alopecias and other selected dermatological conditions. Annals of the New York Academy of Sciences 1959; 83:463-479
Whiting DA; Possible mechanisms of miniaturization during androgenetic alopecia or pattern hair loss. J Am Acad Dermatol September 2001, part 2 ¥ Volume 45 ¥ Number 3 S81-86

2. Follicular unit transplantation preserves the normal pattern of the patient. Follicular units allow graft placement in smaller recipient sites, as the units have roughly the same size irrespective of the number of hairs in them; so dense packing is possible and this yields satisfactory cosmetic appearance. Hence this method is presently considered the gold standard method of hair transplantation.
3. However, follicular unit transplantation has the disadvantages of being slower, needing a bigger team of trained assistants and being more expensive. Hence many experts have continued to perform mini-micro-grafting or combination grafting (combining mini-grafts with follicular unit grafts) with satisfactory results as an alternative.

EVIDENCE: LEVEL A

Headington JT: Transverse microscopic anatomy of the human scalp. Archives of Dermatology 1984; 120:449-456,
Jimenez F, Rui Fernandez J. Distribution of human hair in follicular units. Dermatol Surg 1999; 25:294, 8.
Stough DM, Whitworth JM Methodology of follicular unit hair transplantation Derm Clin 1999; 17; 2; 287-306
Bernstein RM, Rassman WR The Logic of Follicular Unit Transplantation. Dermatol Clinics, 1999; 17; 2: 277-295
Bernstein RM, Rassman WR. Follicular unit hair transplantation Dermatol Surg: 1997; 23; 771-784

INDICATIONS AND PATIENT SELECTION

Accepted indications include Androgenetic alopecia both in males and females. In females, the procedure should be undertaken after appropriate investigations to rule out underlying causes such as iron deficiency, thyroid disorders, other hormonal imbalances etc. The procedure may be performed in expert hands in the following special indications:

1. Eyebrow, beard, moustache reconstruction
2. Selected cases of Scarring alopecia
3. Eyelash transplantation

Patient Selection: Hair restoration can be performed in any person with pattern hair loss, with good donor area, in good general health and reasonable expectations. Caution should be exercised in:

- Young patients whose early alopecia which is still evolving
- patients with Norwood grade VI or VII with poor density
- Patients Unrealistic expectations
- Patients with Significant systemic health problems

EVIDENCE: LEVEL B

Bernstein RM, Rassman WR: Follicular Transplantation: Patient Evaluation and Surgical Planning. Dermatol Surg 1997; 23:771-784
Chartier MB, Hoss DM Grant-Kels JM. Approach to the adult female patient with diffuse nonscarring alopecia J Am Acad Dermatol 2002 47: 6
Marritt E. Transplantation of single hairs from the scalp as eyelashes. Review of literature and a case report. J Dermatol Surg Oncol 1980; 6: 271-3.
Muawyah D. Al-Bdour. Eyebrow to eyelid cilia transplant: a case report. Case Rep Clin Pract Rev 2005; 6: 351-353

INFORMED CONSENT

Informed consent should be obtained after detailed counseling session which should include:

a) discussion on the process of pattern hair loss, and different management options available
b) detailed explanation about the surgical procedure, possible postoperative complications
c) specific instructions that results would be seen only after 8-9 months
d) In young patients specific instruction that the existing hair may be lost in future and that continued drug therapy is necessary to preserve existing hair.
e) Patients should not expect to get the same amount of hair that they had before balding.
f) Patients should understand that hair transplantation is a cosmetic procedure and will not affect the underlying process of baldness, which may continue in future.
g) Any allergies or medical condition that the patient may have, should be recorded.

Need for medical treatment

Most patients will need concurrent medical treatment since the process of pattern hair loss is progressive and may

affect the remaining hairs. Patients should understand that the currently available drugs, finasteride, dutasteride and minoxidil need to be taken for long periods of time, without any definite time limit. This is particularly so in young patients, who need to be counseled properly, as compliance in these patients with drug therapy is poor.

EVIDENCE: LEVEL A

Bouhanna EP. Androgenetic Alopecia: Combining Medical and Surgical Treatments Dermatol Surg. 2002; 28; 02;E;136-142
Avram MR, E Cole JP, E ChaseC, GandelmanE M E, E Haber, E Knudsen RE E *et al*
The Potential Role of Minoxidil in the Hair Transplantation Setting E Dermatol SurgE: 2002;28: 10; 894-900.

MANPOWER REQUIREMENTS

Hair transplantation is a technique oriented procedure; skilled manpower is a basic requirement. Scalp is a site which bleeds heavily and the surgeon needs to be competent in the procedure. Hair transplantation, particularly donor dissection, needs appropriate surgical skills, which may not be part of routine postgraduate training in dermatology. Hence, Dermatological surgeon performing hair transplantation needs to have appropriate " In theatre" or " Hands on" training in the procedure, in a centre that routinely performs the procedure, under a surgeon who has the required experience and expertise in the procedure.

Hair transplantation is a team effort. Particularly, performing large sessions, needs a well trained team. Training of the team is a major exercise in organizing a transplant team and deserves particular attention. A team of assistants to cut the grafts and place the grafts in the recipient area is an absolute necessity to ensure large sessions. Most transplant sessions last up to 4-5 hours and team work is therefore essential

PREOPERATIVE CHECKLIST

These include:

1. Stop minoxidil 2 weeks prior to the procedure as it may increase bleeding.
2. Avoid alcohol 2 days before and after the procedure.
3. Preoperative tranquilizer in an anxious patient.
4. Avoiding smoking, NSAIDs at least 7 days prior to the surgery as these may increase bleeding.
5. Preoperative photographs; top, front, side and back views.

Preoperative laboratory studies to be performed include Hb%, blood counts including platelet count, bleeding and clotting time (or prothrombin time and activated partial thromboplastin time), blood chemistry profile including sugar. ECG , Antibodies for hepatitis B surface antigen and HIV screening tests may be performed if considered essential.

LOCAL ANESTHESIA

Two percent lignocaine with adrenaline is generally used for anesthesia. Bupivacaine has been used by some authors in view of its prolonged duration of action, usually in combination with lignocaine; however, its cardio toxicity is a concern and hence should be used carefully and if facilities for cardiac resuscitation are available. In addition, injection of tumescent saline solution with epinephrine has been generally, but not universally, recommended. Tumescence has the advantage that it produces vasoconstriction and reduces intraoperative bleeding. It also lifts the subcutis from the underlying vessels, and prevents damage to large vessels and nerves. There has been as yet no consensus as to the total dose of lignocaine that can be used in hair transplantation, though traditionally the upper limit has been accepted at 6-7mg/kg wt. However, because the donor strip is removed very soon after injection of the drug, preventing further systemic absorption, and most authors have felt that dosage in excess of 7 mg/kg is safe.(level C)

EVIDENCE: LEVEL C

Seager DJ, Simmons C. Local anesthesia in hair transplantation. Dermatol Surg. 2002;28:320-8.

MONITORING

Proper monitoring of the patient is important, as large amounts of lignocaine are used during the procedure and the procedure is prolonged. All emergency equipment including emergency drugs, intravenous fluids, ambu bag, oxygen cylinder are essential. A digital pulse oximeter is needed for proper monitoring. Presence of a doctor /nurse trained in emergency medical care and life support is desirable. It is recommended that standby anesthetist be available for any emergency requirement.

DONOR DISSECTION

Large punches should no longer be used to harvest donor hair. Single strip dissection, with strip centered around

occipital protuberance, is recommended. Though multi-bladed knife yields multiple strips and hence makes dissection easier, it also results in transection of hairs up to 20% and hence is to be avoided. A single strip is excised by elliptical excision. Width of the strip should preferably be about 1 cm though wider strips have been advocated by different authorities (level C). Width and the length also depends on the number of grafts needed and can be calculated by determining the density of follicular units by densitometer (level B).Tension and too much cauterization of vessels should be avoided while suturing to avoid a wide scar. Depth of dissection and undermining of the edges has been subject of much debate and at present no uniform recommendations can be made. However, deeper dissection and undermining is associated with greater risk of injury to vessels and therefore bleeding, needing greater surgical skills. Suturing of strip with sutures (either continuous or intermittent) or with staples may be performed, as each of these has its own advocates. Absorbable sutures such as monocryl (which gets absorbed in two weeks) can be used, particularly for outstation patients (level C).

EVIDENCE (LEVEL C)

Unger WP:Suturing of donor sites. In Unger WP,editor; Hair transplantation,New York:Marcel Dekke,1979. p. 64.
Seery GE. Hair transplantation: management of donor area. Dermatol Surg. 2002 ;28:136-42.
Brandy DA. Intricacies of the single-scar technique for donor harvesting in hair transplantation surgery. Dermatol Surg. 2004;30:837-44;
Bernstein RM, Rassman WR.A New Suture for Hair Transplantation:Poliglecaprone 25 Dermatol Surg 2001;27:5-11.
Brandy, D.A. New instrumentation for hair restoration surgery. Dermatol Surg, 1998;24:629 Ð 631
Bernstein RM. Measurements in Hair Restoration. Hair Transplant Forum International 1998;8:1-27
Chang SC. Estimation of number of grafts and donor area. Hair transplant Forum International 2001;11:101-3

DISSECTION OF HAIRS

The elliptical strip is first dissected in to small slivers of 1 or 2 follicular unit width (1-2 mm) under a stereomicroscope. This is a crucial step and needs microscopic dissection to avoid transection of hairs. The slivers are then dissected in to units of one, two or three or four hair units. It has been generally recognized that stereomicroscopic dissection is needed for proper identification and dissection to minimize transaction.(level B) However several surgeons from Asia have been performing excellent dissection for Asian hair, with out microscopic dissection(level C) In the authors' experience for Indian patients, dissection of slivers in to units can be performed, safely without significant transection, under loupe magnification, or even naked eyes, as the roots are pigmented (personal observation; level D). Whether the grafts should be skinny(thin) or chubby(thick with a little amount of dermis around them) is a matter of debate. Skinny grafts need smaller recipient sites, and can be packed densely, but very fine dissection, has the risk of damaging arrectores muscle, sebaceous glands and telogen hairs, which may be important in hair growth. Skinny grafts also need more careful handling to avoid damage. Grafts are very susceptible for drying and hence they should be kept in cold saline. (level B)Dissection of hairs is a skilled job, needing proper training for the dissectors. Proper lighting and seating arrangements for the dissecting team is important to ensure proper visualization and to avoid fatigue.

EVIDENCE

Seager D: Binocular stereoscopic dissecting microscopes: should we use them? Hair Transplant Forum International1996;6:2-5,
Bernstein RM, Rassman WR: Dissecting microscope vs. magnifying loops with transillumination in the preparation of follicular unit grafts: A bilateral controlled study. Dermatol Surg 1998 24: 875-880.
Cooley J, Vogel J. Loss of the dermal papilla during graft dissection and placement: Another cause of x-factor? Hair Transplant Forum Int 1997; 7:20-21.
Kurata S, Ezaki T, ItamiES, Terashi H TakayusuEH. Viability of Isolated Single hair Follicles Preserved at 4iC Dermatol Surg 1999;25(01); 26-29
Raposio E, Cella A, Panarese P, Mantero S, Rolf E. Nordstrom A *et al* Effects of Cooling Micrografts in hair transplantation Surgery. Dermatol Surg. 2001;27(01), 98-98
Saeger D. chubby vs. skinny Dermatol Surg 1997;23: 757Ð61
Beehner M. A comparison of hair growth between follicular-unit grafts trimmed ÒskinnyÓ vs. Òchubby.Ó Dermatol surg 1999;09:16.
Cooley J, Vogel J. Loss of the dermal papilla during graft dissection and placement: Another cause of x-factor? Hair Transplant Forum Int 1997; 7:20-21.

RECIPIENT SITE-GRAFT INSERTION

There are several methods for insertion;

a) 'stick and place method' which involves making a recipient site, followed immediately by insertion of hairs in to the recipient sites by an assistant
b) creating all the required recipient sites at one time, and then placing the grafts one by one
c) use of implanters such as Choi or KNU implanters

Each of the methods has its advocates and any of these can be used by the surgeon as per his expertise. Different

instruments such as NoKor needles (size 16 for three hair units, size 18 for two hair units), 18/19 size needles (for 1-2 hair units), and blades of different sizes are used, each with its own advocates (level C). Punches are not generally preferred for creating recipient sites.

EVIDENCE: LEVEL C

Brandy, D.A., Meshkin, M., "Utilization of No-Kor Vented Needles for Slit-Micrografts. " J Dermatol Surg Onc 1994. 20:336 - 339,
Arnold J: Mini-blades and a Mini-blade Handle for Hair Transplantation. Am J Cosm Surg 1997; 14(2): 195-200.
Yung Chul Choi and Jung Chul Kim: Single hair transplantation using the Choi hair transplanter. J. Dermatol. Surg. Oncol., 1992. 18:945-948
Brandy DA. A Technique for Hair-Grafting in Between Existing Follicles in Patients with Early Pattern Baldness. Dermatol Surg;2002: 26: 08;801-805.
Unger W. Different grafts for different purposes. Dermatol surg 1997;14:177, 83.
Haddab AM, Kohn T, Sidloi M Effect of Graft Size, Angle, and Intergraft Distance on Dense Packing in hair Transplants. Dermatol Surg. 2004;30(06); 846-856

DENSITY IN HAIR TRANSPLANTATION

There is much debate on the desired density in hair transplantation. While it is generally agreed that minimum density required for good cosmetic results is about 35-40/ sq cm, several teams have claimed higher density, up to 55 and even 70 / sq cm (level C)

EVIDENCE: LEVEL C

Limmer B. The density issue in hair transplantation. 1997;23:747, 50.
Unger WP. Density issue in hair transplantation. Dermatol Surg: 1998;297Ð297
Marritt EE. The Death of the Density Debate Dermatol Surg 1999; 25; 08;654-660
Brandy DA The Art of Mixing Follicular Units and Follicular Grouping in hair Restoration Dermatol Surg; 2002: 28, 04, 320-328
Haddab AM, Kohn T, Sidloi M Effect of Graft Size, Angle, and Intergraft Distance on Dense Packing in hair Transplants. Dermatol Surg. 2004;30(06); 846-856

MEGA SESSIONS

Definition of mega-sessions has varied with time as the capability of transplant teams to graft larger number of grafts improves. While five years back, a session in which more than 1000 units were grafted was called mega sessions, currently most established teams can transplant in excess of 2000 grafts in a single session. Transplanting large number of graft sessions has definite advantages:

1. Avoids multiple surgeries and resulting absence from work.
2. In multiple grafts, the first graft always yields the best results
3. Large session economizes donor supply.

For these reasons, small session, though technically easy, are discouraged and large sessions are performed in most centers worldwide.

EVIDENCE: LEVEL B

Rassman WR, Carson S. Micrografting in extensive quantities; the ideal hair restoration procedure. Dermatol Surg.1995;21(4):306Ð311.
Uebel CO: The punctiform technique with the 1000-graft session. In Stough DB, Haber RS (eds): Hair Transplantation: Surgical and Medical. St. Louis, Mosby-Year Book, Inc. 1996, 172-177
Limmer BL. Thoughts on the extensive micrografting technique in hair transplantation. Dermatol surg: 1996;06:16; 8.

Factors determining outcome in hair transplantation

Several factors can affect the outcome in hair transplantation. These include:

1. Hair density
2. Hair diameter
3. Colour of hair:
4. Curly hair

These factors need to be taken in to account while planning transplantation and also need to be explained to the patient during counseling session.

EVIDENCE: LEVEL B

Bernstein RM, Rassman WR: The Aesthetics of Follicular Transplantation. Dermatol Surg; 1997 23:785-79.
Bernstein RM. Measurements in Hair Restoration. Hair Transplant Forum International; 1998:8;1-27
Chang SC. Estimation of number of grafts and donor area. Hair transplant Forum International 2001:11;4;101-3

Postoperative instructions and complications

Postoperative care includes administration of appropriate antibiotics and analgesics. Complications are infrequent. Swelling over forehead may occur on day 3 of surgery, due to edema and the result of large amount of saline being injected during anesthesia. This is temporary and can be managed with ice compresses. Use of intradermal triamcinolone acetonide and short course of oral steroids has been advocated (level C). Infection and keloid formation are rare if proper procedures are

followed. Drug induced gastritis, persistence of crust at the recipient sites, persistent pain at door site, sterile pustules during 2nd month (caused by irritant reaction during hair growth) are some of the other frequent complications. Delayed hair growth is another complication which can happen.

EVIDENCE: LEVEL C

David Perez Meza. Complications in Hair Restoration Surgery. Hair Transplant Forum Int 2000; 10(5);5

Bernstein RM,Rassman WR. What is Delayed Growth? Hair Transplant Forum Int, 1997. 7(2);22

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The authors are indebted to Dr. Bryan Nobay for his inputs while preparing these guidelines.

SUMMARY

Hair transplantation is a rapidly evolving technique; while several steps have standardized procedures, many variations are being used by different surgeons. The procedure is a skill oriented technique and hence different results may be obtained by different procedures or even same procedure by different surgeons. Proper training of both the surgeon and the assisting team is therefore essential for good results.

CONSENT FORM FOR HAIR TRANSPLATION

I named _____, aged _____ years, address_____
_____ Permanent address (If different) _____
_____Telephone: (Resi)_____ (Mobile)_____
(Friend/parents)_____ Email_____have been advised to under go hair transplantation.

I also state that I have understood the following information:

1. I have understood the baldness that I have, is mediated by male hormones.
2. I am aware that hair transplation is only a cosmetic procedure and have been involved in decision making about the choice of treatment.
3. I understand that while every effort will be made by the operating doctors to ensure optimum result, a number of variable do exists and hence optimum results cannot always be guaranteed.
4. I have been explained that I will not have and cannot expect that I will have a full head after surgery. I understand that transplants are not perfect.
5. I am aware that the procedure will be performed under local anesthesia and give consent for the same.
6. I have been explained and understood the procedure of the surgery as follows:
   a) The posterior scalp will serve as the donor area. A strip of skin will be removed and sutured; I understand that there will be a scar in this area.
   b) The hairs from the donor area will be dissected and implanted on the bald area using special instruments.
   c) I have been explained about the possible complications that may occur during and after the procedure; i) postoperative swelling of forehead on days 3-5, ii) suture will persist for 2 weeks. iii) Pustules / boils/pimple like lesions in 2-3 months. I have also been explained that keloids, complication in any surgery, may occur after transplants.
   d) I have been shown chart/brochure about the procedure and hair loss, which I have understood.
7. I am aware that after the procedure, there may be a period of temporary hair loss. And that it may take 9-10 months after surgery for proper hair growth.
8. I have been explained that I may need _____no of operations for optimum cosmetic results. I am aware that good results will depend upon the necessary number of operation sessions to be undergone.
9. I am aware that the process of baldness may continue after the surgery in other areas of the scalp, which may affected the ultimate appearance. Also thinning of hair is a natural phenomenon, which occurs with age. I may need to take drugs to prevent further hair loss.

I have fully understood the above information after reading it/being transplanted the same by _____. I hereby give consent for DR._____to perform the procedure and any other medical service that may become necessary during the procedure.

The consent form has been signed by when I was not under the influence of any drugs

1. Have you had any surgery before? Yes / no
2. Have you had local anesthesia before? Yes / no
3. Did you have tooth extraction before? Yes / no
4. Did you have any injury/wound, which was sutured? Yes / no

5.	Did you have any problem with bleeding?	Yes / no
6.	Did you have stomach acidity problem?	Yes / no
7.	Do you smoke? If so how much?	Yes / no
8.	Do you drink alcohol? If so how much?	Yes / no
9.	Do you drink excess of tea / coffee?	Yes / no
10.	Do you have diabetes / asthma/any other disease?	Yes / no
11.	Have you recently taken injection tetanus toxoid in last 6 months ?	Yes / no
12.	Do you faint when seeing blood? Are you nervous person?	Yes/No
13.	Will you be able to come for stitch removal after 12 days?	Yes/No
14.	Have you received pre-op, post-op instruction sheet?	Yes/No

Patient's signature_____ Doctor's Signature_____

Date:

Witness Signature_____