Sanford Surgeon Appears in Two National Journals for Aneurysm Work

Dr. Patrick Kelly invents methods for treatment

Sioux Falls, S.D. (PRWEB) September 02, 2014 -- A Sanford Health physician was recently published in a pair of national journals for two unique methods to treat aneurysms. Devices invented by Patrick Kelly, M.D., are highlighted in the Journal of Vascular Surgery and Vascular.

An aneurysm is an enlargement in the wall of a blood vessel that can lead to tearing and life-threatening bleeding.

“A novel endovascular debranching technique using physician-assembled endografts for repair of thoracoabdominal aneurysms,” published by the Journal of Vascular Surgery, demonstrates the effectiveness of a device that was created using off-the-shelf components. Kelly and his team built two custom grafts to seal off thoracoabdominal aneurysms, which involve the thoracic aorta and extend into the abdominal aorta. The stents were placed in 14 people with a 100 percent survival rate. The benefits of the stent graft created by Kelly are that it could be replicated off the shelf and be safer to implant and may have more favorable flow characteristics when compared to what is currently offered in industry-sponsored clinical trials.

In a study of two patients that appeared in Vascular titled “Complete endovascular debranching of the aortic arch: A report of two cases,” Kelly used more physician-assembled grafts to successfully repair aortic arch aneurysms, which are characterized by an enlargement of the aorta just past the heart and aortic valve. The custom-made grafts restored appropriate blood flow and debranched the aneurysms in both patients. There was no treatment currently available for the two patients other than an open surgery, which neither of the patients were candidates for.

“These mechanisms for treating aneurysms become incredibly important when dealing with patients who have significant co-morbidities and cannot participate in a wide-array of more invasive treatment options,” said Kelly. “In both studies, we used components already on the market to construct novel grafts that proved to be quite effective.”

Kelly is a board-certified and fellowship-trained vascular and general surgeon. He holds dozens of patents or pending patents for medical devices and has served as a principal investigator for several clinical trials.


Vascular is a highly international forum for the discussion and debate of all aspects of vascular and endovascular topics. It also features opinion pieces, literature reviews and controversial issues.

About Sanford Health
Sanford Health is an integrated health system headquartered in the Dakotas and is now the largest, rural, not-for-profit health care system in the nation with locations in 126 communities in nine states. In addition, Sanford Health is in the process of developing international clinics in Ghana, Israel, Mexico and China.
Sanford Health includes 39 hospitals, 140 clinic locations and 1,360 physicians in 81 specialty areas of medicine. With more than 26,000 employees, Sanford Health is the largest employer in North Dakota and South Dakota. The system is experiencing dynamic growth and development in conjunction with nearly a $1 billion in gifts from philanthropist Denny Sanford. These gifts are making possible the implementation of several initiatives, including global children's clinics, multiple research centers and finding cures for type 1 diabetes and breast cancer. For more information, visit sanfordhealth.org.

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