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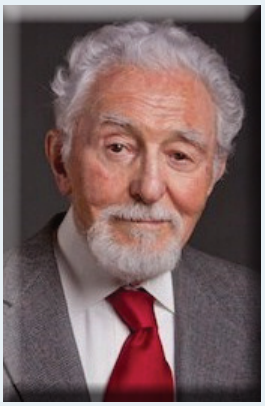
IN THIS ISSUE

In Loving Memory
Norman Orentreich, MD
December 1922—January 2019



The hair transplant community mourns the death of one of its earliest pioneers, Norman Orentreich.

Dr. Orentreich is widely regarded as the father of modern hair transplantation. In the early 1950s, he was the first to perform the autologous transplantation of hairs from the occipital scalp into balding areas in androgenetic alopecia. These hairs actually grew permanently, a phenomenon he described as donor dominance. He published his results in a landmark article in the Annals of the New York Academy of Sciences in 1959. His discovery was widely echoed in the media and he trained numerous doctors in his New York office, contributing to the popularity and recognition of hair transplantation as a permanent treatment modality for hair loss.

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No Differences in Stress Protein Induction and Proliferative Capability in Follicular Unit Grafts Obtained by Follicular Unit Excision (FUE) and Follicular Unit Transplantation (FUT)

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ABSTRACT

Background: Two techniques are currently used in hair restoration surgery: Follicular Unit Excision (FUE) and Follicular Unit Transplantation (FUT). Both techniques give excellent clinical results but differ in the way the follicular units (FUs) are excised and handled. It has been shown previously that careful excision and handling of FUs are critical for the outcome because of molecular events that occur in FU cells outside of the body.

Materials & Methods: In this study, we compared the two methods with respect to cellular stress response and cellular growth properties by measuring the expression of compartment-specific hair follicle genes, stress protein genes, and proliferation-related genes in cultured cells.

Results & Conclusion: Although molecular changes suggest a cellular stress response during the procedure, we found no significant differences between the FUE and FUT grafts and no alteration of growth capabilities of the hair follicle cells obtained by FUE and FUT.

INTRODUCTION

Currently, two techniques of donor harvesting used for follicular unit (FU) graft isolation are used in hair restoration surgery. Both of the following techniques produce grafts that can be readily transplanted into the recipient area:

1. **Follicular Unit Transplantation** (FUT), which involves the excision of a strip of occipital skin and

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President's Message

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Are you a radical or do you turn a blind eye?

The world is radical. You can see that everywhere: in politics, on the internet, in opinion blogs… no one can escape from angry comments. The politically correct era seems to be "on hold" for a while. In the hair transplant field, this radicalism isn't new at all. FUE (follicular unit excision) just started blaming FUT (follicular unit transplantation) for everything, and started promising a miracle: endless donor hairs with invisible extractions. Anyone doing FUT was accused of being a dinosaur and of harming the patient. But who could contest that statement at that time? Only a few were doing FUE and they used the criticism of FUT as a marketing advantage or simply to sell more surgical equipment. Some FUT surgeons were ashamed for not doing FUE—despite a lack of evidence to establish its equality for graft survival, or donor area cosmesis—and remained mute for a long time. But after a while, they found their voice again—as more FUT surgeons learned to perform both techniques, donor area limitations became apparent and (at that time) the higher transection rates revealed a dark side to FUE, especially when used as a solo donor harvesting approach. The growth of FUE cases and results revealed the limitations and fueled the fire of debate, giving the FUT surgeons ammunition to fight back. Of course, they were all wrong: no war was needed!

Choosing only one technique and criticising the other is largely a marketing strategy, may reflect a lack of knowledge or expertise to perform the other technique, or done for profitability, and ultimately has nothing to do with what's in the patient's best interest: a hair transplant with maximum quality that is achieved by an expert surgeon performing his/her own surgery.

For those adept at performing FUE, they know the key to success is mastering donor area management with wise and careful use of the limited donor resource. Of course, black market clinics/unethical surgeons don't care about that. In an ethical clinic, the main goals are patient safety and satisfaction, prudent donor area management, and long-term results. But in greedy black market clinics, all this is secondary—especially when dealing with patients traveling from afar who will be far away again when they see their results. For black market technicians and doctors, performing a hair transplant surgery is just daily business with maximum profit as the goal. The uninformed, hopeful patient is a "mark"; an easy target for those not held legally responsible for surgery, who have no formal training, no ethical code, and no disciplinary sanctions or oversight "in the underworld" of hair transplant surgery.

No one is the king of truth, but I am among the lucky ones (or should I say "unfortunate ones") to be in a privileged position to see this all coming. And, I feel an obligation to help to fix this because I witnessed the developing conflict from the inside: as program chair for the 2008 World Congress in Montreal, where the FUE surgeons became relevant and started a new trend. Nearly a decade later, I was the program chair for the 2017 WLSW FUE Immersion at Polanica Zdröj, the ISHRS's first world live surgery workshop exclusively devoted to FUE. From the backstage, I witnessed the evolution of the conflicts developing among our colleagues, being a Board of Governors member for 6 years, treasurer for 2 years, then vice-president and now ISHRS president. Most importantly, many relevant players are my personal friends, who I have been privileged to visit to see firsthand what they do in their practices. This experience has given me access to the advancements that have improved the technique of FUE. Recently, I assisted in the development of a hybrid punch, testing versions and offering my insight; I have also tested the new FUE machines for the brilliant surgeons behind them.

With that background and experience, as an experienced FUT/FUE surgeon, I am in the position to say: we are partially responsible for the black market problem. It seems a terrible acknowledgment, but it is true. We, the surgeons from the hair transplant industry, did two terrible things:

1. **Improper delegation.** Many surgeons started to be too greedy or too lazy, delegating important parts of the procedure to non-surgeons, transferring knowledge to them and allowing them to have responsibilities they were not ethically screened for, or prepared/trained for, or not legally allowed to do. These doctors created an easy life for themselves, sitting at a desk while the techs performed most of the work. It comes as no surprise that after a while they, the techs, felt trained enough or safe enough to start their own business or to contract their services to companies for higher wages, mostly without a proper license. This type of practice, though never supported by the ISHRS bylaws or officially by anyone, was also not officially forbidden and was tolerated by many who turned a blind-eye.
2. **The false war.** Suddenly, several FUE Messiahs began to appear and "pray" they would save the hair transplant industry and patients from hideous linear scars, which factored prominently in medical device company marketing, by doing exclusively the safest, "miracle" donor harvest technique: FUE. Not content to simply promote their skills, they accused those who performed

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FUT (strip FU surgery) to be butchers causing damage to patients. Then, the war began. On one side, some of the FUE pioneers argued only FUE could save patients from outdated FUT surgery. Offering FUE opened a wonderful and very profitable market for them. Some of the messiahs also enjoyed new profitability from selling FUE devices or supplies. To counter these attacks, FUT surgeons, not yet involved with learning FUE, accused them of leaving circular white dots scars (old times 1mm or bigger punches) and of achieving low hair growth. The latter was consequent to higher transection rates (the villains would be the motorised sharp punches) and fragile FUE grafts implanted with forceps, exposed to higher trauma. In war time, some felt everything was valid to defeat the other side. Most emerging FUE surgeons didn't know how to perform FUT, others had abandoned it, and the majority of the legendary FUT surgeons, including me, did not perform FUE regularly or at all. A moderate, unbiased voice knowledgeable about both techniques was rare. It was a terrible fight for anyone to moderate.

What we learned from this FUE vs FUT war is that medical device corporations could not make money selling the FUT technique, but could make lots of money selling FUE devices—and leasing out technicians to perform surgery for the doctors who bought them. Guess what? These companies focused negative marketing against FUT. We tried to address this, but the war was too hot and distant for unity or consensus.

During those years I heard selfish excuses to justify only one donor harvesting technique:

- I quit FUT because on FUE days I had to pay the staff for nothing.
- FUE is much more profitable.
- FUT is the best for patients; I don't need to perform FUE (and probably don't know how) and my patient doesn't need it.
- My FUT leaves a perfect scar; it doesn't matter how many I have made.
- "I trained my staff to perform FUE and they do better than a surgeon." I questioned: Are you not afraid of them leaving you and becoming a competitor? And I heard this response: "I pay them well and when and if this happens, I will be retired with lots of money in my pockets."

In defense of surgeons who produce and sell FUE devices/supplies, some continue to perform FUT and widely defend it for many situations. Others could not perform FUT but never attacked or accused the FUT surgeons. Lastly, one remarkable FUT "inquisitor" has turned position and now supports both techniques.

Surgeons proficient in both techniques, including me, can assure you no technique can stand alone for all circumstances, and both techniques may be needed for some cases. A surgeon can choose to perform only one technique, but must know the limits of that technique, explain that to the patient, and refer them to a colleague, if needed, who performs that technique. From my perspective, choosing only one technique and criticising the other is largely a marketing strategy, may reflect a lack of knowledge or expertise to perform the other technique, or done for profitability, and ultimately has nothing to do with what's in the patient's best interest: a hair transplant with maximum quality that is achieved by an expert surgeon performing his/her own surgery. As hair transplant surgeons, we do not need to be in conflict about donor harvesting techniques. It is time for this war to end and accept we need both.

Are you a radical? ■

Co-editors' Messages

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Sixty years ago, Norman Orentreich rediscovered hair transplantation and described its application to permanently restore androgenetic alopecia. This was the "big bang" for hair surgery. Over the past several decades, the technique has been further refined by dedicated hair surgeons who naturally reconstruct alopecia. They treat each patient individually and aesthetically distribute the limited donor hair. They focus on careful graft harvesting and placing to ensure optimal graft survival and protection of the donor area and preexisting hairs. The natural results of their craftsmanship have made hair surgery popular.

What we face now, however, is the erosion of these standards by "hair transplant factories." They focus on quantity rather than quality, promising large graft numbers to every patient without any long-term concept and follow-up, and ignoring their hair status. I see more and more desperate "victims" of such "clinics," presenting with overharvested donor areas, poor growth, and unnatural hairlines and distribution. I also see more and more patients who are again, like decades ago, sceptic of hair transplantation because they saw bad results in their colleagues or friends. This is but the tip of a huge iceberg approaching us; it is not only a catastrophe for affected patients but also for the reputation of hair surgery as an accepted treatment modality.

The black market campaign is one part of a combined effort to fight these developments. But we also have to show good results from professional hair surgeons. Many patients have never seen a good hair transplant! In some countries, including Germany, surgeons are not allowed to show before-and-after photos on their websites, but foreign clinics including black market providers are. Maybe showing more patient stories on the ISHRS website and linking them to the surgeon's member profile would help.

The internet has largely replaced the word-of-mouth recommendations, especially since many men do not talk about their hair loss concerns. It is getting harder for small practices to keep up with those hair transplant factories and stay visible online. Patients need to see reliable videos about a good hairline, the safe donor area, etc. Many independent surgeons do not have the time or means to produce and promote high-class videos and animations. Can our ISHRS help?

This issue features interesting articles and columns. The study by Krugluger et al confirms that hair follicle cells harvested by FUT and FUE both have equally good growth capacity. For good survival of these cells, it is crucial to carefully excise, store, and transplant the complete follicle. The study by Lin demonstrates how hair thickness can be considered in eyebrow reconstruction. Scalp hairs used for eyebrows do not taper. Therefore, a careful selection of the appropriate thickness is important for a natural reconstruction.

Dear members, please continue to send your thoughts and articles to forumeditors@ishrs.org. ■

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Dr. Norman Orentreich's 1959 landmark paper reported results of his skin grafting study performed in 1956. His conclusions were considered heresy. Mainstream journals refused to print his paper due to the belief that "Alopecia Prematura," the term for AGA at the time, was due to "chronic activity of the scalp muscles that lead to shearing stresses in the dermis of the scalp and consequent ishemia" (Szasz, T., and A.M. Robertson. A theory of the pathogenesis of ordinary human baldness. *Arch Dermatol Syphilol.* 1950; 61:34-48). Sixty years ago, in one fell swoop, he coined the terms donor and recipient dominance and set into motion what has become our specialty today. We are all in his debt.

Krugluger et al present a study showing that grafts isolated using FUT and FUE are the same with respect to their stress responses. I was involved in a similar study done with Proctor & Gamble, a transcriptomic expression analysis of hair follicles isolated by FUT and FUE. Gene expression of stem cell specific markers, including keratin 15 and alkaline phosphatase (also measured in the Krugluger study), showed FUE grafts very closely resembled FUT grafts. When FUE burst on the scene, it was thought that FUE grafts were inherently "less than" FUT grafts, something had to be missing. Studies and practical experience have shown us otherwise.

There is some progress in the fight against unlicensed assistants performing surgery. A lawsuit was filed in 2017 in California alleging medical malpractice in relation to the performance of a procedure performed by unlicensed assistants using NeoGraft. Details on page 77.

The article by Rajput discusses methods to stimulate hair growth without using DHT blockers. This is an extensive review with many interesting references. In his study, he included a treatment group using a nutritional support program and a control group treated with minoxidil and finasteride for only 4 months. No real conclusions can be drawn from this study since results from these medications take a year or more to be realized.

Thanks to Greg Williams for another excellent Ethics column. In my experience, it is imperative to address any complaints as quickly as possible. I've also found that there is no substitute for pre-operative photos to document density prior to treatment. Many patients forget and are shocked when revisiting their pre-op photos after treatment.

"Radical" is a change or action affecting the fundamental nature of something. Hair transplantation has changed radically since its start 60 years ago. While it's important to embrace change, it's also important to take with us what is valuable from the past. Donor harvesting techniques should not be pitted against each other but rather embraced and performed when indicated like any established surgical procedure. ■