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Inside this issue

Wound healing for the hair transplant surgeon

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Introduction

As hair transplant surgeons, we often perseverate on aesthetic placement of grafts. However, getting grafts to grow optimally through effective wound healing is key to getting these good results whether one is discussing the donor area or the recipient zones.

Historically speaking, hair transplantation surgery was treated much like any other post-operative wound. The days of the whole head dressings, weeks of antibiotics, and punch grafts healing via secondary intention will bring a shudder of recognition to the experienced surgeon. More recently, the focus on minimally invasive techniques, scar minimization (through trichophytic closure and FUE most notably), and maintaining a moist (not wet OR dry) environment has improved both the wounds themselves and the patient experience. Without delving into extreme cases of poor wound healing, infection, or rare complications, following is an overview of the process and a point-by-point guide to optimizing wound care for your hair transplant patients.

Physiology of Wound Healing: A Quick Review

It is clear that for all wounds, achieving the optimal wound moisture balance is fundamental for optimal healing. Too wet and a wound gets macerated, too dry and reepithelialization is impeded and scar formation is encouraged (Figure 1).

Wounds for recipient sites, FUE, or traditional "strip" surgery are full-thickness wounds, and both granulation and contraction are a part of their healing process (Photo 1). It should be noted that trichophytic incisions are technically a partial-thickness wound with reepithelialization as the primary healing modality.

The acute period of wound healing lasts about 2 weeks and is divided into three phases. The *inflammatory phase* is the first and involves macrophage and neutrophil migration within the first 72 hours. Fibroblasts (and other inflammatory cells) will be activated by the damaged cells in the area. Vasodilation will permit these additional inflammatory cells to migrate to the area during this time, and fibroblasts will start to create the collagen structure. This means that from the moment the surgeon takes a strip or starts an FUE surgical process, the patient's "wound healing" clock is ticking (Figure 2A).

The second stage is the *proliferative phase* and for a hair surgeon the majority of this phase occurs out of the office and out of direct control. Neutrophil numbers decline and fibroblasts and epidermal cells perform the majority of the wound healing processes including collagen matrix formation and closing of the wound itself. The matrix is an essential structural component, allowing the rest of the cells (keratinocytes and epithelial cells for instance) to migrate to where they are needed and then proliferate. This phase is where maintaining an adequate moisture balance (and occlusion if possible) is also essential because reepithelialization occurs fastest in moist, occluded wounds. Revascularization also occurs during this period (Figure 2B.)

The third and final stage is *remodeling,* which is characterized by fibroblast activity that re-works the collagen matrix over time and myofibroblasts that create wound contraction. This collagen matrix is particularly interesting, with new therapies to encourage its formation gaining

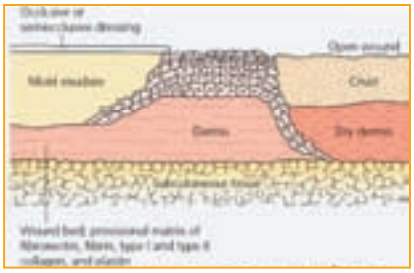

Figure 1. Occlusive dressing. The effects of tissue humidity on reepithelialization are shown. Occlusive dressings allow epithelialization to occur at the wound surface. In open wounds, the epithelium migrates beneath a desiccated crust and devitalized dermis. ©*2010 Elsevier Inc. Habif: Clinical Dermatology, 5th Edition*

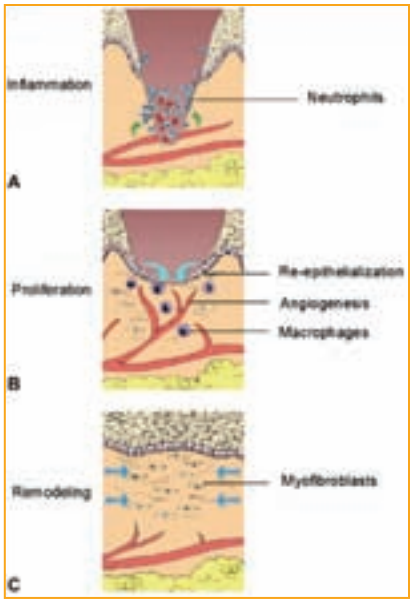

Figure 2. *A:* Inflammation; *B:* Proliferation; *C:* Remodeling. *From Habif: Clinical Dermatology, 5th Edition.*

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President's Message

Jennifer H. Martinick, MBBS *Perth, Australia* *jennifer@martinick.com*

Keeping our place in the sun

As members of the ISHRS, we enjoy a well-earned place in the sun.

Our highly respected reputation, which should never be taken for granted, is greatly the result of hard work, in particularly that of our senior members. But while the ISHRS is an unchallengeable authority on surgical hair restoration, we must acknowledge that we face threats from a growing number of non-medical parties trying to piggyback on our success.

Ironically, the very hard work that members have put into creating the "gold standard" benchmark for hair transplantation, has put us on the radar of opportunists who want a piece of what they perceive to be a lucrative endless market. Unlike the physician members who have devoted so much towards delivering the "gold standard" for their patients, these non-medical parties invest far greater resources in marketing and promotion. This is generating an exponential increase in promotions for hair loss solutions—a worrying trend making observance of the principle caveat emptor especially imperative for the consumer.

But it's tricky for the buyer to beware when they are presented with such seemingly authoritative and ever-present promotions from non-medical parties who simply "don't know what they don't know" about our field of medicine. The facts are that the "gold standard" hair transplant, which is so natural looking in appearance, is only possible when created by the right medically trained hands. And hair loss patients must be cautioned that the full results of a hair transplant won't be completely visible to the doctor or patient until 10-12 months after the procedure.

True excellence in surgical hair restoration is dependent on many things. These include a physician's technical ability, their flair for executing their skills in an artistic fashion, and their dedication and compassion for the patient.

After investing in a medical education, physicians providing the "gold standard" must also train their own teams of supporting technicians and lead these people to maintain excellence in the operating room.

As we navigate the landscape of our rapidly changing social and economic environment, the ISHRS must be proactive and employ all the modern communication tools available to promote itself. In recognising this, our Communications & Public Education Committee has appointed an Integrated Communications Manager, Matt Batt. Matt, who has had significant experience and success in helping businesses adjust to the shifting media landscape, will work with us to cement our position as the worldwide authoritative voice on everything related to hair restoration surgery.

Shaped by the principles of fairness and honesty, our communications task will involve clearing up the plethora of misleading information on the Internet and empowering the public with the facts needed for selecting a doctor who produces consistently high-quality results. This will place the ISHRS in a stronger position to support the public in discerning between the ISHRS as the established authority and others who have a conflict of interest and/or may supply biased information.◆

INTERNATIONAL SOCIETY OF HAIR RESTORATION SURGERY

Vision: To establish the ISHRS as the leading unbiased authority in hair restoration surgery.

Mission: To achieve excellence in patient outcomes by promoting member education, international collegiality, research, ethics, and public awareness.

Co-editors' Messages

Nilofer P. Farjo, MBChB *Manchester, United Kingdom* editors@ISHRS.org

Now is the time of year when we put together our annual strategic plans, so with this in mind we had our first annual Vision Day for our staff. We have had staff days out in the past with the aim of team building but the purpose of Vision Day was to get the staff involved in our plans for 2012 and to set targets for the year. We also wanted to get them motivated to carry the company philosophy through to their work. A wise man gave us the theme for this event and our new company philosophy: the 3 D's—Design, Discipline, and Dedication—which we feel fits in very well with what we try to accomplish for our patients.

Design involves many things: the design of the information packs to your patients, whether it's in your website design or patient brochure; design of the clinic surroundings including the operating room; design of ergonomic workstations for staff; or design of the medical and surgical plan for your patient. Some of the things that we discussed in our staff workshop revolved around the consequences of poor planning or design. We have all attended the sessions at ISHRS meetings where cases of poor planning are presented, and more recently we have had sessions devoted to hairline design. The main thing that we wanted to get across was the importance of design in all aspects of what we do, and that we need to take pride in not just adequate design but in great design. After all, our patients rely on us to produce a result that is future-proof.

Discipline is our second mandate and is an extension of design as without being committed to both self-control and training to improve our behaviour we will not do our patients justice. Having a "bad day" is no excuse for not producing the best quality surgery that we can. The patient's innate healing is not something that we can alter to any great degree so we have to give the patient our best surgical skills to make the result the best that we possibly can. In our staff workshop, we reiterated the need for having a disciplined approach to our procedures by giving examples of cases that we can be proud of, and by also showing some cases where we could improve. I also showed the staff some cases where good placing discipline wasn't followed (not our cases) resulting in hairs along the hairline growing in variable directions with many compressed 2- and 3-haired grafts. Is this a result of lack of training by the doctor and technicians or is it down to our third D: dedication (or lack thereof)?

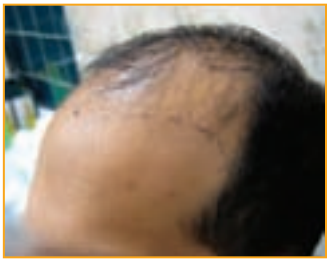
Dedication comes from taking pride in what we do. Seeing a happy patient 12 months after their surgery should give us a great feeling of achievement. At our Vision Day, we showed the staff some of the feedback we got from our patient survey that is filled out at the post-op visit. We use this survey to help us improve our standards so it is important for the employees to see how they have done over the past year. One patient recently wrote on their form that the only side effect from the surgery was a permanent grin! Wouldn't it be great if they all said that; it's certainly something to strive toward. The main message we wanted to pass on to our staff was that we want to see our patients again for years to come, but this will only happen if we are dedicated to their welfare and not just doing a job. Hair loss is for life so why not have the patient for life, too?◆

William H. Reed, MD *La Jolla, California, USA* editors@ISHRS.org

Ethics. Ethics? Nilofer and I are now entering our second year as editors of the *Forum*. For me, there have been several personal experiences that have been the result of the first year. For example, prior to becoming editor, my sense of "ethical" was that it was an issue that just ran in the background. Much like the judge who said of pornography, "I know it when I see it," I gave ethics little more thought as I had only myself to judge. Fear of my mother and, consequently, the belief that she raised me well allowed this approach to know right from wrong. As editor, however, I must be more objective when articles and their associated ethics are sent to us for publication. As a result, but always with reservations about having to judge others, I have rejected some articles and others, including in this month's issue, have been published.

Ironically, the day after thinking about the article and ethics mentioned, I had judgment and ethics turned 180 degrees with a consult by a 22-year-old whose photo you see. How young and how bald is too young and too bald for hair transplantation?

This young man met with me accompanied by his considerably older sister. We discussed the pros, the cons, and the unable-to-be-known aspects of hair restoration for well over an hour. His well-documented family history had a complete lack of vertex balding, yet the recession of his temporal wall raised concern that his balding could progress to a perimeter extending circumferentially around his head. His donor showed no abnormal amounts of miniaturization. It was discussed that there would be inadequate donor to re-create anything but an aggressive 3 vertex pattern whose hairline is drawn. This pattern has been what I have offered to any patient, regardless of age, when the adequacy of donor hair for the ultimate degree of balding is unknowable and a concern. Where the hairline is placed and how it frames the face varies with the individual's specific skull shape and facial proportions. The limiting factor is that the hairline must look sufficiently "realistic" with a vertex balding as large as with a Norwood VI or worse…, and gods help us if the donor density depletes.



When the young man remained interested, I was faced with the decision of either going with the beliefs that underlie my approach or reject him as a patient because "life is easier that way." What is the ethical decision? The "First Do No Harm" is too sophomoric in its convenient simplicity since no action, after all, is itself an action with harm inflicted in its own way. I'm sure there are proponents of both sides of this issue as was discussed in an earlier issue of the *Forum* on this subject. Are there hard and enduring points of reference so that ethical considerations are not always on a "slippery slope"?

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1. Articles should be written with the intent of sharing scientific information with the purpose of progressing the art and science of hair restoration and benefiting patient outcomes.
2. If results are presented, the medical regimen or surgical techniques that were used to obtain the results should be disclosed in detail.
3. Articles submitted with the sole purpose of promotion or marketing will not be accepted.
4. Authors should acknowledge all funding sources that supported their work as well as any relevant corporate affiliation.
5. Trademarked names should not be used to refer to devices or techniques, when possible.
6. Although we encourage submission of articles that may only contain the author's opinion for the purpose of stimulating thought, the editors may present such articles to colleagues who are experts in the particular area in question, for the purpose of obtaining rebuttal opinions to be published alongside the original article. Occasionally, a manuscript might be sent to an external reviewer, who will judge the manuscript in a blinded fashion to make recommendations about its acceptance, further revision, or rejection.
7. Once the manuscript is accepted, it will be published as soon as possible, depending on space availability.
8. All manuscripts should be submitted to editors@ishrs.org.
9. A completed Author Authorization and Release form—sent as a Word document (not a fax)—must accompany your submission. The form can be obtained in the Members Only section of the Society website at www.ishrs.org.
10. All photos and figures referred to in your article should be sent as separate attachments in JPEG or TIFF format. Be sure to attach your files to the email. Do NOT embed your files in the email or in the document itself (other than to show placement within the article).
11. We CANNOT accept photos taken on cell phones.
12. Please include a contact email address to be published with your article.

Submission deadlines:
April 5 for May/June 2012 issue
June 5 for July/August 2012 issue

Reed Message

⇦ *from page 39*

My conclusion, at this point, is that it is impossible to have rigid points of reference for what is ethical regarding this issue and many others in hair restoration that would turn the slippery slope into a vertical face with "Right" and ethical looking down upon the "Wrong" and unethical. The issues are too complex and deal with too many variables with many of them unknowable. This reality leaves me to conclude that the *qualities of the motivations* underlying the physician's *"considered intent"* are what distinguish the ethical. Of primary importance is also careful education of the potential patient so that it is ultimately his decision based upon his willingness to assume the given, less than clear risk/benefit ratio for his unique situation. Who really benefits, who made the decision, and how well informed was the patient assuming he was the one making the decision? I have no notion whether the man will decide to proceed with transplantation, but my decision has been made.

So now that I've simplified and clarified the ethical, and replaced the shades of grey that make up the "slippery slope" of objective points of reference with the "fog" that surrounds self-awareness and intention, I encourage you to continue investigating the rest of this issue for further points of illumination! I shall enter this topic into ListServ+ and invite your remarks there or as a Letter to the Editor.◆

Notes from the Editor Emeritus

Francisco Jimenez, MD *Las Palmas, Spain* *jimenezeditor@clinicadelpelo.com*

Musicians as a source of inspiration for surgeons

Four years ago, I asked my wife for a drum set for my birthday. I started to take weekly drum lessons, and pretty soon I was listening to a variety of music that I had never been interested in before. I began to differentiate basic groove patterns, the 12 bars of blues, the shuffle, the triplets of jazz, the syncopated rhythms of funk, and so on. I rediscovered legendary musicians such as Charlie Parker, Miles Davis, Art Blakey, John Coltrane, and Tony Williams, and more contemporary artists like Keith Jarret, Pat Metheny, David Weckl, or Chris Botti.

The owner of a local music school, where I play in a combo band with other students, is a professional guitar player, and told me once that doctors were his most disciplined students. If you do a Google search for the words "doctors and music", you will find many musical groups composed exclusively of doctors: for example, in the island of Gran Canaria where I live there is a doctors' musical group (Vademedicum; http://vademedicum.es), while in Barcelona there is even a doctors' orchestra (ArsMedica; www.orquestraarsmedica.org). At our ISHRS annual meetings, I have always felt a well-meaning envy when listening to the outstanding performances of our colleagues Tony Mangubat (saxophone player) and Carlos Puig (bass player). Tony's interpretation of Chick Corea's "Spain" has always amazed me, and in my humble opinion is worthy of a professional player. So what makes this music–medicine connection so intense and why are so many doctors tempted to enter into this field with such enthusiasm and perseverance?

A recently published essay entitled "Music lessons: What musicians can teach doctors," by Frank Davidoff, is well worth reading (*Ann Intern Med.* 2011; 154:426-429). In this essay, Davidoff, Editor Emeritus of the Annals of Internal Medicine, discusses 10 aspects of the professionalization of musicians that offer lessons on how medical practice might be learned, taught, and performed more effectively: performance, coaching, stardom, talent, time, art, practice, teamwork, repertoire, and specialization. Davidoff makes the interesting point that although medicine is learned over many years, the actual practice of medicine is, like in music, a question of performance, "in the best and deepest sense of the word." In this respect, hair restoration surgery, and indeed any other surgical speciality, is no different. Although I think it is very valuable to know the latest information on hair biology, scalp anatomy, or hairline design, we will be better surgeons only if all this knowledge is focused on achieving a better performance.

Section A: Coaching is an interesting concept that could help us to improve if applied correctly to our speciality. Great teachers in music are coaches, not lecturers. In contrast, most teachers in medicine are lecturers, in which vast amounts of information are passively given to the student. The role of a coach would be to watch, listen, and provide the feedback necessary for the doctor to know what happened, what went wrong, and how the surgery could have gone better. Even the greatest classical musicians receive regular coaching with renowned teachers. Likewise, professional golfers take regular golf lessons and many of them have had different coaches during their careers. A good coach does not need to be a good performer. We have not introduced the figure of coaches in our profession. Where can I find a coach to improve my performance as a hair transplant surgeon? This figure is not available in our field. We substitute this figure by visiting other "top level" practices, or by regularly attending hands-on workshops in which we observe the know-how of other colleagues, becoming more aware of the level of quality of our technique by comparing it with that of our peers. In these situations, when we expose our technique to the scrutiny of our peers, we must leave our egos outside. Criticism, no matter how solidly constructive, is always hard to take. I know that feeling from when I receive the feedback criticism from my drum teacher after executing a lousy drumming performance with my combo. However, in music, as well as in surgery, this is the best way to improve for those of us who are normal individuals and not natural geniuses like Mozart.

Section B (Bridge): Practice is another critical principle in music and in any type of surgical speciality. Musicians are not practising when they play in front of an audience. Musicians practise at home, every day, as a routine. Most importantly, they record themselves, because listening to (or viewing in the case of surgery) your performance is a great way of self-evaluation. A widely known saying among musicians is: "If I don't practise for a day, I know it; if I don't practise for two days, the critics know it; if I don't practise for a week, everyone knows it." Likewise, when we are learning a new surgical technique, and FUE is the one that first comes to my mind, we should do the same, practise as much as we can. I am convinced that if some of us do not get comparable results with FUE as with the strip technique, it is simply because we have not practised enough, and it is not simply a matter of using blunt versus sharp punches, or manual versus powered devices.

I respectfully disagree with the opinion that removing intact follicular units with a 1mm punch can only be learned with actual patients. Of course, there is no perfect model, but practising with patients involves a long, painstaking, and frustrating learning curve. Why not improve our manual dexterity with those tiny punches and consequently increase the speed of extractions by practising on animal or artificial models, in the same manner as I practise sticking speed or drum rudiments with a practice pad? I do not need my whole Yamaha maple custom drum set kit for that. I do believe that there is a need to develop models to practise micropunch extraction. In fact, our esteemed colleague Dr. Brad Wolf is currently searching for models for an FUE hands-on workshop that we are going to set up in our next meeting in Las Bahamas, and I hope Brad will be able to come out with some helpful proposals.

Coda: The take-home message here is not that we would all be better hair transplant surgeons if we were all musicians, but that the learning process of a musical instrument and the continuous education of a musician could serve as an inspiration to the medical profession, particularly in specialties such as hair restoration surgery in which there is such a fascinating combination of art and science.◆