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News

STS Press Release

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The Annals of Thoracic Surgery Highlights Landmark Cardiothoracic Surgery Research

Lung cancer surgery, saphenous vein autografts, and first-open heart surgeries for congenital defects highlighted

Chicago – As *The Annals of Thoracic Surgery* celebrates 50 years of publishing groundbreaking scientific research in cardiothoracic surgery, the journal will mark the historic occasion throughout 2015 by highlighting some of the most important research published within its pages.

A special STS presidential task force selected articles from the journal archives that are considered landmark. Brief commentaries on these landmark contributions will be published in each issue of *The Annals* in 2015. The commentators were selected because they are experts in the field and intimately familiar with the work and its significance. Many of these commentators will provide a uniquely personal perspective, having worked with or trained in the same institution as the senior authors of these landmark papers.

The February 2015 issue features three commentaries on landmark articles. The topics include lung cancer surgery, saphenous vein autografts, and the first open-heart surgeries for congenital defects.

Lung Cancer Surgery

The first commentary features a 1977 study from Clifton F. Mountain, MD, from the University of California, San Diego, who assessed the role of surgery for control of lung cancer. The commentary was written by Ara A. Vaporciyan, MD, from the University of Texas M.D. Anderson Cancer Center in Houston. In the study, Dr. Mountain explored the impact of a lung cancer staging system that he helped to create on the utility of surgical treatment of cancer.

“The work makes it clear that the staging system was a significant step in creating a common language. Publications such as these validating its use were absolutely necessary to disseminate its use, which was in its infancy,” wrote Dr. Vaporciyan. “If only Dr. Mountain could witness the concept of maintenance targeted therapy, immunotherapy, and the success of adjuvant therapy. The foundation he created allowed us to visualize these possibilities before we had any notion as to what form they would finally take.”

Saphenous Vein Autografts

A second commentary, written by Joseph F. Sabik III, MD, from The Cleveland Clinic Foundation, outlines the importance of a 1968 study by Rene G. Favaloro, MD, also from The Cleveland Clinic, who applied a new surgical vascular reconstruction technique to treat coronary artery stenosis (plaque buildup that narrows the coronary arteries, decreasing blood flow to the heart). The new technique used a saphenous vein autograft, which involves grafting part of the saphenous vein (the longest vein in the leg) to the blocked coronary artery. The graft bypasses the blocked portion of the coronary artery, allowing more blood flow to the heart.

"Although Dr. Favaloro was not the first to perform an aorto-coronary saphenous vein graft, he built on what he learned from his early operations," wrote Dr. Sabik. "He applied these new surgical techniques to treat both left-sided and right-sided coronary artery stenoses, and he pioneered treatment of acute myocardial infarction with emergency surgical revascularization. Many of his techniques and surgical principles we still use today."

First Open-Heart Repairs for Congenital Defects

John E. Mayer Jr, MD, from The Children's Hospital in Boston, wrote a third commentary highlighting a 1986 article from C. Walton Lillehei, PhD, MD and colleagues from the University of Minnesota, that described 30-year outcomes in patients who underwent the first open-heart repairs for congenital heart defects through the use of cross-circulation between parent and patient. Cross-circulation was pioneered by Dr. Lillehei and was used very early in open heart surgery. Blood flow was routed from the patient to a parent's femoral vein and lungs, where it was oxygenated before being returned to the patient's carotid artery.

Commenting on the operations that took place from early 1954 to mid-1955, Lillehei and colleagues wrote in the 1986 article: "Today, open-heart operations are performed so effortlessly and with such low mortality in all ages from neonates to octogenarians that it may be difficult for the current generation of cardiologists and cardiac surgeons to appreciate that little more than 30 years ago, the outer wall of the heart represented a seemingly impenetrable anatomical barrier to the surgeon's knife and to the truly incredible therapeutic accomplishments that are routine today."

Now, nearly 60 years following those first procedures, Dr. Mayer added even more perspective, "The article highlights the importance of innovation based on extensive laboratory research. … These experiments provided the basis for challenging conventional wisdom that a 'sick heart' could not withstand an intracardiac operation with the use of cardiopulmonary bypass. The use of cross-circulation allowed reparative operations for several forms of congenital heart diseases, dispelled the 'sick heart' theory, and opened the door to the current practice of cardiac surgery."

Commentaries on more landmark research published in the first 50 years of *The Annals* will appear in each 2015 issue. All landmark articles will be available for free on *The Annals of Thoracic Surgery* website: www.annalsthoracicsurgery.org.

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For a copy of the February commentaries or landmark articles, contact Cassie McNulty at 312-202-5865 or cmcnulty@sts.org.

Founded in 1964, The Society of Thoracic Surgeons is a not-for-profit organization representing more than 6,900 cardiothoracic surgeons, researchers, and allied health care professionals worldwide who are dedicated to ensuring the best possible outcomes for surgeries of the heart, lung, and esophagus, as well as other surgical procedures within the chest. The Society's mission is to enhance the ability of cardiothoracic surgeons to provide the highest quality patient care through education, research, and advocacy.

The Annals of Thoracic Surgery is the official journal of STS and the Southern Thoracic Surgical Association.