

Technology Opportunity, Ref. No. BS-18/008

Protective device for open heart aortic valve replacement surgery

This device is intended for collecting and disposing any calcified fragments falling off as debris during removal of a sclerotic valve during aortic valve replacement surgery to prevent post-surgical stroke.

Keywords cardia surgery, aortic valve replacement, valve debris, net, post-surgical stroke, prevention, prophylaxis, medical device

Inventors Dr. med Jasmin Hasmik Shahinian

Reference in preparation

Background Aortic valve replacement is a procedure applied when a patient's aortic valve is failing, which can be due to various causes. The valve can either become leaky, a condition called aortic insufficiency, or it can be partially blocked in a condition called aortic stenosis. Current approaches for aortic valve replacement include open heart surgery via a sternotomy, minimally invasive cardiac surgery and transcatheter aortic valve replacement. A complication that can arise in aortic valve replacement surgery is caused by small calcified fragments falling off as debris during sclerotic valve removal e.g. by using a Rongeur tool. Such fragments and debris can pass into the left ventricle and thus pose a significant risk of post-surgical stroke. Embolic protection devices are known in the field of interventional cardiology, but most of them are inserted in the bloodstream where they act as an implanted sieve.

Invention This invention will significantly minimize the risk of stroke since it will prevent the falling of calcified debris into the left ventricle and hence its flushing away into the bloodstream. The device is comprised of an elongated outer body and screen element configured as a net/mesh. The net will be unfolded just underneath the aortic valve before the valve removal. After the calcified valve is removed, the net will be refolded and pulled out carrying any debris which might have fallen off during valve removal.

Fields of Use open heart aortic valve replacement surgery

Patent Status Application Nr. EP 17/168,904

Contact Unitectra, Technology Transfer University Basel, Dr. Peter Eckard,
Steinengraben 5, CH-4001 Basel, +41 61 207 30 14, mail@unitectra.ch