Neurologic Outcomes After Cardiac Operations

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Despite recent and rapid advances in percutaneous techniques, open operation remains the standard of care for many patients with cardiac diseases. Numerous studies have shown coronary artery bypass grafting (CABG) to have a significantly lower reintervention rate in addition to a survival advantage in large subpopulations of patients with coronary artery disease compared with percutaneous therapy. Percutaneous valve repair and replacement techniques have been accepted and are becoming more widely applied. However, open valve repair or replacement is far more widely performed, and to date, insufficient data are available in comparable groups of patients to show that percutaneous technologies establish even noninferiority in terms of long-term efficacy and durability.

Continued improvements in surgical techniques and devices have resulted in reductions in death and many of the morbidities associated with open cardiac operations over time. An important exception to these improvements is the incidence of stroke after cardiac operations. Recent analysis of The Society of Thoracic Surgeons CABG data by year shows a peak stroke rate of 1.7% in 2000 that falls to approximately 1.2% in 2008 and has remained constant since.

Why have we not been able to make further progress in this area? Is it because patient age and disease acuity have increased over time? Although this may be so, these variables have not been well defined. Numerous strategies, such as intraoperative ascending aortic ultrasound imaging, more effective management of the thrombosis risk associated with atrial fibrillation, off-pump operations, and more aggressive postoperative antiplatelet therapies have all been recommended to reduce stroke risk during recent times, yet no improvements in the incidence of this complication have been observed. Also not well defined is our understanding of the mechanisms of postoperative stroke, an area that has seen only modest advances in recent years. There is now a groundswell of support to intensify our efforts to reduce stroke after cardiac operations, because it is critically important to our patients and a place where we have important room for improvement.

In February 2013, The Society of Thoracic Surgeons leadership agreed that a task force should be formed to address the issue of stroke after CABG and a parallel effort concerning stroke after aortic valve replacement. Over the coming months, we will carefully examine The Society of Thoracic Surgeons risk models for stroke after cardiac operations, identify “best practices” within leading programs with regards to stroke rates, revisit the efficacy of established neuroprotection strategies, and reenergize efforts to understand the underlying mechanisms of neurologic events related to open cardiac operations. Our efforts will result in a specific set of recommendations that all surgeons can use to limit stroke in their patients. By adopting this program as a collective group, we may make significant improvements in outcomes for our patients and progress in reducing the incidence of this devastating postoperative morbidity.