



 Video Available Online

Video 1. Supplemental Digital Content 1 shows surgical anatomy and technique for raising the transverse adductor magnus peninsular perforator local flap, <http://links.lww.com/PRS/A762>.



Fig. 2. The left ischial pressure sore as seen healed by this transverse adductor magnus peninsular perforator flap 4 months later, with the scar in the buttock crease following primary donor-site closure.

ranging from 3 months to 7 years and with no recurrence. Primary donor-site closure was possible in all patients.

As Allen et al.⁵ have shown to be possible for breast reconstruction, a transverse-oriented buttock crease peninsular flap can be as large as 7 × 27 cm. If based medially about the requisite adductor magnus perforator, closure of the majority and certainly the medium or smaller ischial pressure sore can be routinely possible as a local flap. If this version is selected as the primary option, other thigh and buttock perforators remain available to permit treatment of recurrences or other pressure sore sites with other local flaps, which is not an unusual concern in this subset of patients.

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The Inaugural Congress of the International Society of Plastic Regenerative Surgery

Sir:

Plastic surgeons have been performing fat grafting for over a century, but it was only recently that we realized that transplanting adipose tissue involved more than augmenting soft tissue in the various parts of the body. “Stem cells,” “preadipocyte cells,” and other related terms are not only entering our vocabulary but also influencing our daily clinical practice. Fat grafting or regenerative surgery may have tremendous potential to solve many clinical problems facing plastic surgeons, from simple to the most complex, in the near future.

The International Society of Plastic Regenerative Surgery was created to promote the study of “regenerative plastic surgery,” those forms of plastic surgery that take advantage of our own body’s ability to repair, remodel, and enhance itself (Tables 1 and 2). The inauguration meeting for founding the International Society of Plastic Regenerative Surgery took place in Vancouver, British Columbia, Canada, May, 2011, during the 16th International Confederation of Plastic, Reconstructive and Aesthetic Surgery World Congress.

The first congress of the newly formed International Society of Plastic Regenerative Surgery took place in Rome, Italy, from March 9 to March 11, 2012. An overwhelming number of abstracts were submitted to the congress from every continent on a broad range of basic science, translational research, and clinical subjects.

Table 1. Thirty-Four Founding Members of the International Society of Plastic Regenerative Surgery

Name	Country
Marita Eisenmann-Klein	Germany
Gino Rigotti	Italy
Andreas Yiacomettis	Greece
Roger Khouri	United States
Lee Pu	United States
Riccardo Mazzola	Italy
Alessandra Marchi	Italy
Andrea Grisotti	Italy
Greg Evans	United States
Dan Del Vecchio	United States
José Guerrerosantos	Mexico
Abel Chajchir	Argentina
Nelson Piccolo	Brazil
Brian Kinney	United States
Peter Rubin	United States
Theodoros Voukidis	Greece
Wanda Elizabeth Corrêa	Brazil
Ahmed Adel Noreldin	Egypt
Sydney Coleman	United States
Norbert Pallua	Germany
Marta Markowicz	Germany
Kotaro Yoshimura	Japan
Guy Magalon	France
Tim Marten	United States
Neeta Patel	India
Tom Biggs	United States
Emanuel Delay	France
Maurizio Nava	Italy
Tom Baker	United States
Jim Carraway	United States
Rod Rohrich	United States
Ewaldo Bolivar de Souza Pinto	Brazil
Michael Schneider	Norway
Jan Poell	Switzerland

This first congress of the International Society of Plastic Regenerative Surgery focused specifically on bridging the gap between basic and translational research and many forms of fat grafting. The scientific program highlighted adipose tissue-based technologies and procedures to help the attendees better understand how the human body can be enhanced, remodeled, and restored through the manipulation of adipose tissue, adipose tissue-derived repair cells, and growth factors (Figs. 1 and 2). The abstract submissions were combined with presentations from a stellar invited faculty to create a diverse, exciting, and

Table 2. International Society of Plastic Regenerative Surgery Executive Committee

Office	Name	Country
President	Gino Rigotti	Italy
Vice President	Roger Khouri	United States
Secretary General	Sydney Coleman	United States
Assistant General Secretary	Alessandra Marchi	Italy
Treasurer	Norbert Pallua	Germany
Parliamentarian	Andreas Yiacomettis	Greece
Member	Brian Kinney	United States
Member	Lee Pu	United States
Executive Manager	Zacharias Kaplanidis	Greece

informative program comprising 90 speakers and 36 moderators.

Interest in the congress was so overwhelming that registration closed in December, 3 months before the meeting, and over 200 people were turned away. The meeting rooms were able to accommodate a standing room-only audience of 275 registered attendees from 55 countries.

The congress lasted 3 full days, and its scientific program is summarized in Table 3. The first day emphasized the mechanism of fat grafting, stromal vascular fraction, adipose-derived stem cells, and growth factors. The second day explored many uses of fat grafting in clinical settings. The third day focused on clinical aspects of fat grafting to the breasts with an instructional course in the afternoon.

The opening session looked into the history of fat grafting and fat injection beginning in 1908 and continuing to the recent past. The functional uses of transplanted fat were recognized by plastic surgeons over 100 years ago.

The second session was designed to answer specific questions about the science of fat grafting, stromal vascular fraction, adipose-derived stem cells, and growth factors. Panelists explained the mechanism of fat survival and gave insight into the process by which fat grafts and stem cells can potentially repair surrounding tissues.

The longest session of the day, session 3, examined the stromal vascular fraction of adipose tissue. A panel composed of plastic surgeons with expertise in the area of stromal vascular fraction answered the questions “How many stem cells and stromal vascular fraction cells are in harvested fat?” and “What is in stromal vascular fraction and how can we be sure?” A discussion ensued on the methods of isolating stromal vascular fraction from fat currently in use and in development.

The last section of the third session turned to the practical uses of stromal vascular fraction in breast procedures, supported by anecdotal evidence of success. Next, attention was turned to the practicalities of using stromal vascular fraction, specifically examining various scaffolds and matrices used as media for placement of stromal vascular fraction into tissues.

The morning concluded with session 4, a thorough examination of the potential for storage of stromal vascular fraction and adipose tissue and its associated problems. This session ended with a sobering look into the regulatory issues of tissue banking.

After lunch, session 5 explored the science of fat grafting, examining the scientific methods of determining how each step in the fat grafting process influences tissue viability and survival. Every attempt was made to include evidence-based data. Individual sections followed this on harvesting, refinement, and placement of adipose tissue.

Session 6 addressed the question, “How can we improve predictability and the effect of fat and stromal vascular fraction?” These talks related the presenters’ experience with lasers and additives such as platelet-rich plasma to improve survival.

Session 7 focused on safety issues of fat grafting along with complications and their management.



Fig. 1. The first International Society of Plastic Regenerative Surgery congress main meeting hall in Hotel Columbus, a historical hotel within the Vatican.

Particular attention was paid to catastrophic complications and infections. A panel followed in which many of the experienced faculty related their worst and most common complications and how to avoid them.

The last session of the day examined worldwide government regulations; judicial developments; and ethics concerning fat, stromal vascular fraction, and adipose-derived stem cells. The regulations for processing human tissue and the use of the tissue for clinical application in the United States and Europe were presented by the leaders from each continent. Professional society recommendations were also discussed.

The next day focused on clinical fat grafting. Each session explored a different indication for fat grafting. Session 9 began the day with fascinating presentations on the effect of fat grafting on acute, subacute, and chronic wounds. Compelling photographs were shown of fat grafts used in acute traumatic wounds, and nonhealing ulcers and amputations. Fat grafts were shown to be successful in treatment of acute burns, therapeutic radiation damage, scar contractures, keloids, and other scars. Remarkable healing was demonstrated in ulcers and fistulas treated with fat grafts. When possible, anecdotal reports were



Fig. 2. The first International Society of Plastic Regenerative Surgery congress adjacent second meeting hall.

Table 3. Highlights of the Entire Scientific Program

	Topic
Day 1, Friday, March 9, 2012	
Session 1	Introduction and historical perspectives
Session 2	The biology of fat, SVF, and ADSC in fat grafting
Session 3	SVF and ADSC: Isolation and clinical use with panel discussion
Session 4	Storage of harvested fat and SVF
Session 5	Techniques of fat grafting
Session 6	Maximizing and understanding results of clinical fat grafting
Session 7	Safety issues with fat grafting, SVF, and ADSC with panel discussion
Session 8	Professional society recommendations; government regulations; and ethics concerning fat, SVF, and ADSC
Day 2, Saturday, March 10, 2012	
Session 9	Treatment of acute, subacute, and chronic wounds
Session 10	Fat grafting to the breast (part I)
Session 11	Facial fat grafting
Session 12	Corporal fat grafting
Session 13	Treatment of other diseases with fat and SVF
Session 14	Future applications
Day 3, Sunday, March 11, 2012	
Session 15	Fat grafting to the breast (part II) with panel discussion
Instructional course on fat grafting to the breast	
Technique	
Augmentation	
Reconstruction	
Round tables	
How to avoid the learning curve	
Failures and complications	

SVF, stromal vascular fraction; ADSC, adipose-derived stem cells.

interspersed with scientific studies, which supported the specific indications.

Session 10 returned to the science of fat grafting with discussions of the scientific background behind reverse expansion with an external vacuum to prepare for fat grafting and to culture fat tissue. Different methods of imaging to determine volumetric changes after grafting fat were discussed, aimed primarily at evaluation of breasts. Then, a long section on the safety issues of fat grafting—specifically, for the breast—began with the reports of studies of potential interactions of cancer cells with transplanted breast tissue. This was followed by many epidemiologic studies evaluating the occurrence or recurrence of breast cancer after fat grafting.

The direction returned to clinical presentations of fat grafting to the head and cranium, both aesthetic and reconstructive, with session 11. This was our longest session (over 3 hours), and was divided by lunch. The ability of fat to create fullness was clearly presented, but the most fascinating observations concerned the quality of skin after fat grafting. Most of the presentations showed dramatic improvement in the texture and color of the overlying skin after fat grafting to the face.

Session 12 concentrated on corporal fat grafting, especially for the buttocks and lower extremities. Session 13 explored other conditions and diseases that have been treated with fat grafting, including scleroderma and vocal cord scarring and paralysis. The day ended with session 14, in which future applications of fat grafting adipose-derived stem cells and stromal vascular fraction were proposed, such as bioengineered breasts and the regeneration of nerves and muscles.

The entire last day was devoted to the techniques of fat grafting in breast surgery, both aesthetic and reconstructive. The congress officially ended with a panel discussing the clinical indications for reverse expansion. The remainder of the day was an instructional course given by the faculty members most experienced in the techniques of fat grafting to the breasts.

The response to this new Society was immediate and large (approximately 400 new members), and it peaked with the tremendous success of the First Congress of the International Society of Plastic Regenerative Surgery. The presentations for the 3 days were uniformly of the highest quality, and the congress was a worldwide sharing of knowledge, research, and clinical experience previously unseen. The International Society of Plastic Regenerative Surgery is planning the next congress on June 7 through 9, 2013, in Berlin, Germany; and then June 12 through 14, 2014, in New York City. To expand the worldwide impact of the meetings, the 2015 meeting is planned for Rio de Janeiro and the 2016 meeting is planned for Asia. The attention of future meetings will expand to include regenerative technologies of every type with potential uses for plastic surgeons. We all will be fortunate to be a part of this exciting journey.
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A Multimedia Approach for Surgical Training

Sir:

Technical competence is the foundation of surgery. Surgical training programs are in a constant search to find the optimal way of imparting surgical skills to their trainees. Historically, surgical training involved reading textbooks, relying on still visuals, and then applying this knowledge in the operating room. This method, however, is evolving in the new era of training, which must comply with work-hour restrictions while demanding increases in efficiency. In plastic surgery, a field replete with technically challenging operations, adequate and appropriate preparation before the operative experience remains essential. Given this background, a potential answer relies on harnessing the power of technology to train surgical residents.

Accordingly, our institution has launched a series of multimedia initiatives ranging from videos on operative techniques to a surgical lecture series. The Department of Surgery server contains multiple videos on surgical techniques, which imparts residents an understanding of the relevant anatomy and surgical approach before the operation.¹ Rather than learning the steps of an operation through static text and images, this dynamic teaching style proves engaging and simultaneously facilitates spatial orientation. Ultimately, the surgical resident gains an improved understanding of the operative steps that aids in execution.

Furthermore, the Internet and its ease of accessibility through devices such as iPads and smartphones have led to the development of apps and subsequent increases in multimedia content. Although videos have been used sparingly in the past, their quality and accessibility have changed significantly. Textbooks and journals now dedicate a significant portion of their content to multimedia. For example, the journal *Plastic and Reconstructive Surgery* offers an impressive series of multimedia features, including videos by the authors.² Not only does the reader gain the benefit of learning from the expert in the field, but he or she can have instant access to this

knowledge because of the ubiquitous nature of the Internet.

Plastic surgery journals are aware of these changes and have followed the trend by releasing apps for the iPad.³ These applications allow interested surgeons an ability to use these resources for their education, particularly for infrequently performed operations.⁴ Many residents have the opportunity to operate on patients in a resident cosmetic clinic but may not have a thorough understanding of the operative steps because of an inconsistent exposure to the procedures being performed—*Plastic and Reconstructive Surgery* shifts the learning curve as residents and surgeons can now instantaneously view a multitude of aesthetic multimedia features ranging from oculoplastics to operative techniques from the Baker-Gordon series.² Considering the growing demand and variety in techniques in plastic surgery, this is a significant advance in the training of the next generation of plastic surgeons. Soon, *Plastic and Reconstructive Surgery* will expand this popular section and establish an online compilation of surgical procedures to resource-constrained areas.

Surgical education in the modern era is enhanced with technological advances that give the opportunity for educators to use multimedia to improve learning. As Sun Tzu states, every battle is won before it is ever fought. Surgery is no exception.

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