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Trends in Plastic and Reconstructive Surgery

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Trends in Plastic and Reconstructive Surgery

As a teaching hospital, Jefferson benefits from being on the cutting edge of the latest techniques and technologies, including in the area of plastic and reconstructive surgery. Clinical Professor, John H. Moore Jr., MD, explains that part of the Jefferson philosophy is to encourage research among the residents, as surgeons move toward increasingly effective techniques that draw upon the body’s own tissues.

Dr. Moore

"With breast implants, for example, we were doing a TRAM-flap procedure, using tissue from the abdominal wall," Dr. Moore explains, "Now we have switched to using a latissimus dorsi flap (from the back), which seems to be even safer with fewer complications and without sacrificing the final result." Jefferson residents and college students are now compiling data from more than 700 patients as part of a 10-year study by the Department of Surgery evaluating the safety of this newer procedure.

The use of stem cells is another trend that has begun to show considerable promise, as the cells can be grown into bone, cartilage and fat in any desired shape. In breast augmentation, natural tissues do not cause the local scarring that can be associated with saline and silicone implants, although this use is currently experimental. For reconstructive surgery, stem cell tissue maintains its shape and size more effectively than conventional soft tissue implants. In 2003, former Jefferson resident Stephanie Houser Caterson, MD, won the American Society for Aesthetic Plastic Surgery’s Anastasi Award for her work on stem cells. She and her husband, E. J. Caterson MD, PhD, also a Jefferson alumnus, conducted research on the ability to propagate stem cells into soft tissues such as bone, cartilage and muscle. Both are now surgical fellows at Harvard.

"We are training the next generation of surgeons to be even better."

Further research in this area continues at Jefferson under the direction of Dr. Moore’s young colleague Gary Tuma, MD. "We hope to design a method to develop tissue-engineered fat-derived stem cells for soft tissue augmentation," says Dr. Tuma. While more research is needed, he hopes for funding that will allow him to open a tissue engineering lab at Jefferson in early 2007. Dr. Moore points out the benefits of the diverse

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research interests of Jefferson's Plastic Surgery faculty. “We are training the next generation of surgeons to be even better,” he says, “and are always striving for a new standard of excellence.”
A national postdoctoral fellow at Jefferson, Joseph Lombardi, MD, is helping transform the treatment of aortic disease—one of the risk factors for aortic aneurysm. Using advanced imaging technology, Dr. Lombardi is exploring the use of endovascular procedures to treat aortic disease. Endovascular surgery involves the use of catheters and wires to access the blood vessels and perform minimally invasive procedures. This new approach offers many benefits over traditional open surgery, including lower risk and recovery time for patients.

Visualizing New Possibilities in Vascular Surgery

Dr. Lombardi's main research interest is the development of new technologies to improve the surgical outcomes of patients with aortic disease. He is working on a novel technique that involves the use of a 3D printer to create models of the aorta and surrounding tissues. These models can be used to plan the surgical approach and optimize patient outcomes. The technique involves the use of a 3D printer to create a model of the aorta and surrounding tissues. The model can be used to plan the surgical approach and optimize patient outcomes. The technique involves the use of a 3D printer to create a model of the aorta and surrounding tissues. The model can be used to plan the surgical approach and optimize patient outcomes.

This issue highlights the growing interest in stem cell research and its potential applications in the field of vascular surgery. Stem cells are undifferentiated cells that can differentiate into various cell types, including vascular cells. This makes them a promising tool for the repair and regeneration of damaged tissues. Jefferson researchers are exploring the use of stem cells to repair damaged blood vessels in patients with aortic aneurysms. These studies are aimed at developing new therapies for patients with aortic disease and improving the surgical outcomes of these patients.

Changing Lives Through Research

Jennifer Brumbaugh, MA

When the Department of Surgery hired new Webmaster Jennifer Brumbaugh in March, they gained a professional who bridges traditional academic training and modern technological savvy. In 1999, Jennifer received a master’s degree in medical illustration from the Johns Hopkins School of Medicine, but only 4 accredited programs in the U.S. At Hopkins, Jennifer joined the new Jefferson Chair of Surgery, Charles Yeo, MD, while working on her master’s thesis project, a Website for pancreatic cancer patients and their families. Upon graduating, she was hired by Johns Hopkins University and spent the next 7 years anticipating and translating patient needs into user-friendly online resources. Dr. Yeo was so pleased with her efforts that, upon his arrival in fall 2005, he asked her to manage the Department of Surgery’s online presence.

“Patients today are so savvy that many want access to doctors’ most recent published articles and their research endeavors,” Jennifer observes, “We’re striving to create online resources that address a wide spectrum of needs.” Keep an eye on www.jeffersonhospital.org/surgery to see the results.