

The Face of Plastic Surgery

NewYork-Presbyterian Hospital, Division of Plastic Surgery
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Message from the Director

Robert T. Grant, MD, FACS

I am pleased to present to you the second edition of the Division of Plastic and Reconstructive Surgery newsletter. As a collaborative division of Weill Cornell Medical College and the Columbia University College of Physicians and Surgeons, we practice at both NewYork-Presbyterian Hospital campuses. The division continues to grow and innovate. We have recently completed recruitments of four surgeons with specialized expertise to the division's bi-campus faculty. We extend a warm welcome to Drs. Felix Raymond Ortega, Christine Rohde, Samuel Rhee, and Jason Spector, whose work in microsurgical reconstruction, pediatric craniofacial surgery, and body contouring surgery is highlighted in this issue.

As our program has expanded, our ability to serve local, regional, and broader patient communities has also grown. With a firm commitment to providing accessible, affordable

care, we offer free screenings to surgical candidates several times each year. We are always happy to answer questions from prospective patients by phone.

Educating residents and new surgeons continues to be a primary focus for the division, as we believe that being leaders in transforming healthcare requires not just an active clinical practice of plastic surgery, but also a desire to be outstanding educators for others. During the past year we have expanded our residency program to include rotations at Lenox Hill Hospital and Harlem Hospital Center, which gives our residents new opportunities to care for a broader range of patients in the wide spectrum of care settings. The program remains fully accredited by the



Top (L-R): Drs. Lloyd B. Gayle, Felix Raymond Ortega, Mia Talmor, Robert T. Grant, Jeffrey A. Ascherman, Jason Spector. Bottom: Drs. June Wu, Christine Hsu Rohde, Samuel Rhee.

ACGME. Application for admission remains extremely competitive among our prospective residents.

As always, we continue to seek ways to make plastic surgery as safe as possible. As part of this commitment, we provide free public events on a regular basis. Our annual Patient Safety in Plastic Surgery conference educates surgeons about best practices.

For more information about our services, please visit our web site or call my office directly at 212.305.3103.

Pediatric Craniofacial Program Expands

One of the core components of the Division of Plastic and Reconstructive Surgery is its bicampus pediatric craniofacial center. The center treats newborns, children, and adolescents (and some adults) with deformities of the face, eyes, ears, jaw, and head. A multidisciplinary program, its success depends upon close collaboration among diverse specialists, including pediatricians, oral surgeons, geneticists, orthodontists, speech pathologists, plastic surgeons, ophthalmologists, neurosurgeons, otolaryngologists, pediatric dentists, therapists, social workers, and

others. Conditions commonly treated at the craniofacial center include cleft lip and palate, craniofacial syndromes and other congenital deformities, reconstructive problems that may result from injury, vascular malformations, burns, and scars.

At the heart of the craniofacial center is its regular team meeting and clinics. Begun about 15 years ago, the monthly meeting involves about 50 specialists from a dozen disciplines who gather to meet for lectures and discussion of current patients' cases. "This is the best example of multidisciplinary cooperation I've

ever seen," says Jeffrey A. Ascherman, MD, Chief of Plastic Surgery at NewYork-Presbyterian/Columbia University Medical Center and Director of the Craniofacial Center at Morgan Stanley Children's Hospital of NewYork-Presbyterian/Columbia. "The long-term treatment plan for each child may require multiple steps, such as treatment by an orthodontist, a plastic surgeon, a speech pathologist, and more. We discuss this plan in person and coordinate it together, and then send a report to the family and referring physicians to keep them updated. This team approach is unique,

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After Weight Loss, Body Contouring Completes Transformation

Increasing numbers of people are undergoing surgery for weight loss, also called bariatric surgery. An inevitable effect of rapid weight loss is the development of excess areas of hanging skin that once stretched over a larger body. After losing a significant proportion of their weight, many bariatric surgery patients in time choose to have their excess skin surgically removed, which restores a proportional body appearance.

According to Christine H. Rohde, MD, Assistant Professor of Clinical Surgery at the



A formerly obese male patient before (l) and after (r) mastopexy and tummy tuck surgery

Columbia University College of Physicians and Surgeons, body contouring surgery may involve a number of procedures. “Patients may want to remove excess skin from head to toe,” she says. Common body contouring procedures include face lift, neck lift, mastopexy (breast lift), brachioplasty (arm lift), abdominoplasty (tummy tuck), and lower body lift (thighs and hips). Some people elect to have multiple procedures, while others focus on just one area.

For some patients, the decision to have

body contouring surgery has cosmetic motivations, such as wanting to look more trim and wanting to be able to fit into clothing better, Dr. Rohde says. For others, excess abdominal skin may interfere with hygiene and cause rashes or infection, making such surgery more of a reconstructive necessity. In some cases, especially abdominoplasty, insurance sometimes covers the costs of body contouring surgery.

Dr. Rohde's expertise in body contouring surgery is a welcome addition to the Division of Plastic Surgery, says Robert T. Grant, MD, FACS. According to Dr. Grant, “Dr. Rohde can focus her extensive clinical experience in this area to better serve the needs of our patients. She is widely published on the subject of reconstruction after major weight loss, and she continues to participate in outcomes studies aimed at improving our patients' post-operative results.”

While body contouring surgery aims to give patients a pleasing aesthetic outcome, the division places the highest priority on patient safety and avoiding complications after surgery. “Depending on the patient's medical status, we may be able to combine certain procedures. In some cases, body contouring may involve a series of procedures, each separated by three months,” says Dr. Rohde.

Body contouring surgery can require lengthy operations and recovery time. Dr. Rohde works with patients to determine the optimal timing for surgery, and to help them to have realistic expectations about their post-surgical recovery and appearance. ■

Microsurgical Reconstruction Yields Excellent Cosmetic and Functional Results

Microsurgical reconstruction, or microsurgery, is a new technique that allows surgeons tremendous freedom to perform complex reconstructive surgery. The technique involves use of the operating microscope to reconstruct three-dimensional wounds by taking tissue from one part of the body and moving it to another area. Such operations can involve reconstruction of skin, bone, muscle, fascia, or combinations of any of these tissues.

At NewYork-Presbyterian Hospital, two recently recruited surgeons specialize in microsurgical reconstruction and perform microsurgery on every part of the body. In a given day, Christine H. Rohde, MD, Assistant Professor of Clinical Surgery at the Columbia University College of Physicians and Surgeons, and Jason Spector, MD, Assistant Professor of Clinical Surgery at Weill Cornell Medical College, might perform microsurgery to repair parts of the body as diverse as the jaw, the scalp, the foot, the breast, and the bones of the leg.

Drs. Spector and Rohde perform many

microsurgical procedures together, alternating between the two campuses of NewYork-Presbyterian Hospital. “Operations of this magnitude require a team approach,” says Robert T. Grant, MD, FACS, Plastic Surgeon-in-Chief. “While one surgeon is elevating tissue, the other can prepare the site for tissue transfer. This saves time, and it allows for better care after surgery because there are more surgeons available who are knowledgeable about each patient.”

According to Dr. Rohde, microsurgery can give patients superior cosmetic and functional results that exceed those of other types of reconstruction. If someone has paralysis of the face from Bell's palsy, microsurgery can be used to restore movement to the facial muscles by transplanting nerves harvested from leg tissue. In one recent procedure, Dr. Rohde removed the fibula and used it to create a jawbone for a patient with cancer. In the case of the reconstructed jawbone, living bone will allow the patient to have dentures implanted, and to use that side in chewing and speaking,



“Older types of non-living bone grafts never had that degree of strength or durability, so patients could not speak or chew on that side. In addition, the jaw would frequently shift so there would be asymmetry in the appearance of the face,” explains Dr. Grant. “This represents a great paradigm shift in terms of both function and appearance.” The main reasons microsurgery is not more widely practiced are its complexity and its steep learning curve, he says.

Before microsurgery, surgeons were limited to using adjacent tissues to cover or reconstruct wounded areas of the body. Part of the skin and its blood vessels had to remain in their original location in order to flip part of the skin around and have it survive in its new location. In microsurgical reconstruction, surgeons transfer not just skin, but the attached blood vessels, so that the new flap is directly connected to the patient's blood supply. The sutures connecting these vessels are smaller than the width of a human hair.

Microsurgical reconstruction of the breast

The traditional method for performing reconstruction after breast cancer is to remove abdominal muscle tissue and skin, and use these tissues to reconstruct a new breast. This procedure, commonly called the TRAM flap (*transverse rectus abdominis myocutaneous donor site*), can result in an increased risk of abdominal hernia and reduced abdominal strength. Such concessions have been accepted because transfer of the muscle tissue was needed in order to provide adequate blood supply to the newly created breast.

With microsurgery, it is possible to harvest just the skin, or the skin and a small part of the underlying abdominal muscle, and using the microscope, connect the small blood vessels into their new home. Known as the free TRAM or the DIEP flap (*deep inferior epigastric perforator*), these procedures take several hours longer to perform than traditional surgery, but patients recover more quickly than after traditional surgery, and cosmetic results are very good. Some experts believe that in addition to sparing the abdominal muscles, microsurgery may provide a better blood supply than that used in traditional reconstruction.

The popular media is currently portraying the DIEP flap as the state-of-the-art choice for women undergoing mastectomy. For some women, this may well be the most appropriate choice. Because microsurgery may yield the best functional and cosmetic outcome to both the breast and the abdomen, it can be particularly appropriate for younger women, who may expect to live many years with their reconstructed breast(s).

It is not the right choice for every woman, however, and Dr. Rohde presents all options to her patients. "For some women, a quick and easy return to normal activities is very important, so breast implants are their treatment of choice. The most important consideration may be avoiding the long recovery period following complex surgery. Other women care most about using their own tissue for cosmetic reasons because it is more natural looking. All of these cosmetic and lifestyle issues must be carefully considered," Dr. Rohde explains. Dr. Spector points out that it is not possible to do microsurgical breast reconstruction in all women, particularly women who are very obese. "If the anatomy is favorable, we can do it," he says. It is important to speak with the plastic surgeon to determine which option is best for each individual.

Tissue Engineering Research

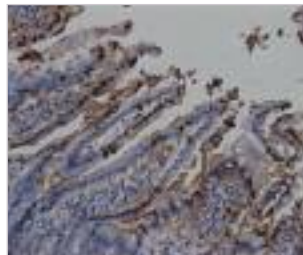
In conjunction with his surgical practice, Dr. Spector is conducting multiple research projects in his tissue engineering laboratory. In one study, he is working to develop vascular-

ized tissue matrices (freestanding flaps of skin-like structures with blood vessels) using stem cells and progenitor cells. If successful, these grafts could be transplanted where new skin is needed without having to perform harvesting operations elsewhere on the body.

In a second project, Dr. Spector is using human growth factors and progenitor cells to try to improve the rate and degree of wound healing.

A third study aims to protect cells during the vulnerable period between harvest and transplant. After flaps of skin are detached from one part of the body, he explains, the lack of blood supply causes a portion of cells to die. Dr. Spector is investigating whether hydrogen sulfide, an important intracellular messenger, might make these tissues more tolerant to lack of blood flow, and able to perform better after transplant.

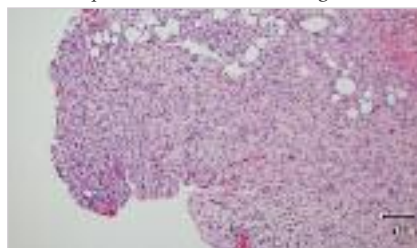
Yet another investigation aims to develop a microprobe to monitor the health of transplanted tissues. According to Dr. Spector, the most difficult part of microsurgical reconstruction is postoperative monitoring. If this project is successful, a thin filament inserted into tissues could measure levels of CO₂ and other markers, providing a real-time assessment of how well tissues are doing during or after surgery. ■



Research by Dr. Spector has found hydrogen sulfide can help preserve tissues between harvest and transplantation. Left: Treated tissue showing minimal cell death (brown cells) and conservation of microstructure.



Above: Dr. Spector's laboratory is also investigating the use of an investigational bioadhesive based on natural body compounds to minimize inflammation and cellular damage. This could improve results after many types of ablative procedures. Below: Looking deeper into the same wound, the presence of plasma cells and neutrophils indicates normal healing.



Is Cosmetic Surgery Right for You?

Those interested in plastic surgery can learn more about their options at a free, confidential screening with a member of the NewYork-Presbyterian Hospital Center for Aesthetic Surgery.

- Arm Lift • Breast Augmentation
- Breast Lift • Breast Reduction
- Brow Lift • Restylane • Tummy Tucks
- Liposuction • Face, Neck and Eye Lifts
- Nose Surgery • and more

Please call for dates and times.

Location: Herbert Irving Pavilion, Ste. 601

Registration required: 800.543.2782

Golf Outing: Fundraiser for Pediatric and Craniofacial Center

The Pediatric and Craniofacial Center at the Weill Cornell Campus of NewYork-Presbyterian performs many medically necessary procedures that insurance does not cover. Moreover, caring for children born with cleft lips, palates, and other craniofacial anomalies requires many more resources than are available to parents of these children. Proceeds from the Inaugural Golf Outing will provide direct support for the Pediatric and Craniofacial Center. Join us for a fun-filled day of golf, for a dinner celebrating Dr. Dicran Goulian's 80th birthday, or both.

Various sponsorship levels are available.

Date: Monday, June 30, 2008

Time: 12:00 Noon Shotgun

Location: Deepdale Golf Club, Manhasset, NY

Register online at nyphplasticsgolf.com, or contact Roger Caldwell: 913.385.3900

CME: Patient Safety in Cosmetic Surgery of the Head and Neck

The Division of Plastic and Reconstructive Surgery held a CME course April 12, 2008 on safety in office-based surgical procedures. The course provided a comprehensive review of potential safety pitfalls and complications in the most common cosmetic surgery procedures of the head and neck, and was attended by plastic surgeons, otolaryngologists, dermatologists, and other clinicians.

For information on future CME courses, call 201.346.7014 or email cmr2@columbia.edu.

Contact information

NewYork-Presbyterian/Columbia: 800.543.2782

NewYork-Presbyterian/Weill Cornell: 212.821.0933

Pediatric Craniofacial Program: 212.305.4346

Microsurgery: 212.746.4532

Body Contouring Surgery: 212.342.3707



Dr. Samuel Rhee during a procedure to treat a patient with Treacher Collins Syndrome, which required repositioning of the patient's midface and lower jaw

and it facilitates excellent and efficient care of our patients. None of the physicians charge for this team discussion time; everyone volunteers in the spirit of working together to help these children," he explains.

Patient volume at the pediatric craniofacial center at Morgan Stanley Children's Hospital has increased by more than 20% since 2006, making it one of the fastest growing programs at the hospital. According to Dr.

Ascherman, much credit for the growth of Columbia's pediatric craniofacial practice belongs to June K. Wu, MD, Assistant Professor of Surgery at Columbia University College of Physicians and Surgeons. With a practice devoted entirely to reconstructive surgery in children, Dr. Wu offers particular expertise in some of the most complex conditions, such as vascular malformations.

Based on the outstanding results of the craniofacial clinic at Morgan Stanley Children's Hospital, Samuel Rhee, MD, Assistant Professor of Plastic Surgery and Director of Craniofacial Surgery at Weill Cornell Medical College, will be directing parallel monthly clinic meetings at the Weill Cornell Campus. This clinic is made possible by a generous gift to the hospital from NewYork-Presbyterian trustee David H. Komansky and his wife, Phyllis Komansky. With this gift, a multidisciplinary group of specialists will meet regularly to plan the comprehensive care of patients being treated at the Weill Cornell location.

"With all the components of care in one place, patients are treated by a global care team, and this improves the safety and quality of care. This is really a great patient

service," explains Dr. Rhee. "Children no longer have to receive care for asthma at one location and surgery at another, for example," he says. At both campuses, the craniofacial center encourages active participation by patients' families in order to help them fully understand the options available for their children.

Dr. Rhee joined the Weill Cornell faculty in 2007 in order to expand the craniofacial program at that campus, which is serving a rapidly growing pediatric population. Dr. Rhee brings special expertise in the latest techniques for craniosynostosis. He is particularly committed to advancing the use of minimally invasive techniques and biologically compatible materials, and reducing the need for blood transfusions while performing pediatric surgeries, in order to minimize the impact of the procedures on these young patients.

"Working with the craniofacial clinics is a wonderful and rewarding experience," says Dr. Ascherman. It is such a pleasure to be with so many other doctors and health care specialists who are united by a common goal—to improve the lives of these children." ■

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