

healthpoints

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COLUMBIA UNIVERSITY
MEDICAL CENTER

Department of Surgery
In affiliation with
NewYork-Presbyterian Hospital



Advances in Breast Cancer Surgery

Nipple-sparing mastectomy allows women to maintain normal breast appearance after surgery.

Most breast cancer patients who require surgery today (75%) can undergo breast conservation (lumpectomy) rather than mastectomy (removal of the entire breast). Yet many women still require or choose to undergo mastectomy, either to treat or prevent breast cancer. Such patients may have cancer in multiple areas of the breast, or be healthy but have the BRCA gene, which puts them at high risk of developing breast cancer.

Mastectomy has evolved dramatically from the early days, in which removal of the breast, all axillary lymph nodes, and chest wall muscle often left women with swollen arms, chest wall deformity, and a negative body image after surgery. In the 1970's radical mastectomy gave way to a modified form of surgery, in which the breast tissue and lymph nodes were removed but the chest muscle was left intact. Breast reconstruction was infrequently performed at that time. Technique advanced further with lumpectomy, in which the breast could be preserved by excising the cancer with a surrounding margin of normal tissue. During the early 1990's, a skin-sparing mastectomy was developed in which the nipple-areola area was removed with a central incision, breast tissue removed through that space, and the skin envelope used to rebuild the breast (using the patient's own body tissue or an implant). "This was a major improvement in technique," says **Sheldon Feldman, MD**, Chief, Breast Surgery Division.

Meanwhile, plastic and reconstructive surgeons developed techniques to reconstruct the breast during the mastectomy (rather than months or years later). Although controversial at first, immediate breast reconstruction has been shown to

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Diabetic Foot Ulcers

A new program will detect, prevent, and advance evidence-based treatment of diabetic foot ulcers.

One of the most serious complications of diabetes is diabetic foot ulcers. About one in every six patients with diabetes will develop a foot ulcer, and of those, one in four will require amputation. With a sharp and progressive increase in diabetes occurring worldwide, the prevalence of foot ulcers will continue to rise dramatically, says **Felix R. Ortega, MD**, *Director, Wound Healing Program, NYP/Columbia*.

Both type 1 and type 2 diabetes leads to neuropathy, the loss of ability to feel skin or muscle in the toes and feet due to nerve damage and impaired blood flow. Patients with neuropathy may be unable to feel blisters or sores on their feet. Unnoticed and untreated, such sores can worsen and invite infection. In addition, nerve damage from diabetes can lead to muscle damage. "When the foot muscles fail to keep the bones in their proper position, the bones can splay," says Dr. Ortega. "This causes a predisposition for bony deformities to develop, which can cause pressure points on the feet and, in turn, more wounds."

Given the prevalence and seriousness of diabetic ulcers, one might think that screening should be well organized and routine across the medical profession. Unfortunately, however, it is not. Foot ulcers are frequently overlooked during routine physical exams, and undetected by patients, they can be ignored for long stretches of time. By the time a patient seeks help from a podiatrist, often the first physician to treat a foot ulcer, it has become serious. This is why, says Dr. Ortega, it is crucial for people to be screened not only for ulcers but for their **risk factors**. "If a patient is found to have one or more risk factors, then that should lead to more frequent screenings for ulcers."

In the absence of a standard protocol for screening, Dr. Ortega and colleague **Dr. Gerald Weber**, *Attending Physician, Department of Orthopedic Surgery, NYP/Columbia*, have developed an innovative program to be implemented by NewYork-Presbyterian Hospital in Washington Heights, New York, in 2011. Called *The Diabetes Complications Detection, Treatment, and Prevention Program*, the program will provide patients with the most thorough, advanced screening and treatments available. Every patient will receive comprehensive and standardized evaluations that include a physical exam, laboratory workup, clinical biomechanical workup, neurological examination, vascular exam, and other tests designed to detect diabetic complications even before symptoms may be apparent. At the same time, the program will collect complete data on every patient in order to study the effect of specific treatment regimens among patients with particular characteristics. Randomized to different types of treatments at the NYP/Columbia Wound Healing Program, patients will be followed at

regular intervals and their data gathered for three to five years at the least. "For each subset of patients, we will be able to prospectively determine which treatments are most optimal in efficacy and avoiding untoward complications," says Dr. Weber.

This is the first time that therapies for diabetic foot ulcers will be compared in this comprehensive manner. The data gathered by the program will likely be used by the Department of Health, the National Institutes of Health, and pharmaceutical companies to conduct individual clinical studies, says Dr. Weber. "This program will advance evidence-based medicine in its truest form. Not only will this be a center of excellence for comprehensive diabetic care, but it will be a model program for detecting and preventing diabetic complications."

The program will be available to patients at NewYork-Presbyterian Hospital as well as the general public. Drs. Ortega and Weber expect to open additional locations in the near future, in order to meet the exceedingly high demand for its services. In addition to accepting insurance plans including Medicaid, grant funding secured through NewYork-Presbyterian Hospital is intended to subsidize treatment for patients without insurance. ■

For more information, call 917-882-3530 or 212-932-4325.

Diabetic Foot Ulcers: Fast Facts

- Approximately 15% of New Yorkers have diabetes.
- 45% of New Yorkers with diabetes have very poor control of their blood sugar.
- One in six diabetics will develop a foot ulcer during their lifetime.
- The number one reason for hospital admission for diabetic complications is infected foot ulcerations.
- Compared to the general population, people with diabetes are 25 times more likely to require an amputation.
- In North America, a person with diabetes has an amputation every 30 seconds.
- A comprehensive foot care program can reduce amputations by 85%.

New ECMO Program for Pulmonary Failure

New use of ECMO provides lifesaving option for adults with acute respiratory distress syndrome (ARDS).

After a missionary trip to Uganda in April 2010, 47-year-old Pamela Abma returned to New Jersey inspired and energized. When she developed high fevers six weeks later, she was shocked to learn she had malaria. Worse yet, a rare, severe response sent her spiraling into Acute Respiratory Distress Syndrome, or ARDS. If she had been anywhere else in the country, she may well have died within days.

Pam was able to share the dramatic story of her recovery because of some very fortunate events. The first occurred when her local physician suspected that Pam's condition would deteriorate, and he called **Daniel Brodie, MD, Medical Director of the Adult ECMO Program, NewYork-Presbyterian Hospital/Columbia University Medical Center**. The second occurred when Dr. Brodie brought Pam to NYP/Columbia and the ECMO team placed her on extra-corporeal membrane oxygenation, or ECMO, to allow her lungs the chance to recover.

"This was the first time we know of that ECMO has been used to treat a patient with respiratory failure from malaria," according to **Matthew Bacchetta, MD, Director of the Adult ECMO Program**. That option likely would not have been available elsewhere because other centers simply do not use ECMO in the manner that NYP/Columbia does. But NYP/Columbia was prepared for Pam's unusual case because it had already established an adult ECMO program to treat patients with acute respiratory distress syndrome, or ARDS.

ECMO is an external therapy that can be used to take over the function of the lungs, and, if necessary, the heart. "If a person's lungs are failing, ECMO can be used to directly put oxygen into the blood and remove carbon dioxide," says Dr. Brodie.

Unlike a ventilator, which can cause lung injury because it forces air into the lungs, ECMO allows the lungs to rest. "ECMO doesn't treat the underlying disease, but it allows time for antibiotics to work, for fluid to drain from the lungs, or for whatever else needs to happen in order for the lungs to recover and start working again," explains Dr. Bacchetta. In Pam Abma's case, her lungs needed time for fluid to drain out so she could begin breathing on her own, and the ECMO machine provided just that.

Although ECMO has been available for over 40 years, it has been considered an option of last resort, used sparingly in adults because

historically it had high risks of bleeding, infection, and stroke.

At NYP/Columbia, the Pulmonary Division treats a high volume of adults with ARDS, which can develop from numerous causes. Drs. Bacchetta and Brodie believed that ECMO could be used in new ways to help such patients, so they proposed the creation of a special team of pulmonologists, surgeons, and perfusionists. "We aimed to streamline ECMO, make it more routine, and to become better at it," explains Dr. Brodie.

The concept has succeeded well beyond the team's initial hope. In the four years since its inception, the adult ECMO program has treated 25 patients in the Medical ICU, two thirds of whom have recovered from very severe respiratory failure.

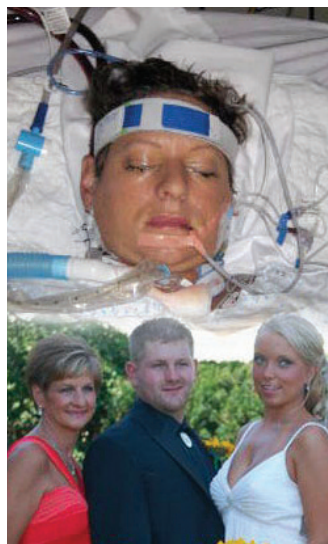
Evolution of ECMO

The NYP/Columbia ECMO team has advanced ECMO in multiple ways, including:

- Reducing the dosage of anticoagulation medication (blood thinner). This change has dramatically reduced the rate of bleeding complications traditionally associated with ECMO.
- Using ECMO creatively to avoid mechanical ventilation. For example, rather than keep a cystic fibrosis patient with lung failure on a ventilator, which would have caused deconditioning, malnutrition, and probable elimination from the transplant waiting list, they used ECMO alone. The patient got stronger and was able to undergo lung transplantation.
- Refining ECMO methodology. The team created an adaptation called 'mini-ECMO,' which allows patients to be transported from outside hospitals to NYP/Columbia for advanced treatments.

"In the future, ECMO may be used in conjunction with a ventilator, or instead of a ventilator, depending on the patient's needs," says Dr. Brodie. Because ECMO allows the lungs to heal without causing injury to the lungs, he believes that ECMO could potentially supersede the use of ventilators in some patients. The NYP/Columbia ECMO program will be participating in an international multicenter study to further investigate ECMO's safety and efficacy compared to ventilation. ■

For more information about adult pulmonary ECMO, see columbiasurgery.org



Top: Pamela Abma was on ECMO for 9 days, and in a coma for 17 days, during May, 2010.

Bottom: At left, Pamela at her son's wedding in August, 2010.

ECMO Symposium

September 16, 2010: Drs. Bacchetta and Brodie, along with colleagues in the Lung Transplant Program and the clinical perfusion team, held a symposium to teach cardiac and thoracic surgeons, cardiologists, intensive care specialists, perfusionists, pulmonologists, nurses and other clinicians, about the most up-to-date techniques of ECMO in the adult patient.

Nipple-sparing Mastectomy ~ continued from page 1

be safe. The advancement of oncoplastic techniques allows many women today to emerge from mastectomy with a more natural appearance, while still receiving optimal treatment for their cancer.

Today, however, an even better option is now available: it is possible to perform mastectomy while retaining not only the skin, but also the nipple and areola complex. "If there is no cancer in the area of the nipple or areola, this tissue can be preserved," explains **Preya Ananthakrishnan, MD**, Assistant Professor of Clinical Surgery and Associate Director, Breast Surgery Fellowship. Along with Dr. Feldman and **Bret Taback, MD** Assistant Professor of Surgery and Director, Breast Surgical Oncology Fellowship Program, Dr. Ananthakrishnan specializes in nipple-sparing mastectomy and onplastic surgery for women with breast cancer. "In order to preserve the skin, nipple, and areola, we perform mastectomy by making very small incisions under the breast or on the side of the breast. Keeping all of the skin envelope

preserves the shape of their breasts most naturally, which provides the best possible cosmetic outcome."

Nipple-sparing mastectomy originated about fifteen years ago in Japan, where surgeons developed the procedure and reported excellent results. Dr. Feldman traveled to Japan in 2004 to learn the procedure, and then began performing it in 2005. Dr. Ananthakrishnan gained expertise in nipple-sparing mastectomy while at the Cleveland Clinic, before accepting her faculty appointment at NewYork-Presbyterian/Columbia this year.

Drs. Feldman, Ananthakrishnan and Taback work closely with surgeons in the Division of Plastic Surgery (Drs. Ascherman, Grant and Rohde), whose collaboration is critical during such procedures. In some cases, the plastic surgeon will place a tissue expander under the muscle at the time of mastectomy, in preparation for a final implant at a later time. Alternatively, fatty tissue from the abdomen can be used to replace the removed breast tissue by performing a TRAM or DIEP

flap. Many women prefer the tissue flap techniques because they get a "tummy tuck" procedure when extra fatty tissue from the abdomen is removed to create a new breast.

"The ability to keep the entire breast skin, nipple and areola makes for a far gentler mastectomy," says Dr. Ananthakrishnan. "For some women, this makes a very important difference in their experience with surgery and overall healing." Not all patients are eligible for this procedure; biopsies are performed during surgery to make sure that the nipple is cancer-free.

Dr. Ananthakrishnan is enthusiastic about offering nipple-sparing mastectomy at NYP/Columbia. "We practice with a team approach, meaning the patient meets with the breast surgical oncologist and the plastic surgeon prior to surgical planning. By working as a team, we are able to optimize both the treatment of the cancer as well as the aesthetic outcome after surgery." ■

For more information, visit www.breastmd.org

SAVE THE DATE



Annual Pancreatic Cancer Awareness Day

November 13, 2010 • New York City

Join us for an afternoon of learning and sharing with the experts of NewYork-Presbyterian Hospital/Columbia University Medical Center, The Pancreas Center and The Muzzi Mirza Pancreatic Cancer Prevention & Genetics Program.

This FREE community patient education program for patients and families will address the latest information on screening and early detection, treatment options, and support. Free parking is available with voucher.

For information, contact Christine Rein
Tel: 201.346.7014 • Fax: 201.342.7011

E-mail: cmr2146@columbia.edu

Register online: www.columbiasurgery.org
Click on "events for patients"

PURPLESTRIDEWALK

Spring 2011 • New York City

The Pancreatic Cancer Action Network, in conjunction with The Pancreas Center of, NewYork-Presbyterian Hospital/Columbia University Medical Center, and the Muzzi Mirza Pancreatic Cancer Prevention & Genetics Program, will host the annual Purple Stride walk in the Spring of 2010.

Last year's walk to raise community awareness was a tremendous success and we are delighted to be teaming up once again. More details to follow.

For information, contact Christine Rein
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