A Single Center experience revising previous abdominal and thoracic aortic aneurysm repairs with a visceral manifold stent graft.

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Abstract

Objective: To review the clinical results of the use of the investigational visceral manifold for the revision of failed abdominal and thoracic aortic aneurysm repairs.

Methods: A single center patient database was utilized to retrospectively review 25 patients who had a revision procedure using the visceral manifold stent graft system following previous abdominal or thoracic aortic aneurysm repair.

Results: Technical success was achieved in 23 of 25 patients treated, with 89 of the intended 92 visceral vessels being successfully stented. Two in-hospital deaths were recorded. To date, no device integrity related failures have been observed.

Conclusions: Early- and mid-term results of the use of the visceral manifold stent graft system suggest a potentially viable option for the revision of failed aortic aneurysm repairs. However, experience is limited and this approach needs to be studied further before widespread adoption.

Recent Publications

1. **Kelly, P**., Lamichhane, S., Anderson, J., Vierhout, T., Remund, T. "Polyfluoroethylene topographies determine the adhesion, activation, and foreign giant cell formation of macrophages". Journal of Biomedical Materials Research Part A. 6 Jun 2017.
2. Suess, T., Anderson, J., Sherman, A., Remund, T., Pohlson, K., Mani, G., Gent, S., **Kelly, P**. "Shear accumulation as a means for evaluating risk of thromboembolic events in novel endovascular stent graft designs". Journal of Vascular Surgery. June 2017, Pages 1813-1819
3. Anderson, J., Lamichhane, S., Vierhout, T., Sherman, A., Remund, T., Pohlson, K., Engebretson, D., **Kelly, P**. "In vitro particulate and in vivo drug retention study of a novel polyethylene oxide formulation for drug-coated balloons". Journal of Vascular Surgery. 23 August 2017.
4. Lamichhane, S., Anderson, J., Remund, T., Sun, H., Larson, M., **Kelly, P**., Mani, G. "Responses of endothelial cells, smooth muscle cells, and platelets dependent on the surface topography of polytetrafluoroethylene" Journal of Biomedical Materials Research Part A. 17 May 2016.
5. Suess, T., Gent, S., Remund, T., **Kelly, P**. 'Analysis of stent-graft design for aortic aneurysm repair using computational fluid dynamics." Journal of Medical Devices. 01 Sept 2015



Dr. Patrick Kelly studied Civil Engineering at the University of Wyoming before attending medical school. He is a board certified vascular surgeon at Sanford Health. He has pioneered several surgeries including the first complete endovascular aortic arch aneurysm repair in the world. He works with the FDA and the Society for Vascular Surgeons on clinical trials for complex aneurysm repair and recently published a template which guides vascular surgeons through the process of applying for- and conducting-physician-sponsored investigational device studies. Dr. Kelly is an active inventor of medical devices with over 180 issued or pending patents. Sanford Health and Medtronic, PLC entered into an exclusive worldwide licensing agreement with the intention of commercializing his technology for repairing thoracoabadominal aortic aneurysms. He has an active PS-IDE clinical trial for this device. His experience and expertise allow him to have valued insight when developing new technologies to better care for patients.

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