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healthpoints

ALL THE POSSIBILITIES OF MODERN MEDICINE

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In affiliation with
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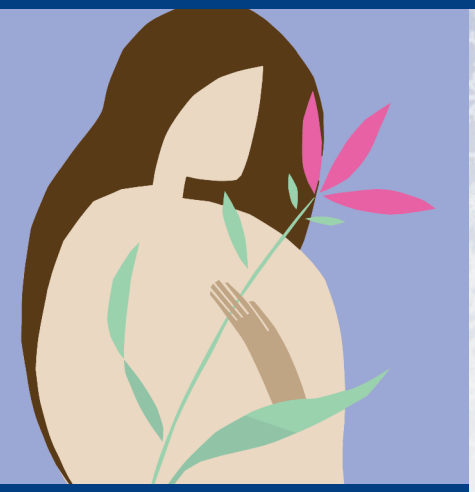

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Post-mastectomy Breast Reconstruction

Study of Needle-free Tissue Expansion at NYP/Columbia

After the jubilation of beating cancer, many women who seek breast reconstruction have another journey to complete. Before they can receive a permanent breast implant, they must first undergo a process to create the space to house the new implant, and this process can be painful and may take many months.

"Traditionally, women undergoing breast reconstruction have had to endure a long process of inconvenient and sometimes uncomfortable saline injections every two to three weeks to create a pocket for the permanent implant following a mastectomy," said **Jeffrey Ascherman, MD**, *Professor of Clinical Surgery and Site Chief of Plastic Surgery, NewYork-Presbyterian Hospital/Columbia University Medical Center.* According to some women, this is not only uncomfortable, but a significant time burden, since they must visit their doctor's office every few weeks for an average of four to six months.

Dr. Ascherman is the first physician in the United States to be enrolling patients in a study of a new, needle-free tissue expansion method that may allow women to achieve the same preparation for reconstructive surgery in a much easier manner.

Jeffrey A. Ascherman, MD, FACS, Professor of Clinical Surgery and Site Chief, Division of Plastic Surgery, NewYork-PresbyterianHospital/ Columbia University Medical Center

The clinical trial at NewYork-Presbyterian/Columbia involves a novel, needle-free tissue expansion method that eliminates the need for frequent saline injections and office visits. This investigational method first requires implantation of a normal-sized tissue expander device. Once at home, the patient uses a remote-control device to release small amounts of compressed carbon-dioxide from a valve in the expander. In a recent study of the device in Australia, the daily expansion resulted in creation of a pocket in an average of 15 days that was comparable to those created after several months of saline injections. Patients can use the new needle-free technology while at home, at their own pace and comfort level.

The randomized controlled clinical study is designed to directly compare the outcomes of traditional saline expansion method to the investigational, remote-controlled tissue expander. NYP/Columbia is the only hospital in New York, and one of only approximately ten hospitals in the U.S., to participate.

Eligible patients include non-obese women between 18 – 65 years of age who do not smoke, have not had previous tissue expansion or radiation therapy, and who wish breast reconstruction with tissue expansion after mastectomy. ■

For more information about this trial, please visit: clinicaltrials.gov

To inquire about enrolling in this study, or to refer a patient, please contact:

Jeffrey Ascherman, MD
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NewYork-Presbyterian Hospital/Columbia University Medical Center
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Mia's Story

Pediatric vascular malformations program provides state-of-the-art care to children who need it most

Long before Mia Sanchez was born, her doctors at NewYork-Presbyterian Hospital/Columbia University Medical Center knew something was profoundly amiss. Her heart pumping furiously, she appeared headed for heart failure. Imaging conducted by the Center for Prenatal Pediatrics revealed the cause: the heart was working overtime to feed blood to a large vascular malformation, a mass of abnormal blood vessels growing in the tiny baby's neck.

With no way to surgically remove the mass before birth, the team needed to somehow reduce the stress on the baby's heart and prevent heart failure. It was unclear whether enough medication would cross the placenta if the mother took oral heart medicine, but the team tried this approach, administering digoxin to the mother when the baby was at about 25 weeks gestation. Fortunately for Mia, the medication eased the strain on her heart, allowing her to grow to full term.

On August 6, 2011, Mia was delivered by elective caesarian section. By this time, the mass of blood vessels gone awry was as large as her head.

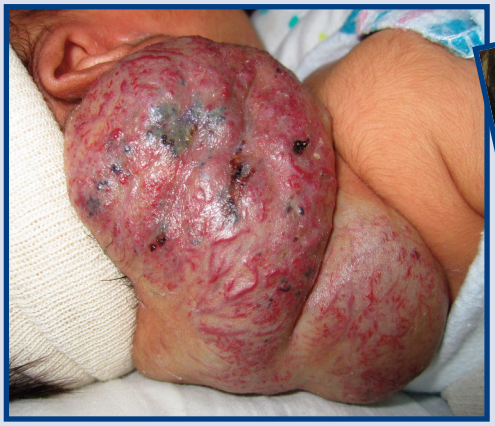
According to **Angela Kadenhe-Chiweshe, MD**, Mia's pediatric surgeon, the baby was in distress at birth and needed mechanical assistance to breathe. The vascular malformation was causing heart failure because of the large amount of turbulent blood flow, which was also affecting her clotting functions. Although it was clearly a threat to the baby's life, the team could not remove the mass just yet. As Dr. Chiweshe explains, "Very large vessels were feeding this mass, and there was such a large volume of blood that immediate removal could have led to intraoperative death (by hemorrhage). We knew we would eventually need to operate, but we had to first make it safe."

To accomplish this, the team first stabilized Mia with steroids and propanolol. These medications helped to stop the growth of the large mass and improved her heart function enough that she could breathe without mechanical assistance. Once the baby had derived maximum benefit from these medications, **Philip M. Meyers, MD**, ***FAHA***, *a neurointerventional radiologist and Co-Director of Neuro–endovascular Services, NewYork-Presbyterian Hospital*, plugged the major vessels feeding the mass through coil embolization. "We elected to do this at the time we felt the baby was in the best clinical state possible to withstand the operation," says Dr. Chiweshe. Embolization was successful in cutting the blood supply to the mass by about 75%. Then, while still under anesthesia, Mia was transported to the operating room where the surgical team removed the mass.

The surgery, done by Dr. Chiweshe and **June K. Wu, MD**, a plastic and reconstructive surgeon who specializes in vascular anomalies, was a success. The mass was safely removed, Mia recovered, and she was soon weaned off the steroid medications. Although her heart is now functioning normally, she will continue to see her pediatric cardiologist for followup. Today she is eating, growing, and is considered fully cured.

Mia's team included expert specialists in maternal-fetal medicine, obstetrics, neonatology, pediatric cardiology, pediatric surgery, pediatric plastic surgery, pediatric derma-

Mia's Story ~ Continued on Page 3



Mia Sanchez at birth. The large vascular malformation threatened to cause heart failure, and she was unable to breathe or eat without assistance.

Pictured with her mother after surgery, Mia no longer needs any heart medications. She is eating and growing normally, and is "fully cured," according to her physicians.

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tology, pediatric hematology, neonatal nursing, basic science research, radiology, and more. "It truly takes a village to properly treat children with a complex condition like Mia's," says **Jessica J. Kandel, MD,** *Professor of Surgery & Pediatrics (in the Institute for Cancer Genetics).* "This child's outcome is a direct result of the multidisciplinary program created by the Division of Pediatric Surgery and other Divisions to treat vascular anomalies."

The pediatric vascular anomalies program was formed as a multidisciplinary group in 1998, coordinated by Dr. Kandel and **Maria Garzon, MD,** *Director of Pediatric Dermatology*. At the same time, Dr. Kandel's laboratory was investigating angiogenesis, the growth of blood vessels, and factors that cause blood vessels to grow abnormally. In particular the laboratory was uncovering the role of VEGF, or vascular endothelial growth factor, which is an important regulator of cell growth. Their work on VEGF contributed to the development of the cancer drug Avastin, particularly as this applies to pediatric patients with cancer, and has led to other 'translational' therapies, or therapies translated rapidly from the laboratory to the clinic. Dr. Kandel and colleagues in the Division of Pediatric Surgery understood that the fruits of this research could provide patients with new therapeutic options, and that a multidisciplinary team was needed to provide the best level of care possible.

Dr. Kandel explains that in Mia's case, molecular therapies targeting an aspect of angiogenesis were not needed because the conventional approaches – medications for heart failure, embolization of the vessels, and surgery – were successful. But for other children, the understanding gleaned from Dr. Kandel's research has provided molecular-based options that are simply unavailable elsewhere. For example, the lab has recently shown that very common medicines used in small doses, such as an antibiotic related to tetracycline, can treat vascular malformations by directly targeting cells that line abnormal blood vessels.

"Children with vascular malformations can be very difficult to treat," says Dr. Chiweshe. "Very few hospitals have the expertise or resources to treat them, and they often have poor outcomes. We are fortunate here to be able to offer not only expertise in conventional therapies, but also novel treatments as a result of Dr. Kandel's research." ■

To learn more about the treatment of vascular malformations at NewYork-Presbyterian Hospital, Please visit: childrensnyp.org/mschony/pediatric-surgery or call 212.342.8585

Hypertrophic Cardiomyopathy

Multidisciplinary center provides expert genetic testing and the full spectrum of care to patients of every age

Hypertrophic cardiomyopathy (HCM) is a genetic disease of the heart muscle characterized by an overly thick, stiffened heart muscle. Because the heart tissue cannot fully expand and let new blood into the chamber, it can't send enough blood to the body to meet its needs, especially during exercise. Thickening of the heart muscle can also distort the left ventricle, affecting the function of the mitral valve.

HCM can affect people of any age, ethnicity, gender, and background. Many patients have identifiable genetic mutations. HCM can appear in infancy, during childhood, or during adulthood.

In the case of Jasmine Figueroa, a heart murmur led to her diagnosis at Morgan Stanley Children's Hospital of New York (MSCHONY)/Columbia at age 13. Jasmine's cardiologists were able to control her symptoms with medications through her adolescence, but in her early 20's, she developed an arrhythmia and worsening symptoms that ultimately led her to need a heart transplant. Her two daughters also carry the gene for HCM, and both receive continual monitoring; the older shows symptoms and receives medications, while the younger is symptom free. But Jasmine, now 33, has confidence both in the HCM team at NewYork-Presbyterian, and in modern medicine. "In my childhood, HCM was pretty much a death sentence," she says. "Today, there are so many innovations available, so many ways to help my girls."

According to **Hiroo Takayama, MD, PhD**, *co-director of the HCM program* newly established at NewYork-Presbyterian/Columbia, there is a great deal of variation both in the severity of symptoms and in the progression of the disease. In the early stages of disease, people may experience shortness of breath, chest pain or discomfort, fainting or dizziness especially upon exertion, and palpitations (a rapid or irregular heartbeat). Yet some patients have few or no symptoms, even if they have had the condition for some time, while others may be unaware of their condition until they suffer sudden cardiac death.

While HCM cannot be cured, treatment can alleviate symptoms, improve survival rates, and enhance patients' quality of life.

Under the direction of **Dr. Takayama** and **Mathew Maurer, MD**, the multidisciplinary HCM Program treats patients of

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every age, from newborn to older adult, at every stage of disease. The program's tiered approach includes medical management, interventional procedures, device therapy, and surgery.

According to Dr. Maurer, "HCM is the great masquerader in cardiology, and can involve enormous variation from patient to patient. Each patient needs a tailored treatment regimen that takes into account the severity of one's symptoms, risk factors for sudden cardiac death, preventive therapy (including the avoidance of competitive athletics and extreme physical exertion) and family screening." For the rare patients in whom the disease continues to progress despite optimal medical and surgical intervention, the team may consider therapies to support or replace the heart. Options include either a heart transplant or left ventricular assist device (LVAD). NewYork-Presbyterian/Columbia is one of the largest cardiac replacement centers in the country.

Jasmine Figueroa with her children, Amber and Eliana Torres.

Moreover, the comprehensive, multidisciplinary HCM program has been at the forefront of using genetic testing in the diagnosis and treatment of patients with HCM and their families. Genetic testing can be used to identify subjects who are at risk for developing HCM before serious symptoms develop and may be useful to distinguish an "athletic" heart from one affected by HCM. Genetic counseling and testing is therefore integrated into all patients' care at the HCM program.

Under the direction of **Wendy Chung, MD, PhD**, the HCM program is also conducting innovative research to determine how to help future generations who are genetically at risk for HCM. With funding from the Children's Cardiomyopathy Foundation, this research aims to uncover genetic causes of pediatric cardiomyopathy, which has been the least studied of all forms of HCM. Identification of new genes associated with pediatric cardiomyopathy will likely lead to new targets for treatment, clarify the prognosis for families, and provide reproductive options for families who hope to have healthy children in the future.

Simultaneously, the laboratory of **Jonathan Lu, MD, PhD** is using personalized stem cells from patients' skin samples to study the molecular mechanisms and potential treatment for genetic arrhythmias.

Together, these pioneering studies and clinical experience combine to make the HCM program nationally known for its expertise in heart failure, genetics, noninvasive imaging, interventional techniques, cardiac surgery, and heart transplantation.

According to Dr. Takayama, "We're not just satisfied with today's answers. We are looking for tomorrow's answers, too." ■

Learn how NewYork-Presbyterian/Columbia is advancing the treatment of hypertrophic cardiomyopathy at: www.columbiasurgery.org

Growing Library of Podcasts Keeps Patients Well Informed

Are you or a loved one facing the prospect of surgery in the near future? Or just curious about a particular condition or procedure?

An online library of videos and podcasts is now available to help you learn about all types of surgical procedures. Created by expert physicians and surgeons at NewYork-Presbyterian /Columbia, these easy-to-understand presentations provide direct information and answers from top physicians in their field. According to one patient, "These podcasts are great because they are an informal venue where doctors can speak freely and share their views." ■

View these free presentations online at the Department of Surgery Audio and Visual Learning Center: www.columbiasurgery.org/media/index.html

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