Review of the Literature

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Citation: **Blume-Peytavi, U., et al. Review article: S1 guideline for diagnostic evaluation in androgenetic alopecia in men, women, and adolescents. *British Journal of Dermatology* 2011; 164:5-15.**

Male and female pattern hair loss is the most common form of hair loss. Nonetheless, a great deal of variation exists pertaining to the recommended workup and diagnosis of these patients. Three different types of evidence-based guidelines exist (S1-S3). An S1 guideline is based on informal consensus of an expert group. An S2 guideline is based on formal consensus of an expert group. An S3 guideline is based on systematic review of the literature with evaluation of evidence levels and a systematic review process. This article is an S1 guideline for the diagnostic evaluation of hair loss in men, women, and adolescents based on a consortium of European hair loss experts. It is independent and without any commercial conflict of interest.

Some key recommendations from the article are as follows:

- Careful history and physical is needed for all patients
- The observation of a pattern of hair loss consistent with Hamilton-Norwood (for men) or 3-point Ludwig, 5-point Sinclair, or Olsen Christmas tree pattern (for women) is helpful. Remember that men can have female patterns of hair loss and women can have male patterns of hair loss.
- Family history is helpful but lack thereof should not rule out AGA as a diagnosis.
- Medication history should focus on intake of pro-androgenic, anti-thyroid, anti-epileptic, beta-blockers, chemotherapeutics, and supplements.
- Eating history should inquire about crash dieting, strictly vegetarian, or any recent weight loss of more than 5-10kg.
- Key labs to check include iron/ferritin, TSH, blood hemoglobin, treponemal antibody/RPR (if indicated).
- Hormone levels in women should be checked only if clinically indicated by a presence of any signs of hyperandrogenism or hormonal dysregulation. Patients should be asked about their menstrual history, reproductive history, the use of hormone replacement or contraception, and any fertility issues. Any history of acne/seborrhea, hirsutism, irregular periods, and/or impaired fertility may support a diagnosis of polycystic ovarian syndrome.
- Labs for women with signs of hormone irregularities should include a free androgen index (FAI = Total testosterone × 100 / sex hormone binding globulin. If it is ≥5, then PCOS may be considered) and prolactin as screening parameters. They must be drawn while the patient is off all hormone therapy, between 8-9 o'clock in the morning, and between the 2nd and 5th day of the menstrual cycle.
- Adolescents with early onset AGA should be seen in consultation with a pediatric endocrinologist. Also consider nutritional factors, hypotrichosis simplex, or ectodermal dysplasia.
- The pull test is usually negative in AGA but positive in telogen effluvium or active alopecia areata. It involves grasping 50-60 hairs and is positive when >10% of hairs come out.
- Dermoscopy can help identify the variation in hair diameter seen in AGA, as well as the perifollicular erythema or scale seen in cicatricial alopecias.
- Automated digital systems such as the TrichoScan are most useful for clinical studies, where careful tracking of progress is essential.
- Global photography is most suitable when a standardized technique is used.

Biopsy, from the central (affected) scalp, using a 4mm punch, is most helpful in identifying cicatricial alopecias but can also be helpful when the diagnosis of AGA is uncertain. Horizontal and vertical sections can provide insight to hair density and caliber as well as the presence of any inflammatory infiltrate.◆

Controversies

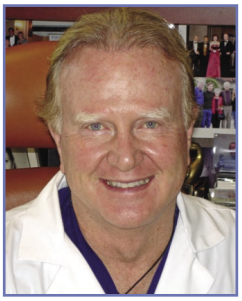
⇦ *from page 91*

Following this hearing, some members of the Board of Governors became apprehensive about the Society being sued as a result of enforcing our code of ethics. The Board of Governors changed the bylaws without consulting the bylaws committee and removed all reference to punitive measures for ethics violations. Since the ethics committee had no further real function, I resigned the chairmanship but remain a member of the committee, which has no teeth for enforcement.

My personal thoughts are as follows: 1) I have always felt that nobody or no society should ever fear doing what is unquestionably right. Of course, in any dispute, there are always two sides. Even in the most obvious case of violation, the violator will feel that he or she was right. 2) The causal, unorganized manner by which most complaints were handled in the early years worked well for 7 years, but some may think it is not be suitable for our Society now. At that time, we were a young, immature organization searching for our place. We are now becoming a mature Society well on the way to being a major component of organized medicine. I functioned largely as an arbitrator, and arbitrations are necessarily carried out in secret. If they were carried out on a public platform, nobody would budge because everybody would see that as a weakness. 3) The notion that ethics violations should be referred to state boards where they will be dealt with properly is not practical. When I was handling the complaints, I was on a first-name basis with our state board. They even called me occasionally to ask my opinion on their cases. Once, when I was discussing one of our cases with them, they said I could file it if I wanted, but nothing will happen. They were inundated with serious cases where the doctor was on drugs or having sex with patients or some other major problems; they would never get to our case. And, finally: 4) Although it may be only because I am no longer exposed to the regular flow of the complaints, I am under the impression that the severe violations of ethics that I saw in the early years are diminishing.◆

⇨**page 98 *for further discussion***

MESSAGE FROM MELVIN L. MAYER, MD, PROGRAM CHAIR OF THE 2011 ANNUAL MEETING



Dear Colleagues:

The registration site for the Anchorage meeting is up and running. I encourage you to register for the meeting today, if you have not done so already. We have a top-notch program planned and details can be found on the ISHRS website at: www.ISHRS.org/AnnualMeeting.html

Points of Interest

- The meeting is September 14-17, 2011, at the Dena'ina Civic and Convention Center in downtown Anchorage. (pre-courses on Wednesday, and the general sessions Thursday–Saturday)
- No general session on Sunday this year.
- Headquarters hotel is the Hotel Captain Cook, 8 minute walk (6 blocks) from the convention center.
- Attire for the educational sessions is business casual – no ties.
- Complimentary wireless Internet at convention center. Bring your laptops, iPads, etc.
- *NEW THIS YEAR!* Abstract book will be provided in electronic format (PDF) and usual paper copy.
- *NEW THIS YEAR!* Electrical Plug-in Stations provided in exhibit area so you can power-up your electronic devices. Bring your own adapter.

Workshops

We have 4 small-group workshops planned for Thursday morning plus 1 Surgical Assistant Workshop. Register early because these are first-come, first-served!

- Workshop 101: Recipient Sites; Director: Robert P. Niedbalski, DO
- Workshop 102: FUE: Different Technical Approaches; Director: Robert True, MD, MPH
- Workshop 103: Understanding Cell Therapy and Related Follicular Research Advances; Ken Washenik, MD, PhD
- Workshop 104: How to Compile a Patient Record and Proper Patient Photographs; Director: Shelly Friedman, DO
- Workshop 405: Surgical Assistants Hands-on Cadaver Workshops: Planting, Slivering, Dissecting; Chair: Brandi Burgess

Breakfast with the Experts

On Friday and Saturday mornings we will offer the popular Breakfast with the Experts small-group discussion tables. We have added many topics and additional tables. New this year: on Friday morning there will be one table in which the assigned topics will be discussed in Spanish and another table in which the topics will be discussed in Japanese and English.

There is no extra fee to attend these. Each table will be labeled with a topic and an expert's name. Simply grab your breakfast from the exhibit area and sit at a table of your choice.

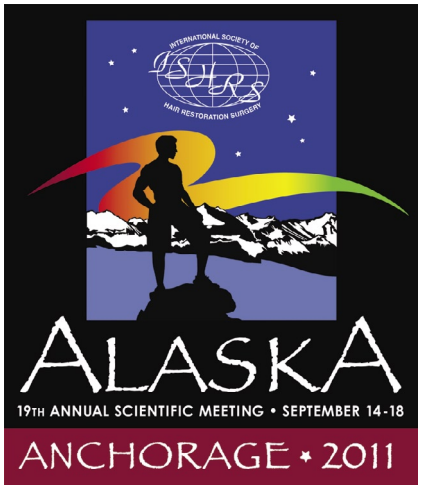
Lunch Symposia

We are offering a bank of 3 lunch symposia on Friday that is included with the price of your main registration. During the registration process you may select which Lunch Symposium you would like to attend:

- Lunch Symposium 211: Hairline Design; Director: Ronald L. Shapiro, MD
- Lunch Symposium 212: Top 10 Clinical Pearls to Achieve Best Results and Happy Patients; Director: Dow B. Stough, MD
- Lunch Symposium 213: Hair Duplication and Other Uses of Extracellular Matrix; Jerry E. Cooley, MD

Featured Guest Speakers

- Norwood Lecture: "New Horizons in Storage Solutions and Additive Agents in Organ Transplantation," William Ehringer, MD
- Advances in Hair Biology Lecture: "Regulation in Hair Disorders and Diseases," Marty Sawaya, MD, PhD
- Featured Lecture: "Cicatricial Alopecia Update," Vera Price, MD, FRCP



I am looking forward to exploring new vistas in hair restoration science and surgery in the wilderness of Alaska. I appreciate all the time and effort many of you have contributed already to the planning of this Anchorage Meeting.

Sincerely,

Melvin L Mayer, MD, 2011 Program Chair

www.ISHRS.org/AnnualMeeting.html

"New Vistas and Trusted Techniques in Hair Transplant Surgery"

Review of the OLSW 17TH ANNUAL ORLANDO LIVE SURGERY WORKSHOP March 16-19, 2011, Orlando, FL

WEDNESDAY/MARCH 16, 2011

Carlos J. Puig, DO *Houston, Texas, USA*
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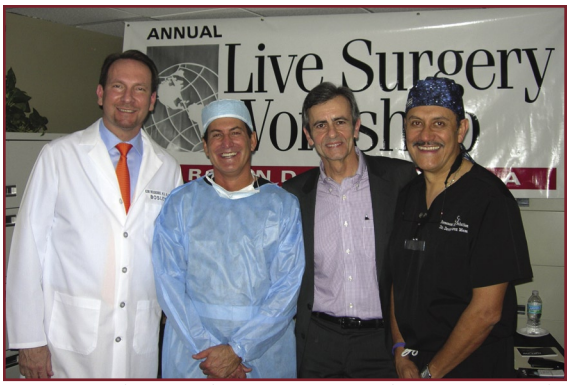
Drs. David Perez-Meza and Matt Leavitt combined an outstanding faculty and insightful program design to deliver a focused beginners course for the first day of the OLSW.

Dr. Perez-Meza's presentation, "Hair Restoration for Dummies," turned attendees' attention to the core topics that needed to be absorbed by the beginners during the workshop. This introduction to hair restoration surgery summarized the therapeutic options available to the contemporary hair restoration surgeon.



Drs. Matt Leavitt and David Perez-Meza along with Dr. Ken Washenik, Medical Director, and Armen Markarian, President, of Bosley (co-sponsor of the LSW).

Next, Dr. Mark Waldman discussed scarring alopecias. For the beginners, this was a very important lecture as misdiagnosis of scarring alopecias, especially in female patients, is a common cause of treatment failures in the hands of novice surgeons. Dr. Waldman summarized this complex subject and touched on the more recent information available about the role of AR gene sequencing in female pattern hair loss.

Dr. Robert Niedbalski discussed the role and responsibilities of the physician during the patient consultation emphasizing the physician's responsibly to set appropriate patient expectations from the procedure; to create unique treatment priorities for the patient; and to prepare a comprehensive treatment plan including diagnostic, medical and surgical interventions.

Dr. Michael Beehner introduced the new attendees to the alternative methods of creating age-appropriate hairline that will remain functional for the patient throughout their lifetime. He stressed the importance of properly framing the face and planning for future hair loss. His suggestion about the pre-operative review of the drawn hairline with three view photography provided the novice and experienced surgeon alike with a new tool for the critical review of the proposed treatment plans.

Dr. David Clas gave a concise synopsis of donor area management including anesthesia administration, donor harvesting, and closure of the donor wounds. That was followed by Dr. Alex Ginzburg's introduction to the techniques of graft and recipient site preparation. Dr. Niedbalski expanded upon the recipient site creation with a technique encouraging crossing of the growing hair. He pointed out that because follicular units naturally grow in clusters of 2 to 4 oriented in such a way so that the growing hairs cross 8-15mm from the scalp surface, shifting exit angles in clusters of 3 follicular units would create the cross, which enhances the natural appearance of the transplant.

Dr. Leavitt spoke on the responsibility of the physician to provide the patient with clear, concise, written and verbal pre- and post-operative instructions, and offered several tips for designing a hair restoration surgery operative consent form. I, Dr. Carlos Puig, provided the new hair restoration surgeons with insights about the relationship between professional ethics, marketing, and operative consents. I pointed out that ethical behavior helps to build not only one's individual practice, but expands the market for the profession as a whole.

Dr. Perez-Meza discussed hair restoration surgery side effects and complications and their proper management, recognizing that the best management is tied to prevention, early recognition, and careful treatment.

In his next presentation, Dr. Leavitt talked about how to set up a hair restoration surgery office. He noted that it is not just about setting up the physical plant, but also staff management, policy and procedure development, and office ambiance. He emphasized that the entire office team has to be focused on providing high-quality patient encounters. Dr. Clas also offered suggestions to help novice surgeons select patients that will help them to define and fine-tune their surgical skills with minimal risk to both the patient and physician.

This first day provided attendees with a concise overview and introduction to the art and science of hair restoration surgery, meeting all of the learning objectives set for the beginners program, and offered the ISHRS and its members a stellar post-residency surgical training program.

THURSDAY/MARCH 17, 2011

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Dr. Matt Leavitt began the first session of the 17th Annual OLSW with a reminder that the primary goals of this meeting have not changed since its inception: to advance the science of hair restoration surgery; to educate physicians about the latest technology and techniques in hair restoration surgery; to promote quality results for hair restoration procedures; and to create lasting friendships among the participants.

Dr. Leavitt acknowledged Drs. Patrick Frechet and Marcelo Gandelman (co-founders) and David Perez-Meza (co-chair) as key individuals for the continued success of the OLSW for the past 10 years. The unique format of this workshop has attracted participants from over 51 countries and continues to have a strong international draw.

Dr. Gandelman then spoke about the origins of this meeting and how, after viewing a hair transplant surgery in the lobby of a Central American hotel lobby, Dr. Leavitt proposed the concept for a workshop to combine live surgery demonstrations and didactics. The idea was to discuss various topics as a group and then demonstrate these principles on live patients all in the same day and then offer a series of panel discussions.

Panel 1: Female Hair Loss. The first panel was moderated by Dr. Leavitt and included Drs. Ken Washenik, Maria Muricy, and Carlos Puig.

Dr. Leavitt reviewed important elements of the typical female

hair loss patient as well as the most common causes of hair loss in women in decreasing order of occurrence: 1) female pattern hair loss (FPHL); 2) telogen effluvium (TE); 3) alopecia areata; and 4) chemical or mechanical (traction) alopecia.

Many useful pearls were offered. Dr. Puig recommended a scalp biopsy in any female patient who has no family history of hair loss. The specimen should be sent to a dermatopathologist vertical and horizontal sectioning. Dr. Washenik reminded us to focus on the area of greatest need when transplanting a female patient. Dr. Muricy likes to use dermoscopy to demonstrate the hair loss process to the patient. She reminds all her female patients that the treatment for hair loss is open-ended, even with surgery…there is no cure! The panel members then evaluated a female patient who would have a follicular unit transplant that afternoon as part of the workshop.

Panel 2: Male Hair Loss. This panel was moderated by Dr. Robert Niedbalski and included Drs. William Reed, Michael Beehner, and Jerry Cooley.

Dr. Niedbalski discussed the importance of managing patient expectations as part of the consultation. Hair restoration surgery results are evaluated from both objective (measurable criteria) and subjective (opinion) perspectives, so it's important to include these two points of view in the consultation. Asking patients to define their goals will help to develop a treatment plan that will meet their expectations.

Drs. Parsa Mohebi, Brad Limmer and Sharon Keene with guest.

Dr. Leavitt's neighbor, Scott, was the willing volunteer the panel was asked to interview. Dr. Beehner likes to use open-ended questions at the start of an interview. He asked Scott why he wanted to have hair restoration surgery, which prompted Scott to reveal his motivation (it was free) and his desired result (to look younger than Matt).

The consult should be methodical but not scripted. The more comfortable and conversational the interaction, the more the physician learns about the patient's expectations and what would be the best course of treatment for the patient. A thorough consult should include a discussion on non-surgical therapies as well to address the progressive nature of hereditary hair loss.

Panel 3: Hairline Design. This panel was moderated by Dr. Beehner and included Drs. Cooley, Niedbalski, and Reed.

With Scott again used for the panelists' discussion, Dr. Beehner began by noting he prefers to stay away from any particular formula or pattern. He draws an irregular line that looks like the path taken by a miniature "drunken sailor" trying to walk along the straight hairline he first drew. This method avoids any unintended pattern from being created that might look unnatural.

Dr. Cooley's approach was interesting in that he draws the hairline from behind the patient and uses a mirror from that position to view the symmetry and balance of his markings. Still standing behind the patient and holding the mirror in front of their chin, he slowly raises the mirror until he can see the hairline he drew. This viewing perspective is similar to what the patient sees.

It is important to note that there were several interpretations of a hairline for this patient but all of them took into account his facial shape, size of the surgery to be completed, his age, and the potential for further hair loss. The variety in designs is purely aesthetic and subjective.

Panel 4. Donor Estimation, Closure, and Trichophytic Method. This panel was moderated by Dr. Gandelman and included Drs. Leavitt, Parsa Mohebi, Muricy, David Perez-Meza, Puig.

Dr. Muricy described a technique to safely maximize the donor harvest for mega-sessions by creating two separate flaps with the donor tissue. Dr. Mohebi emphasized that scalp laxity is a dynamic entity—there is less laxity laterally than in the central portions of the strip. To ensure a safe donor strip harvest, he developed the Laxometer (a device not yet commercially available). Dr. Perez reviewed 11 years of experience using 4-0 Vicryl Rapide (VR) as an absorbable skin suture for donor wound closure. He noted that VR is a good choice for donor wound closures on patients that live too far from the surgery center to come back in 2 weeks for suture removal. Dr. Leavitt reviewed his two layer "Zipper" closure technique, which uses a running subcutaneous 3- or 4-0 Biosyn suture without any knots.

Finally, Dr. Puig reviewed a technique he developed that makes the trichophytic incision easier to perform with depth control. He uses an Arnold knife handle with a 1mm spacer and 2 #10 blades. Before any donor incision is made, he uses this knife to make a "scoring incision" along the inferior portion of the donor strip outline. (The *Forum* hopes to have an upcoming issue that will go into this important topic including these presentations in more detail.)

Panel 5: FUE. This panel was moderated by Dr. Perez and included Drs. Miguel Canales, Alex Ginzburg, and Jose Lorenzo.

Dr. Perez discussed FUE (follicular unit extraction). Punch harvesting dates back to Dr. Okuda in Japan in 1939. He used the 4mm circular punch for donor harvesting. Dr. Orentreich reintroduced the technique in 1959. As another surgical technique, the FUE has pros, cons, and complications. He presented a fair and balanced view about the topic and mentioned his concern about the hair graft quality with the punch technique vs. the donor strip. He also noted the confusion about what a transection rate is. At the end he recommended that attendees go to the ISHRS website and read the article, "Comparison between strip harvesting vs. FUE."

Dr. Lorenzo commented that the ideal depth for the incision should reach the inferior segment of the sebaceous gland; deeper punches increase the risk for partial or total transection. Dr. Ginzburg mentioned that the FUE technique can also be used in other parts of the body.

Finally, Dr. Canales spoke on robotics and how it has gained more popularity in cardiovascular and abdominal surgery. He noted the Robotic-assisted harvest of follicular units in hair restoration could be another potential use. He mentioned that clinical trials were conducted under independent review board and ethical approval at two U.S. clinical centers pending FDA regulatory clearance. He mentioned that their average transection rates were 9.7%, harvests speeds ranged between 500-900 per hour with 2.4 hairs/graft and average session size of 1,051 follicular units, and no complications were found. We hope that more data will be presented at the Alaska meeting.

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FRIDAY/MARCH 18, 2011

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A series of excellent panel discussions began with a group addressing recipient site techniques. Dr. Matt Leavitt presented his review of "Cross Hatching," which naturally occurs and can be replicated in hair transplantation. Inserting hairs at the hairline and perimeter of the frontal forelock at oblique angles and crossing each other gives an illusion of fullness and greater coverage. Dr. Robert Niedbalski described a follicular "super cell" concept and emphasized the importance of 3-D cross hatching whereby areas of convergence of groups of hairs, mixing parallel and perpendicular sites, contribute to a fuller appearance.

Dr. Nassir Rashid stressed the importance of minimally invasive recipient sites, carefully controlling for depth and width. He described use of a 3mm recipient blade for the hairline, and discussed his use of a viscous stain that enables recipient sites of between 0.3 and 0.8mm to be more easily visualized for graft placement. Dr. Sharon Keene discussed the evolution of recipient sites and the tools to create them. The overall trend toward smaller incisions and more sites closer together allows for the most natural results. Dr. Keene outlined her use of multiblades and then filling in the transition zone one by one to fill in density, with occasional use of double follicular units behind the hairline.

(L-R) David Michaels with spouse, Dr. Matt Leavitt, Jessica Blomquist, Dr. Tony Mangubat, Dr. Ken Washenik, Dr. Dow Stough and Armen Markarian.

A discussion of hair growth and survival in different storage solutions was headed by Dr. David Perez-Meza. He cited his recent review article Review of factors affecting the growth and survival of follicular grafts (co-authored by Dr. William Parsley; *J Cutan Aesthet Surg.* 2010; 3(2):69-75). Factors contributing to graft survival include prevention of aponecrosis and limiting ischemic reperfusion injury. There is a theoretical basis for increased graft survival with isotonic, iso-osmolar solutions with antioxidant additives; although the studies are small, a modest benefit is suggested when compared with chilled normal saline solution when grafts are re-implanted within 6-8 hours. If graft insertion is delayed, there may be a greater benefit to more advanced storage solutions. Studies are currently under way to attempt to conclusively evaluate newer storage solutions.

Dr. Michael Beehner presented his data suggesting that hypothermosol/ATP storage solution reduces cellular apoptosis and improves graft survival at 48 hours versus normal saline solution. Dr. Marco Barusco spoke of the need to look at all steps of the hair transplantation process, both intrinsic and extrinsic factors, to systematically evaluate ways to improve the hair transplant procedure and manage risk factors contributing to poor growth.

A panel exploring special cases and surgical techniques included a discussion by Dr. Parsa Mohebi about managing donor scars. Placing follicles obtained via follicular unit extraction into scars and converting scars via W-plasty along relaxed tension skin lines may be successful tools to manage widened donor scars. Dr. Alex Ginzburg elaborated on his experience transplanting into less common areas, including beard, eyebrow, pubic area, chest, and one patient who requested unilateral knee hair replacement. Dr. Tony Mangubat presented several cases of tissue expanders used in cases of extensive scalp burns or large areas of irradiation or alopecia where hair transplantation was not an option. A second special cases panel examined eyebrow and eyelash transplantation (Dr. Marcelo Gandelman); body hair transplant (from the forearm) for eyebrow reconstruction (Dr. Jose Lorenzo); a review of the importance of properly locating and creating temporal points (Dr. Mel Mayer); and an outline of the need to properly plan the frontal forelock (Dr. Michael Beehner).

Dr. Ken Washenik discussed emerging therapies in hair loss during a research update panel. PPAR-γ agonists (peroxisome proliferator-activated receptor-γ agonists), including the glitazones, which are used in glycemic control in type 2 diabetes mellitus, have a potential therapeutic role in the treatment of lichen plano-pilaris. Follicle regeneration via follicle cell transplantation (injection of autologous trichogenic cells) is being studied. Phase 1 trials were completed in the United Kingdom in 2008 and Phase 2 testing is currently under way in the United States in men with androgenetic alopecia. Interim, unpublished results of these trials are promising and suggest a significant increase in hair count compared with baseline at 12 and 54 weeks.

Dr. Sharon Keene reported on her study of 13 post-menopausal women treated with finasteride (1mg daily for 6 months). Those women with less than 24 androgen receptor gene CAG repeats demonstrated increased hair counts compared with 1) placebo; and 2) women with greater than 24 androgen receptor gene CAG repeats. A brief discussion of bimatoprost by Dr. Leavitt addressed the effectiveness of this medication in treating eyelashes: an increase in number of hairs in the anagen phase and in the duration of anagen contribute to thicker, longer eyelashes. When bimatoprost is applied directly and only to the eyelash, concerns about iris pigmentation were greatly diminished.

The effect of hyaluronidase on wound tension closure was discussed by Dr. Carlos Puig. He reviewed his study of 40 patients, each of whom had one-half of the donor area treated with hyaluronidase, in which he found that at 4 months post-procedure, in the treated area, donor scar elasticity was increased by 12% and scars were 20% wider.

Updates in hair loss treatments were provided by Dr. Ken Washenik, who discussed anagen induction and prolongation treatments. In addition to minoxidil, prostaglandin analogues may have a role in promoting hair growth. Phase 1 trial of topical bimatoprost for male and female pattern hair loss is currently under way. A Phase 3 study by Eun and others showed the effectiveness of dutasteride in the treatment of male pattern hair loss. (*J Am Acad Dermatol.* 2010; 63(2):252-8). Medical treatments for hair loss, including combined use of minoxidil and laser therapy, were reviewed by Dr. Maria Muricy. She measured immunohistochemical markers, hair count, and density, and found clinical improvement in her study of 43 patients. Dr. Silvana Franzini described her use of intradermal therapy for men and women with hair loss. Common combination therapies in men include use of minoxidil, finasteride, and biotin; intradermal

estrogen, minoxidil, and biotin are used in women. Dr. Franzini reported that 72% of patients had measurable increase in hair volume with intradermal therapy, and she displayed results from her database of over 10,000 patients.

Finally, in the afternoon live patient setting, graft cutting suggestions and review utilizing cadaver tissue were provided for physicians and surgical assistants. Additionally, 4 surgical cases were undertaken, and the following techniques and procedures were demonstrated: a side-by-side comparison of FUE vs. donor strip graft harvesting; a follicular unit transplant case demonstrating different recipient tools, including sharp point and Minde blades; an eyebrow transplantation case; and a Norwood V patient undergoing hairline and frontal forelock restoration.

SATURDAY/ MARCH 19, 2011

Parsa Mohebi, MD *Los Angeles, California, USA*
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The last day started with a series of case presentations with a mix of some common and some rare conditions that every hair transplant surgeon may encounter. This section was a good refresher for more experienced surgeons, while it provided a wide range of cases for new hair transplant surgeons.

Dr. Dow Stough elaborated on being safe in the Operating Room and Dr. David Perez explored the options for preoperative management of patients who use blood thinners. He also talked about medical clearance of high-risk hair transplant patients. He classified patients into two groups of prophylactic users of blood thinners and the ones who use blood thinners for a medical need. He explored the medical options and complexities involved with each group and discussed the management of NSAIDs, Coumadin, and Plavix with the risk of their use in hair transplant surgeries.

Dr. Jose Lorenzo performing FUE surgery.

Dr. Carlos Puig went over hypertension in hair transplant patients and the newest options for managing it. He discussed proper approaches to symptomatic vs. non-symptomatic hypertensive patients. He stressed that a hair transplant surgeon should not hesitate to stop the procedure and send the patient to the Emergency Room, if necessary. Acute hypertensive episodes and urgent hypertension were discussed along with the specific methods of managing them. Dr. Puig demonstrated an algorithm that surgeons can use as a guideline for the proper steps in treating a hypertensive patient.

Dr. Jonathan Ballon covered neurosurgical considerations in hair transplant procedures. He described hair transplant surgery in the neurosurgical patient who has had a cranioplasty in the past. He commented on the risk of complications when patients have foreign material in the vicinity of scalp incisions and the need to utilize the CT scan or a neurosurgical consultation in those situations.

Dr. Scott Boden presented two cases of hair transplantation on patients who had a history of scalp irradiation. He reported great results and attributed them to good patient selection and the use of proper surgical technique, such as aiming for a density of approximately 20-25 follicular units per square centimeter per session in that situation.

The next panel was run by Dr. E. Antonio Mangubat and focused on difficult cases and hair transplant complications. Dr. Alex Ginzburg presented a series of slides demonstrating a variety of surgical problems and offered proper solutions for each condition. He discussed the issue of management of wide scars with trichophytic closure, two-layer closures and W-plasty. He demonstrated the techniques involved with W-plasty with undermining skin edges.

Dr. Stough described his experience with bleach necrosis. Dr. Mangubat discussed the management options for removal of old flaps and hair transplantation to develop a more natural look. Dr. Asim Shamalak went over the subject: "Operate or Not to Operate." He discussed situations such as scarring alopecia that may require seeking help from a dermatologist. He spoke on managing high classes of baldness with not much donor hair and advised that sometimes a hair transplant surgeon should decide not to touch those cases. Dr. Perez discussed Aplasia Cutis Congenita Multiple and problems involved with that condition including the absence of scalp normal skin and scarring. Dr. Sharon Keene spoke on using ACE inhibitors to prevent scarring, especially in the situation of keloid formation or nerve entrapments. She reviewed the available literature and illustrated the potential applications of ACE inhibitors in hair restoration surgeries.

Dr. Melvin Mayer explored the subject of intra-operative options for managing donor closure tension. He demonstrated his method of using a scale to measure donor closure forces that could help a surgeon's understanding of closure forces, which allows a surgeon to safely harvest more hair in each hair transplant session.

Dr. Asim Shamalak presented the topic, "Role of the Medical Societies in Hair Transplant Teaching," and reviewed their benefits. Dr. Edwin Suddleson talked about Polycystic Ovary Syndrome (PCOS) and its role in androgenetic alopecia in women. He concluded that PCOS is a common condition and indicated that hair transplant may not be an option for those patients due to the involvement of their donor areas.

Dr. Silvana Franzini disclosed her experience with prolactin effect on female hair loss. She noted that many cases of poor results from hair transplants may have been attributed to high levels of prolactin. She concluded that prolactin levels should be checked every time we see slow hair growth or poor result from a hair transplant surgery.

Following morning sessions everyone went to the surgery center where teaching teams were ready to demonstrate the proper techniques of hair transplant procedures with different focuses in several operating rooms.

Drs. Marco Barusco, Ballon, and Verona performed FUT on a patient with female patterned hair loss. This was a repeat surgery to increase the density of temples and to add hair to front area. They indicted the importance of following hair direction and cowlick pattern in every single individual.

Drs. Suddleson, Puig, and Rodillo showed the proper methods of designing a hairline in a class V patient. Trichophytic closure and its special tips were also emphasized.

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Letters to the Editors

Re: March/April "Controversies" (*Forum*, 2011; 21(2):48)

Thank you for printing my letter in Dr. Knudsen's "Controversies" regarding the ISHRS Code of Ethics that I called a "Paper Tiger." I appreciate the thoughtful response and review. Problems remain: each of us in the course of renewing our ISHRS membership signs as his/her personal ethical code the pledge "with knowledge of an illegal or improper act(s) by another physician should report such activity to the appropriate agency."

This requires each of us to be judge and jury regarding ethical medical practice. Many of us know both personally and through experiences of friends how arbitrary and Kafkaesque some medical boards can be. Personally, I would much rather defer to the judgment of a system composed of experienced, respected peers of the caliber of Dr. Knudsen than to have a Medical Board, informed by a colleague and his sense of ethical behavior, act as the judge and jury.

Accordingly, I think the ISHRS and the ABHRS should require for membership the agreement with each member that they can drop anybody from their roles for any reason, including behaviors the Society views as unethical. All terminations, including involuntary ones, could be labeled as a "voluntary lapse of membership" and would thereby avoid widespread injury to the physician's practice. The old argument used by Dr. Knudsen to render this impractical, i.e., that "it won't hold up in a court of law," rings hollow when one sees the layperson websites, such as the IAHRS or HairTransplant Network, take on such challenges and follow through with a much more public termination of one of its members. One can reasonably imagine a well-designed membership contract, an insurance policy that protects the Society and Board Members, and the threat of a public airing of the issues in court would make a "voluntary lapse of membership" the better choice for a member whose behavior is sanctioned.

Aside from ethics, why is any of this important? The ISHRS or the ABHRS needs credibility that can win and sustain the trust of the public. This is not currently the case. Look no further than to observe that many ISHRS/ABHRS physicians also feel the need for additional credibility than that provided by the ISHRS/ABHRS so that they spend tens of thousands of dollars each year to join sites such as the IAHRS and HairTransplantNetwork. These websites are not Paper Tigers and, apparently, are perceived by these doctors to have gained the public's trust and to be worth the money spent for membership. We physicians of the ISHRS and ABHRS need to admit that we do not all behave in the most ethical manners. We need to win the public's trust the uncomfortable way, by policing ourselves and by establishing organizations that have the mechanisms to earn the public's trust.◆

Editor's note: We asked the ISHRS and ABHRS if they wished to comment upon these issues and those of last month's "Controversies" column. ISHRS President Jerry Cooley feels the issue is well addressed by Dr. Knudsen's experience and opinions; Dr. Glenn Charles, president of the ABHRS, states that this is an issue he would like to discuss with his Board of Governors and that he will respond to it at a later date. —WR

Review of the OLSW

⇦ *from page 97*

Dr. Mayer displayed the proper techniques for a safe, effective, and efficient FUT surgery with emphasis on the scalp elasticity and methods to properly measure it. He demonstrated his interesting and user friendly method of measuring the scalp mobility. Dr. Parsa Mohebi demonstrated utilization of his Laxometer in measuring scalp donor laxity before and during a hair transplant surgery.

Dr. Perez demonstrated the use of violet gentian pad (Viscot) for staining the recipient sites, and Dr. Mangubat showed the tips of site making for a hair transplant patient.

Dr. Matt Leavitt demonstrated the zipper closure technique while Drs. Stough and Keene elaborated on the issue of tension of donor area in strip wound closure.

The Cadaver Station operated by Patrick Tafoya was another highlight of the workshop. Tafoya and other OLSW faculty assisted physicians and assistants in different aspects of hair transplants on real cadaver scalps, making them more familiar with the techniques of FUE graft harvesting, removal of strip, and closing. The cadaver station also helped technicians learn how to make slivers from real cadaver strips. Technicians also got the chance to cut and place with the great synthetic models that were available to them.◆

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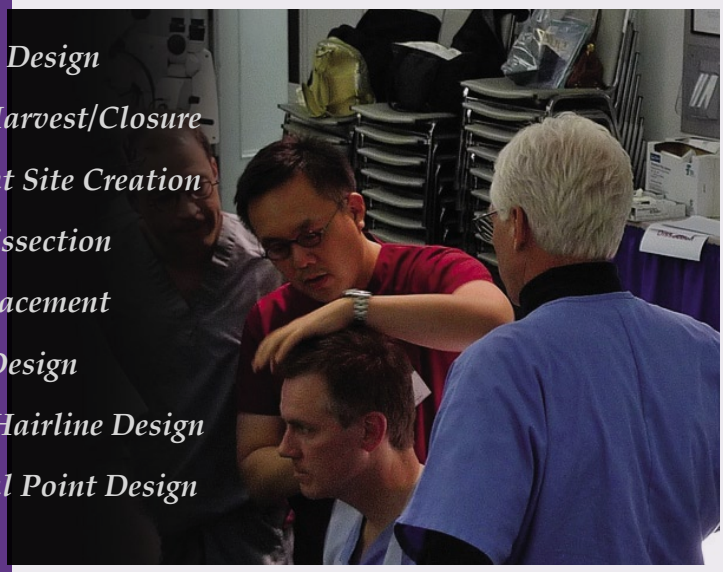

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MESSAGE FROM MARGARET DIETA, SURGICAL ASSISTANTS CHAIR OF THE 2011 ANNUAL MEETING

Hello Surgical Assistant Members:

It is with sincere excitement and honor that I serve as your Surgical Assistants Program Chair for the September 2011 ISHRS meeting in Anchorage, Alaska, USA, at the Dena'ina Convention Center.

I have been working in the Hair Restoration industry since 1996. I have primarily worked with (still do) and have followed Dr. Carlos Puig during this time. I have had the opportunity to travel all over our great nation working with other world-renowned hair restoration physicians and learning and teaching various hair restoration techniques. The ISHRS and the Orlando Live Surgery Workshop gave me the experience to teach in the Doctors Basic Courses and Surgical Assistants programs over the years as well. I absolutely enjoy what I do for a living!

I will put forth the best efforts along with our highly experienced Surgical Assistants Faculty in making the 2011 meeting an exciting and educational adventure for all levels of assisting and front office. This meeting will present new developments in our field and comparisons, as well as provide the forum for learning from and sharing knowledge with each other. I encourage assistants from around the world to come together and share their expertise. If speaking in front of people is not your forte, there are other ways you can participate and contribute; perhaps you can submit an article to the *Forum* or the Surgical Assistants Workbook.

Any and all suggestions are encouraged and welcome. If you'd like to be a part of the program, please contact me: Margaret@HairRestorationHouston.com. If you would like to submit pictures for the workbook, please e-mail them with a brief explanation as well.

Looking forward to hearing ideas and suggestions from each of you!

Warmest regards,

Margaret Dieta

2011 Surgical Assistants Chair

www.ISHRS.org/AnnualMeeting.html

"New Vistas and Trusted Techniques in Hair Transplant Surgery"

Review of the OLSW Surgical Assistant's Program

Tina Lardner *Denver, Colorado, USA* tlardner@aol.com

This year proved to be an exciting year for the Orlando Live Surgery Workshop (OLSW) as the program integrated a Graft Cutting and Placement Workshop for surgical assistants. Patrick Tafoya directed the workshop with a brief presentation on graft cutting and placement techniques. After the presentation, attendees were divided into different stations where they learned how to cut and place synthetic grafts. They were also able to use lifelike "scalps" to place the grafts. Each scalp was designed for both novice and experienced assistants, giving everyone an opportunity to try a scalp based on their skills. The use of synthetic grafts and scalps was beneficial as it gave a lifelike feel of tissue without the fear of damaging real tissue. Other experienced assistants helped at each station giving advice on proper handling of tissue and body mechanics. Afterwards, all of the physicians and assistants utilized the next three days to practice dissecting and slivering on cadaver tissue and continued implantation practice utilizing the silicone scalps.◆

L: Cutting and placing workshop. *R:* Tina Lardner and Patrick Tafoya.

Surgical Assistants Corner

Patrick Tafoya *Orlando, Florida, USA* patrickatafoya@yahoo.com

I want to express my appreciation to all who attended and assisted at this year's Assistant's Workshop held at the 2011 Orlando Live Surgery Workshop. I would like to especially thank Tina Lardner, Laurie Gorham, RN, and Margaret Dieta who also assisted in the 3-day Cadaver Workshop.

I am looking forward to next year and hope to see more of you there. The OLSW provides hands-on experience for both the novice and experienced assitants, as noted in Tina Lardner's review on page 100. Another great place to learn is at the 2011 ISHRS Annual Scientific Meeting to be held in Alaska this September. Make plans now to attend. Hope to see you there!

The pace of wound healing

Joanne Scannell, RN, HRBR Ltd, Samson House *Blackrock, Co. Dublin, Ireland* Joanne@hrbr.ie

The pace of wound healing is a seminal issue in hair transplantation. The body will not grow new hair until the wounds in the skin are completely healed. Poor healing can affect the blood supply to the follicle and can, anecdotally at least, often result in a frizzy appearance to the transplanted hair. This is not an outcome that our patients expect when undergoing a transplant.

To optimise the chance of uniformity of growth and to encourage a robust follicle, wound healing should be upper-most in the minds of the transplant team. Before the 20th century, wounds were traditionally treated by cleansing them and leaving them dry, allowing the wound to "breathe." Ointment or oil was used to help prevent infection. Throughout the first part of the 20th century, a dry wound was the standard of care.[1]

It was not until 1958 that Odland first reported that an unbroken blister healed faster than one that was opened.[2] In 1962, Winter found that induced wounds in pigs occluded with a polyethylene film more than doubled wound epithelialization compared to no occlusion.[3] A year later, Hinman and Maibach established that occlusion (as opposed to air exposure) speeded healing in experimental human skin wounds.[4]

Those early hallmark studies demonstrated that covering the wound allowed a beneficial "moist wound healing" environment. Today, it is widely recognized that moisture is key to wound healing.[5-7] Air exposure desiccates a wound, increasing surface necrosis depth by 0.2-0.3mm every 2 to 3 hours.[8] Eschar formation impedes epithelial cell migration because cells must migrate from the wound edge and travel under the eschar base. Moisture increases re-epithelialization rates by 30 to 50%.[9] Epithelialization of moist wounds begins 3 days earlier than in wounds that are allowed to dry, and moist wounds heal 2 to 6 times faster.[10]

Why do moist wounds heal faster than dry wounds? The precise mechanisms are not fully understood. In 1962, Winter proposed that moisture prevented a crust from developing, which would impose a barrier to epithelialization.[11]

Winter's research is based on the case of occlusive dressings, but, in hair restoration surgery, we are unable to use occlusive dressings on the recipient or donor areas—although we can adhere to his basic principle that moist wounds heal 2 to 6 times faster than dry wounds by spraying with water the recipient area throughout the surgery. This water will run down onto the donor area keeping it moist. We can then educate the patients and encourage them to spray both the donor and recipient areas regularly until the wounds are healed.

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Seeking Doctors to Submit Difficult Cases

The Difficult Cases session moderated by Dr. Tony Mangubat with a stellar panel of hair transplant experts has become one of the most interesting and educational forums at our Annual Meeting. You are invited to submit a "difficult case" that you request help with or that you have performed that could be presented for the education of others. Submitted cases with the most educational value will be selected.

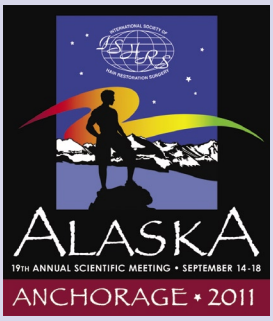
Send your brief case summary with pictures to mayer4sd4@aol.com and tony@mangubat.com.

Seeking Doctors to Bring Patients for Live Patient Viewing

This is an excellent opportunity for you to show off your work! If you are not familiar with the format, physicians bring a patient with a completed result for the attendees of the meeting to see, touch, inquire of, etc. The doctor displays a poster that outlines the details of the case. This is not the format to show off the typical follicular unit transplant.

We are looking to showcase interesting and unusual cases such as:

- FUE (full restoration)
- Megasessions
- Eyebrows/eyelashes
- A new technique
- Scalp surgery/flaps
- Reconstruction—trauma, radiation, etc.
- Repair—plugs, donor scars
- Operation Restore cases
- Complications
- A challenging restoration on a patient who was in a hair system previously



The ISHRS does not reimburse physicians for the expenses involved in bringing patients to this event. It is seen as a privilege to serve as faculty for this event and present your patient's surgical results to your colleagues.

If you think you would like to participate, please email Dr. Robert Niedbalski at drniedbalski@gmail.com. If you are unsure if the case is what we are looking for, please ask!

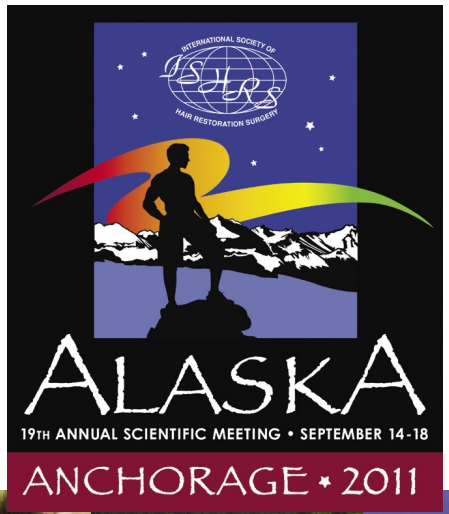
Anchorage, a modern city set amidst the vast expanse of Alaskan wilderness, will host this year's premier international conference on hair transplant surgery.

PLAN TO ATTEND: www.ISHRS.org/AnnualMeeting.html

Surgeons and staff will not want to miss this robust conference of thought leaders on the frontiers of best practices. The refreshing and friendly atmosphere of Alaska will invigorate each day of the conference. Pristine waters and breathtaking views of the Chugach Mountains and Mt. McKinley are the backdrop for up close wildlife adventures and glacier excursions, visionary lectures, hands-on workshops and networking events. ***Inspired by nature's wild beauty and the highest caliber of educational presentations, this year's event promises to be a trip of a lifetime!***

Newcomers Are Welcome!

As a result of the positive feedback from the past two annual meetings, we will again offer a "Meeting Newcomers Program" to orient those who are new to the ISHRS annual meeting. Newcomers will be paired with hosts. We want to welcome you, introduce you to other colleagues, and be sure you get the most out of this meeting.



Many exciting formats and topics are being planned for the 19th Annual Scientific Meeting, including a full day, hands-on **Basics Course** in Hair Restoration Surgery utilizing cadaver scalp, a full day **Advanced/Board Review Course**, a full day **Surgical Assistants Program**, several **morning workshop** on specific topics, a **Surgical Assistant Cutting/Placing Workshop** utilizing cadaver scalp, **lunch symposiums, Breakfast with the Experts table** discussion groups, **Live Patient Viewing**, several **controversy panels**, a **high definition surgical video theater**, a **hairline design panel**, use of an **audience response system** to keep the sessions exciting and dynamic, a full **exhibits** program, and many opportunities for **socializing and networking**.

Plan Your Pre- And Post-Meeting Activities Early! Wildlife and Glacier Cruises ▪ Flight seeing – glaciers, Denali ▪ Sea kayaking, River rafting, float trips • Dog sledding ▪ Rainforest and alpine hiking, glacier hiking ▪ Bear viewing ▪ ATV tours ▪ Fishing ▪ Canyoneering, rock climbing, ice climbing

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Advancing the art and science of hair restoration

Upcoming Events

Date(s)	Event/Venue	Sponsoring Organization(s)	Contact Information
DIPLOMAS			
Academic Year 2011–2012	Diploma of Scalp Pathology & Surgery U.F.R. de Stomatologie et de Chirurgie Maxillo-faciale; *Paris, France*	*Coordinator:* Pr. P. Goudot *Directors:* P. Bouhanna, MD, and M. Divaris, MD	Tel: 33 +(0)1+42 16 13 09 Fax: 33 + (0) 1 45 86 20 44 *sylvie.gaillard@upmc.fr*
January 2012	International European Diploma for Hair Restoration Surgery	*Coordinator:* Y. Crassas, MD, University Claude Bernard of Lyon, Paris, Dijon (France), Torino (Italy), Barcelona (Spain). Department of Plastic Surgery *www.univ-lyon1.fr*	For instructions to make an inscription or for questions: Yves Crassas, MD *yves.crassas@wanadoo.fr*
June 24-26, 2011	1st Annual Asian Association of Hair Restoration Surgeons Scientific Meeting *Pratumwan Princess, Bangkok, Thailand*	Asian Association of Hair Restoration Surgeons *www.aahrs.asia*	Sungjoo "Tommy" Hwang, MD, PhD *hairhwang@gmail.com*
September 14-18, 2011	19th Annual Scientific Meeting of the International Society of Hair Restoration Surgery *Anchorage, Alaska, USA*	International Society of Hair Restoration Surgery *www.ISHRS.org*	Tel: 630-262-5399 Fax: 630-262-1520
October 14-16, 2011	3rd Annual Hair Restoration Surgery Cadaver Workshop *St. Louis, Missouri, USA*	Practical Anatomy & Surgical Education, Center for Anatomical Science and Education, Saint Louis University School of Medicine in collaboration with the International Society of Hair Restoration Surgery *http://pa.slu.edu*	http://pa.slu.edu
November 12-13, 2011	3rd Annual Meeting of the Association of Hair Restoration Surgeons of India (HAIRCON-2011) *Mumbai, India*	Association of Hair Restoration Surgeons of India *www.ahrsindia.org*	Tel: +91-9821308411 *drrajeshrajput@gmail.com*

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Dates and locations for future ISHRS Annual Scientific Meetings (ASMs)

2011: 19th ASM, September 14-18, 2011
Anchorage, Alaska, USA

2012: 20th ASM, October 17-21, 2012
Paradise Island, Bahamas

2013: 21st ASM, October 23-27, 2013
San Francisco, California, USA