# STSA

SOUTHERN THORACIC
SURGICAL ASSOCIATION

## 55TH ANNUAL MEETING

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# 55TH ANNUAL MEETING

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**Future Annual Meetings of the Southern Thoracic Surgical Association**

November 4-7, 2009
Marriott Marco Island Golf Club & Spa
Marco Island, Florida

November 3-6, 2010
Disney Yacht & Beach Club
Orlando, Florida

November 9-12, 2011
JW Marriott
San Antonio, Texas

## SOUTHERN THORACIC SURGICAL ASSOCIATION

## 2008 OFFICERS AND COUNCIL

**President**
John W. Hammon, MD
Winston-Salem, NC

**President-Elect**
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Dallas, TX

**Vice President**
Martin McMullan, MD
Jackson, MS

**Secretary/Treasurer**
Robert J. Cerfolio, MD
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**Council Chair**
Carolyn E. Reed, MD
Charleston, SC

**Past President**
Ross Ungerleider, MD
Portland, OR

**Councilors**
Curt Tribble, MD
Gainesville, FL

Daniel Miller, MD
Atlanta, GA

David Jones, MD
Charlottesville, VA

**Continuing Medical Education Director**
Walter Merrill, MD
Cincinnati, OH

**Historian**
Harold C. Urschel, Jr., MD
Dallas, TX

**Editor**
L. Henry Edmunds, MD
Philadelphia, PA

## COMMITTEE MEMBERS

**Program Committee**
Andrew C. Fiore, MD, St. Louis, MO
Paul Henry Schipper, MD, Portland, OR
Robert J. Cerfolio, MD, Birmingham, AL
John W. Hammon, MD, Winston-Salem, NC
Michael Hines, MD, Winston-Salem, NC
John Ikonomidis, MD, Charleston, SC
Walter Merrill, MD, Cincinnati, OH
Bryan Meyers, MD, Saint Louis, MO
Carolyn E. Reed, MD, Charleston, SC
Vinod Thourani, MD, Atlanta, GA

**Membership Committee**
Michael R. Mill, MD, Chapel Hill, NC
John Howington, MD, Evanston, IL
Robert N. Jones, MD, Saginaw, MI
Reid Tribble, MD, Columbia, SC

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Jeffrey Jacobs, MD, Saint Petersburg, FL
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Mark Krasna, MD, Towson, MD
Jennifer Lawton, MD, St. Louis, MO
Walter Merrill, MD, Cincinnati, OH
Ara Vaporciyan, MD, Houston, TX

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Paul Henry Schipper, MD, Portland, OR
J. Michael DiMaio, MD, Dallas, TX
Jeffrey Jacobs, MD, Saint Petersburg, FL

**Representative to the Board of Governors of the American College of Surgeons**
Joe B. Putnam, Jr., MD, Nashville, TN

**Representative to the Advisory Council for Cardiothoracic Surgery of the American College of Surgeons**
Ross Ungerleider, MD, Portland, OR

**Nominating Committee**
D. Glenn Pennington, Johnson City, TN
Irving L. Kron, MD, Charlottesville, VA
Ross Ungerleider, MD, Portland, OR
Carolyn E. Reed, MD, Charleston, SC

***The Annals of Thoracic Surgery***
L. Henry Edmunds, MD, Philadelphia, PA

# PAST MEETINGS OF THE SOUTHERN THORACIC SURGICAL ASSOCIATION

| | PRESIDENT | SECRETARY |
|---|---|---|
| 1954—Hollywood Beach, FL | James D. Murphy* | Hawley H. Seiler* |
| 1955—White Sulphur Springs, WV | Paul W. Sanger* | Hawley H. Seiler* |
| 1956—Miami Beach, FL | Donald L. Paulson* | Hawley H. Seiler* |
| 1957—New Orleans, LA | Duane Carr* | Hawley H. Seiler* |
| 1958—Miami Beach, FL | John S. Harter* | Hawley H. Seiler* |
| 1959—Edgewater Park, MS | Edward F. Parker* | Hawley H. Seiler* |
| 1960—Nassau Bahamas, B.W.I. | Edgar W. Davis* | Hawley H. Seiler* |
| 1961—Memphis, TN | DeWitt C. Daughtry* | Hawley H. Seiler* |
| 1962—Ocho Rios, Jamaica | James E. Dailey* | Hawley H. Seiler* |
| 1963—San Antonio, TX | Lewis H. Bosher | Hawley H. Seiler* |
| 1964—Atlanta, GA | Robert G. Ellison* | Hawley H. Seiler* |
| 1965—Freeport, Grand Bahama | Francis H. Cole* | Hawley H. Seiler* |
| 1966—Asheville, NC | Will C. Sealy* | Hawley H. Seiler* |
| 1967—Dallas, TX | Edward R. Munnell* | Hawley H. Seiler* |
| 1968—San Juan, Puerto Rico | Milton V. Davis* | Hawley H. Seiler* |
| 1969—Washington, DC | Osler A. Abbott* | James W. Brooks |
| 1970—Bermuda | Watts R. Webb | James W. Brooks |
| 1971—Tampa, FL | Hawley H. Seiler* | James W. Brooks |
| 1972—Port of Spain, Trinidad and Tobago | A. Robert Cordell* | James W. Brooks |
| 1973—Louisville, KY | James W. Pate | James W. Brooks |
| 1974—Williamsburg, VA | Bertram A. Glass* | James W. Brooks |
| 1975—New Orleans, LA | Frederick H. Taylor* | J. Kent Trinkle* |
| 1976—Acapulco, Mexico | James W. Brooks | J. Kent Trinkle* |
| 1977—Marco Island, FL | Joseph W. Peabody, Jr.* | J. Kent Trinkle* |
| 1978—Marco Island, FL | Robert Carr* | J. Kent Trinkle* |
| 1979—San Antonio, TX | Harold C. Urschel Jr. | Richard B. McElvein |
| 1980—White Sulphur Springs, WV | W. Glenn Young Jr.* | Richard B. McElvein |
| 1981—Palm Beach, FL | Dennis Rosenberg* | Richard B. McElvein |
| 1982—Hilton Head Island, SC | J. Kent Trinkle* | Richard B. McElvein |
| 1983—Marco Island, FL | Francis Robicsek | Harvey W. Bender, Jr. |
| 1984—Hilton Head, SC | Charles R. Hatcher, Jr. | Harvey W. Bender, Jr. |
| 1985—Boca Raton, FL | George C. Kaiser | Harvey W. Bender, Jr. |
| 1986—White Sulphur Springs, WV | Richard B. McElvein | Harvey W. Bender, Jr. |
| 1987—Boca Raton, FL | J. Alex Haller, Jr. | Gordon F. Murray |
| 1988—Marco Island, FL | O. Brewster Harrington | Gordon F. Murray |
| 1989—Scottsdale, AZ | Richard E. Clark | Gordon F. Murray |
| 1990—Dorado, Puerto Rico | Harvey W. Bender, Jr. | Gordon F. Murray |
| 1991—Orlando, FL | Robert M. Sade | Hendrick B. Barner |
| 1992—Wesley Chapel, FL | William A. Cook | Hendrick B. Barner |
| 1993—Panama City Beach, FL | Gordon F. Murray | Hendrick B. Barner |
| 1994—Marco Island, FL | Ronald C. Elkins | Hendrick B. Barner |
| 1995—San Antonio, TX | Frederick L. Grover | D. Glenn Pennington |
| 1996—Cancun, Mexico | William C. Alford | D. Glenn Pennington |
| 1997—Naples, FL | Kit. V. Arom | D. Glenn Pennington |
| 1998—Orlando, FL | Hendrick B. Barner | D. Glenn Pennington |
| 1999—San Juan, PR | William A. Baumgartner | Carolyn E. Reed |
| 2000—Marco Island, FL | Donald J. Watson | Carolyn E. Reed |
| 2001—San Antonio, TX | William F. Sasser | Carolyn E. Reed |
| 2002—Miami, FL | Constantine Mavroudis | Carolyn E. Reed |
| 2003—Bonita Springs, FL | Joseph I. Miller, Jr. | John H. Calhoon |
| 2004—Cancun, Mexico | D. Glenn Pennington | John H. Calhoon |
| 2005—Orlando, FL | Irving Kron | John H. Calhoon |
| 2006—Tucson, AZ | Ross Ungerleider | John H. Calhoon |
| 2007—Bonita Springs, FL | Carolyn E. Reed | Robert J. Cerfolio |
| 2008—Austin, TX | John W. Hammon | Robert J. Cerfolio |

* Deceased

## THE PRESIDENT'S AWARD

The President's Award for the best scientific paper is given annually to the author of the paper judged to be superior to all others delivered at the previous annual meeting of the Association. The award is given on the basis of originality, content and presentation. Previous winners have uniformly displayed excellence in all areas. The author receives a certificate identifying the award and a suitable monetary reward. The winner is chosen by the President with the assistance of the Council members.

## THE PRESIDENT'S AWARD FOR THE BEST SCIENTIFIC PAPER

1964—Bertram A. Glass . . . . . .New Orleans, Louisiana
1965—Harold C. Urschel, Jr. . . . . .Dallas, Texas
1966—Thomas J. Yeh . . . . . .Savannah, Georgia
1967—Yale H. Zimberg . . . . . .Richmond, Virginia
1968—J. Alex Haller, Jr. . . . . .Baltimore, Maryland
1969—William H. Sewell . . . . . .Sayre, Pennsylvania
1970—George R. Daicoff . . . . . .St. Petersburg, Florida
1971—Charles E. Eastridge . . . . . .Memphis, Tennessee
1972—J. Kent Trinkle . . . . . .San Antonio, Texas
1973—Donald L. Bricker . . . . . .Lubbock, Texas
1974—Harvey W. Bender, Jr. . . . . .Nashville, Tennessee
1975—Charles E. Martin . . . . . .Nashville, Tennessee
1976—Gordon F. Murray . . . . . .Chapel Hill, North Carolina
1977—Denis H. Tyras . . . . . .St. Louis, Missouri
1978—Joseph I. Miller, Jr. . . . . .Atlanta, Georgia
1979—M. Wayne Flye . . . . . ..Galveston, Texas
1980—Francis Robicsek . . . . . .Charlotte, North Carolina
1981—Ellis L. Jones . . . . . .Atlanta, Georgia
1982—William G. Malette . . . . . .Omaha, Nebraska
1983—Robert H. Breyer . . . . . .Springfield, Massachusetts
1984—Blair A. Keagy . . . . . .Chapel Hill, North Carolina
1985—John W. Hammon, Jr. . . . . .Nashville, Tennessee
1986—William H. Frist . . . . . .Nashville, Tennessee
1987—Jean-Nicolas Vauthey.. . . . . .New Orleans, Louisiana
1988—Robert A. Gustafson . . . . . .Morgantown, West Virginia
1989—Harvey I. Pass . . . . . .Bethesda, Maryland
1990—Vincent L. Gott . . . . . .Baltimore, Maryland
1991—Ross M. Ungerleider . . . . . .Durham, North Carolina
1992—William H. Frist . . . . . ..Nashville Tennessee
1993—Kirk R. Kanter . . . . . .Atlanta, Georgia
1994—Thomas L. Spray . . . . . .St. Louis, Missouri
1995—Constantine Mavroudis . . . . . .Chicago, Illinois
1996—David A. Fullerton . . . . . .Denver, Colorado
1997—Christopher J. Knott-Craig . . . . . .Oklahoma City, Oklahoma
1998—James L. Zellner . . . . . .Charleston, South Carolina
1999—Thomas D'Amico . . . . . .Durham, North Carolina
2000—Joseph C. Cleveland, Jr. . . . . .Denver, Colorado
2001—Neal D. Kon . . . . . .Winston-Salem, South Carolina
2002—Joseph S. Coselli . . . . . .Houston, Texas
2003—Robert J. Cerfolio . . . . . .Birmingham, Alabama
2004—Malcolm DeCamp . . . . . .Boston, Massachusetts
2005—V. Seenu Reddy . . . . . .San Antonio, Texas
2006—Andrew W. ElBardissi . . . . . .Rochester, Minnesota
2007—John Stulak . . . . . .Rochester, Minnesota

## THE TIKI AWARD

The quality of slides can greatly enhance or detract from a scientific presentation. In order to emphasize the importance of well planned and prepared slides, the Southern Thoracic Surgical Association has created the Tiki Award.

This award is given to that person who presents a slide at the annual meeting which is judged by a committee appointed by the President to be the most memorable and noteworthy. This slide can be selected because it is unintelligible, confusing, cluttered, irrelevant, or conversely because it is superbly clear, concise, colorful, pertinent, and/or utilizes state of the art graphics.

## TIKI AWARD WINNERS

1964—Watts R. Webb . . . . . .New Orleans, Louisiana
1965—J. Alex Haller, Jr. . . . . .Baltimore, Maryland
1966—Richard M. Peters . . . . . .San Diego, California
1967—Myron W. Wheat . . . . . .St. Petersburg, Florida
1968—Carl H. Almond . . . . . .Columbia, South Carolina
1969—Francis Robicsek . . . . . .Charlotte, North Carolina
1970—William A. Neely . . . . . .Jackson, Mississippi
1971—Paul C. Adkins . . . . . ..Washington, DC
1972—Panagiotis Symbas . . . . . .Atlanta, Georgia
1973—James L. Alexander . . . . . .Savannah, Georgia
1974—Lloyd H. Hudson . . . . . .Flint, Michigan
1975—Richard E. Clark . . . . . .St. Louis, Missouri
1976—William S. Lyons . . . . . .Alexandria, Virginia
1977—Maruf A. Razzuk . . . . . .Dallas, Texas
1978—Harold C. Urschel, Jr . . . . . ..Dallas, Texas
1979—Maruf A. Razzuk . . . . . .Dallas, Texas
1980—Francis Robicsek . . . . . .Charlotte, North Carolina
1981—Robert Sade . . . . . .Charleston, South Carolina
1982—Kit V. Arom . . . . . .Minneapolis, Minnesota
1983—Herbert E. Warden . . . . . .Morgantown, West Virginia
1984—Noel L. Mills . . . . . .New Orleans, Louisiana
1985—George C. Kaiser . . . . . .St. Louis, Missouri
1986—J. G. Selle . . . . . .Charlotte, North Carolina
1987—Steven Gundry . . . . . .Baltimore, Maryland
1988—Harvey I. Pass . . . . . .Bethesda, Maryland
1989—Duke E. Cameron . . . . . .Baltimore, Maryland
1990—Richard E. Clark . . . . . .Pittsburgh, Pennsylvania
1991—William H. Coltharp . . . . . .Nashville, Tennessee
1992—Joseph S. Coselli . . . . . .Houston, Texas
1993—Benson R. Wilcox . . . . . .Chapel Hill, North Carolina
1994—P. Michael McFadden . . . . . .New Orleans, Louisiana
1995—Carolyn E. Reed . . . . . .Charleston, South Carolina
1996—John L. Ochsner . . . . . .New Orleans, Louisiana
1997—Clifford H. Van Meter, Jr. . . . . .New Orleans, Louisiana
1998—John D. Oswalt . . . . . .Austin, Texas
1999—W. Randolph Chitwood . . . . . .Greenville, North Carolina
2000—Ross M. Ungerleider . . . . . .Portland, Oregon
2001—Neal D. Kon . . . . . .Winston-Salem, South Carolina
2002—W. Steves Ring . . . . . .Dallas, Texas
2003—Betsey Urschel . . . . . .Dallas, Texas
2004—John D. Puskas . . . . . .Atlanta, Georgia
2005—Meredith L. Scott . . . . . .Shell, Wyoming
2006—Constantine Mavroudis . . . . . .Chicago, Illinois
2007—Robert J. Cerfolio . . . . . .Birmingham, Alabama

## THE OSLER ABBOTT AWARD

The Osler Abbott Award was first given in 1960 and has been awarded annually to that member of the Association who excels in the art of discussionmanship. It was named for Osler Abbott, M.D. of Atlanta, Georgia, who, in 1950, somehow managed to discuss 26 papers, no mean feat since only 25 were presented and one was his own!

In the early years, sheer volume of discussion was sufficient to earn at least an honorable mention, but volume alone never won the award. More important were factors such as pomposity, arrogance, irrelevancy, and the use of outdated slides which had been shown on two or more occasions. In recent years the tactics have ranged from extreme subtlety to blatant exhibitionism and from apparent indifference to obvious covetousness.

To place this traditional award on a somewhat higher plane of competition, the Council, in its wisdom, decided to base the decision on Oslerian principles, and selection would come from evaluation of the more memorable of discussions during the scientific sessions.

Thus, the reincarnated purposes of the Osler Abbott Award of the Southern Thoracic Surgical Association are:

1. To focus on the importance of open, frank, and candid discussion in the spirit and substance of the Southern Thoracic Surgical Association and, in this way, to encourage more objective and active participation by all members attending the annual meeting.

2. To stimulate a healthy give-and-take among the members and, thereby, enhance the camaraderie and esprit-de-corps which have traditionally characterized the Southern Thoracic Surgical Association.

## OSLER ABBOTT AWARD WINNERS

1960—Joseph W. Peabody Jr. . . . . Washington, DC
1961—Milton V. Davis . . . . . Dallas, Texas
1962—E. Converse Peirce, II. . . . . New York, New York
1963—Lewis H. Bosher Jr. . . . . Richmond, Virginia
1964—Sam E. Stephenson Jr. . . . . Jacksonville, Florida
1965—Bertram A. Glass . . . . . .New Orleans, Louisiana
1966—Robert E. Carr . . . . . Fort Worth, Texas
1967—Osler A. Abbott. . . . . Atlanta, Georgia
1968—Watts R. Webb . . . . . New Orleans, Louisiana
1969—William A. Cook . . . . . Andover, Massachusetts
1970—Edward F. Parker . . . . . Charleston, South Carolina
1971—Minas Joannides Jr. . . . . St. Petersburg, Florida
1972—J. Alex Haller Jr.. . . . . Baltimore, Maryland
1973—Harold C. Urschel Jr. . . . . Dallas, Texas
1974—Bertram A. Glass . . . . . New Orleans, Louisiana
1975—Gilbert S. Campbell . . . . . Little Rock, Arkansas
1976—James W. Brooks . . . . . Richmond, Virginia
1977—J. Kent Trinkle . . . . . San Antonio, Texas
1978—Raymond C. Read . . . . . Little Rock, Arkansas
1979—Richard E. Clark. . . . . St. Louis, Missouri
1980—Joseph Peabody Jr . . . . . Washington, DC
1981—Robert M. Sade. . . . . Charleston, South Carolina
1982—James S. Donahoo . . . . . Philadelphia, Pennsylvania
1983—Francis Robicsek . . . . . Charlotte, North Carolina
1984—Milton V. Davis . . . . . Kaufman, Texas

1985—George C. Kaiser . . . . . St. Louis, Missouri
1986—Milton V. Davis . . . . . Kaufman, Texas
1987—J. Alex Haller Jr. . . . . .Baltimore, Maryland
1988—Ronald C. Elkins . . . . . .Oklahoma City, Oklahoma
1989—Bradley M. Rodgers . . . . . .Charlottesville, Virginia
1990—Harvey W. Bender Jr. . . . . .Nashville, Tennessee
1991—Kamal A. Mansour . . . . . .Atlanta, Georgia
1992—Arthur E. Baue. . . . . .St. Louis, Missouri
1993—Kit V. Arom . . . . . .Minneapolis, Minnesota
1994—Frederick L. Grover . . . . . .Denver, Colorado
1995—Constantine Mavroudis . . . . . .Chicago, Illinois
1996—George Daicoff . . . . . .St. Petersburg, Florida
1997—Ross M. Ungerleider . . . . . .Durham, North Carolina
1998—Lynn Harrison . . . . . .New Orleans, Louisiana
1999—William A. Baumgartner . . . . . .Baltimore, Maryland
2000—Robert J. Cerfolio . . . . . .Birmingham, Alabama
2001—Carolyn E. Reed . . . . . .Charleston, South Carolina
2002—John H. Calhoon . . . . . .San Antonio, Texas
2003—Constantine Mavroudis . . . . . .Chicago, Illinois
2004—Keith Naunheim . . . . . .St. Louis, Missouri
2005—Irving Kron . . . . . .Charlottesville, Virginia
2006—Thoralf Sundt . . . . . .Rochester, Minnesota
2007—W. Steves Ring . . . . . .Dallas, Texas

## THE KENT TRINKLE EDUCATION LECTURESHIP

The Kent Trinkle Educational Lectureship is dedicated to J. Kent Trinkle, MD, (STSA President, 1981-1982) for his contributions to cardiothoracic surgery and STSA. Each year, in honor of Dr. Trinkle's remarkable dedication to student education, an STSA member is selected to present on his/her training program. Presenters are selected by the STSA President.

1993—Benson R. Wilcox.....Chapel Hill, North Carolina
1994—George C. Kaiser.....St. Louis, Missouri
1995—J. Kent Trinkle.....San Antonio, Texas
1996—Irving L. Kron .....Charlottesville, Virginia
1997—William A. Baumgartner .....Baltimore, Maryland
1998—Donald C. Watson, Jr.....Memphis, Tennessee
1999—Fred A. Crawford, Jr.....Charleston, South Carolina
2000—Robert A. Guyton .....Atlanta, Georgia
2001—Joel D. Cooper.....St. Louis, Missouri
2002—W. Steves Ring .....Dallas, Texas
2003—Walter G. Wolfe.....Durham, North Carolina
2004—Joseph Coselli.....Houston, Texas
2005—Neal Kon.....Winston-Salem, North Carolina
2006—Joe B. Putnam, Jr.....Nashville, Tennessee
2007—Walter H. Merrill.....Cincinnati, Ohio
2008—Curt Tribble. .....Gainsville, Florida

## HAWLEY H. SEILER RESIDENTS COMPETITION AWARD

The Hawley H. Seiler Residents Competition Award is presented to an outstanding cardiothoracic resident. This honor is bestowed upon the resident excelling in the following categories regarding their abstract submission: manuscript and oral presentation. This honor is named after Past President and STSA founding member, Hawley H. Seiler, MD.

Dr. Seiler's many contributions to STSA included serving as Secretary for 15 years and presenting on numerous topics at Annual Meetings.

1997—Elaine E. Tseng . . . . . .Baltimore, Maryland
1998—Stephen Langley . . . . . .Durham, North Carolina
1999—Aron Goldberg . . . . . .Charleston, South Carolina
2000—Cullen D. Morris . . . . . .Atlanta, Georgia
2001—Sitaram M. Emani . . . . . .Durham, North Carolina
2002—Thomas H. Maxey . . . . . .Charlottesville, Virginia
2003—Brian T. Bethea . . . . . .Baltimore, Maryland
2004—Tara Karamlou . . . . . .Portland, Oregon
2005—Edward John Hickey . . . . . .London, England
2006—Thomas K. Varghese . . . . . .Seattle, Washington
2007—Tara Karamlou . . . . . .Portland, Oregon

## MAVROUDIS-URSCHEL AWARD

The Mavroudis-Urschel Award was established in 2006 to recognize and honor an STSA member who has not only made important contributions to the STSA scientific program, but who has also uniquely personified the social spirit, camaraderie and fun for which STSA is famous. The award is named for STSA Past Presidents Constantine Mavroudis and Harold Urschel, who both contributed significantly not only to the scientific value of the STSA Annual Meeting but also, and just as importantly, to the organization's high spirits (and high-jinx).

There is more to an organization than its bylaws, and there is more to its annual meeting than the slides and presentations. To many, STSA meetings are as much about social interactions as they are about new research findings in cardiothoracic surgery. Meeting highlights also happen at social events, such as the president's mixer, receptions, sports events and in the exhibit hall breaks. The Award goes to a member who has enhanced both aspects of the organization, scientific and social, and done so with a distinctive, even flamboyant, personal style – in the manner of its namesakes.

The Mavroudis-Urschel Award is made at the discretion of the President with input and recommendation from the double-secret Tiki and Osler-Abbot committee chairs. When given, the award is announced at the annual dinner/dance.

2008—Kit Arom . . . . . .Bangkok, Thailand

## STSA INSPIRATION AWARD

The STSA Inspiration Award was established in 2007 to recognize the important contribution of mentorship to the specialty and the organization, and to encourage upcoming generations of CT surgeons by helping to cultivate mentors worthy of emulation.

The future of cardiothoracic surgery is in the hands and hearts of its medical students and residents. Inspiring a resident or medical student to become a CT surgeon – to become a great CT surgeon – is among the most far-reaching and important contributions one can make to the specialty and ultimately to the Southern Thoracic Surgical Association.

The residency program directors and faculty at teaching programs affiliated with the STSA are developing and inspiring future cardiothoracic surgeons every day -- teaching them to become leaders in their future institutions, practices, and communities. And mentorship is not limited to program directors and faculty. Surgeons in private practice hire young graduates and become influential mentors providing career guidance and support often for years to come.

To acknowledge the crucial importance of mentorship in developing CT surgeons and to recognize and positively reinforce STSA members who have excelled in their mentorship roles, STSA established its Inspiration Award in 2007. The Inspiration Award is given to the STSA member who has demonstrated exceptional efforts in motivating, inspiring, and cultivating the clinical and research talents of medical students, residents and/or early career CT surgeons.

Nominations must be submitted in writing by September 1 to the sitting STSA President to be considered for possible presentation at the subsequent STSA Annual Meeting. Recommendation letters should outline the specific merits of the nominee and his or her positive influences for the 'mentee(s).' Recipient must be a member of STSA in good standing. The award will be given at the discretion of the President in consultation with the Council.

2008—Robert J. Cerfolio . . . . . .Birmingham, Alabama
Hooshang Bolooki . . . . . .Miami, Florida

## CONTINUING MEDICAL EDUCATION (CME) OVERVIEW

### Discussion of Papers

Discussions of papers at the Annual Meeting are published in *The Annals of Thoracic Surgery*. Please review the program outline carefully to determine if you have a particular interest in some of the topics, then be prepared to discuss them at the meeting. If you wish, you may request a copy of the manuscript in advance of the meeting by contacting the author directly. Each session has a limited amount of time reserved for discussion. Assigned discussants are limited to two minutes and two questions.

### Presentation and Publication

Please also note that authors of oral presentations are required to submit a manuscript for consideration for publication in *The Annals of Thoracic Surgery* before noon on Saturday, November 8, 2008. Manuscripts must be submitted via *The Annals* on-line manuscript submission system at www.atseditorialoffice.org. A paper copy of the manuscript will not be accepted for consideration. Primary authors and co-authors that are delinquent in submitting their manuscript to *The Annals* on time will not have their presentations considered for publication in *The Annals*. In addition, these authors will not have abstracts considered by the Program Committee of the STSA for two (2) subsequent meetings.

### Accreditation

The Southern Thoracic Surgical Association is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians. The STSA designates this activity for a maximum of 20.25 category 1 credits toward the AMA Physician's Recognition Award. Each physician should claim only those credits that he/she actually devoted to the activity.

### STSA CME Mission

The continuing medical education mission of the Southern Thoracic Surgical Association is to deliver high quality, practical, and scientifically rigorous education regarding what is new or of importance in the clinical disciplines of cardiac surgery, general thoracic surgery, and congenital heart surgery as well as in the areas of practice management and healthcare policy for STSA cardiothoracic surgeon members and non-members. The primary continuing education program conducted by STSA is at its Annual Meeting. This meeting is composed of peer-reviewed scientific abstracts, invited presentations by leading experts, group presentations, panel discussions, video programs, and new modalities as appropriate. Through its continuing medical education program, STSA strives to educate its members and meeting attendees to improve the quality of their patient care and their professional lives.

## Evaluations

Registrants will receive all CME and session evaluation forms in one packet at the time of registration. Attendees should return the *entire packet* at the end of the meeting after completing the evaluation forms for all sessions attended.

**Physicians wishing to receive CME for sessions they attend will be required to complete the evaluation form for the session. This will be the only way physicians will be able to earn CME for their attendance.**

The evaluation form will provide physicians the opportunity to offer feedback to the STSA Council and Program Committee regarding content offered, including information about applicability of the content to current practice, quality of the material presented and recommendations for future programming. This information is invaluable in the planning of future STSA educational programs.

In addition to being useful for program planning, program evaluation and future needs assessment are important components of the requirements that the STSA must meet to maintain accreditation through the Accreditation Council for Continuing Medical Education (ACCME). It is by meeting the requirements set forth by the ACCME that the STSA is able to award CME credit for educational programming.

## CME Process

To ensure that this process will work effectively, session evaluation forms to claim CME will be provided in a packet during registration.

Each evaluation will include a series of questions regarding the program content. In addition, physicians will need to complete the cover page of the evaluation packet, sign each form upon completion and indicate the actual amount of time spent in individual sessions. Without this information, CME credit cannot be awarded. Bins for depositing these packets will be located outside the meeting rooms and near the registration desk.

Evaluation forms will be processed soon after the Annual Meeting and entered into an electronic file that STSA staff will use to generate a CME certificate. These certificates will be mailed to physicians.

This process will allow the STSA to maintain an electronic record of CME earned by physicians. Files will be maintained for a minimum of six (6) years. Any questions regarding this procedure should be directed to Katie McAuliff Bochenek, at 312/202-5835, or via e-mail at kbochenek@stsa.org.

## POLICY REGARDING DISCLOSURE

The Southern Thoracic Surgical Association will seek appropriate disclosure information from all presenters and communicate such information to the learner. Appropriate disclosure information must be on file before the educational program is delivered.

STSA leadership and staff will also provide disclosure information to be kept on file and communicated to the membership as appropriate.

The STSA Disclosure Policy (as outlined below) will be communicated to the learner via the Annual Meeting Program Book.

**DISCLOSURE POLICY** As a sponsor of continuing medical education accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Southern Thoracic Surgical Association requires that any individual who is in a position to control the content of an educational activity must disclose all relevant financial relationships with any commercial interest. The ACCME defines a "relevant financial relationship" as a relationship of any amount during the previous twelve (12) months. Failure to disclose relevant financial relationships disqualifies the individual from being a planning committee member, a teacher, or an author of CME materials, and this individual cannot have any control or responsibility for the development, management, presentation, or evaluation of STSA CME activities. This requirement is intended neither to imply any impropriety of such relationships nor to prejudice any individual presenter or author. It is merely to identify such relationships through full disclosure and to allow the STSA to resolve potential conflicts prior to the planning and implementation of an educational activity.

The question of whether a disclosed conflict situation could represent undue influence on the educational activity by a commercial interest, or whether the disclosed information is sufficient to consider an abstract, presentation, or other educational enduring material to represent potentially biased information must be resolved prior to an individual's involvement in STSA educational programming.

Required disclosures include any relationship between the individual contributor to STSA educational programming (including known relationships of his or her immediate family, department, and partners) and any healthcare-related business or other entity whose products or services may be discussed in, or directly affected in the marketplace by, the educational content that involves (1) financial interest of any amount (e.g., through ownership of stock, stock options, or bonds) (2) the receipt of any amount of cash, goods or services within the current 12-month period (e.g., through research grants, employment, consulting fees, royalties, travel, or gifts) or (3) a non-remunerative position of influence (e.g., as officer, director, trustee or public spokesperson). EXCLUDED are blind trusts or other passive investments such as mutual funds. In the case of a financial or other relationship disclosure, the company, product/service, and specific nature of the relationship will be noted. Disclosure is mandatory for any person involved in the planning, management, presentation, and evaluation of STSA educational products and programming.

Additionally, the fact that the presentation, paper, or other educational product describes (a) the use of a device, product, or drug that is not

FDA approved or (b) an off-label use of an approved device, product, or drug must also be disclosed. This requirement has been adopted in response to FDA policy and recent case law involving medical societies, and is not intended to prohibit or inhibit independent presentation or discussion regarding the uses of devices, products, and drugs as described at (a) or (b) above.

For live presentations, all disclosures must be revealed by a statement or slide at the beginning of the presentation and will be noted in all published material related to the work. Speakers are required to disclose that they have nothing to disclose if this is the case.

Authors listed with a Ⓓ next to their names have indicated, in accordance with the ACCME Standards and the STSA Disclosure Policy, that they have a financial or other relationship with a healthcare-related business or other entity to disclose; or their paper's content describes the use of a device, product or drug, that is not FDA approved, or the off-label use of an approved device, product or drug. Please refer to the Relationship Disclosure Index on page 330 for a listing of all disclosure information.

## OVERALL MEETING OBJECTIVES

To present recent advances in research, surgical techniques, patient management, and the diagnosis and treatment of cardiothoracic disease to cardiothoracic specialists and related health care professionals; and to provide a forum for cardiothoracic surgeons and related healthcare professionals to exchange ideas through open discussion periods and question-and-answer sessions related to the practice of cardiothoracic surgery.

After attending the STSA Annual Meeting, participants should have a broader understanding of new and standard techniques and current research specifically related to adult cardiac surgery, general thoracic surgery, congenital heart surgery, and related transplant procedures. Attendees can utilize knowledge gained from the STSA Annual Meeting to help select appropriate surgical procedures and interventions and integrate state of the art knowledge into their own practices.

## TARGET AUDIENCE

The STSA Annual Meeting is intended for all professionals involved in delivery of cardiothoracic care with particular emphasis on cardiothoracic surgeons. Cardiothoracic residents, fellows, nurse practitioners, research scientists, and other health care professionals may also benefit from various sessions and interactions with cardiothoracic colleagues.

## OTHER MEETING INFORMATION

### Speaker Ready Room

The Speaker Ready Room is located in **Baron C**. Speakers are requested to go to this room upon arrival, or at least 4 hours prior to the opening of their session to upload slides. Speakers will not be allowed to bring their laptop to the podium.

## SCHEDULE OF EVENTS
## 55TH ANNUAL MEETING OF
## THE SOUTHERN THORACIC
## SURGICAL ASSOCIATION

### WEDNESDAY, NOVEMBER 5, 2008

| | |
|---|---|
| 3:00 p.m. - 8:00 p.m. | Registration – *Lost Pines Foyer* |
| 8:00 p.m. - 10:00 p.m. | Surgical Motion Pictures – *Lost Pines 1-4* |

### THURSDAY, NOVEMBER 6, 2008

| | |
|---|---|
| 6:30 a.m. - 5:00 p.m. | Registration – *Lost Pines Foyer* |
| 6:30 a.m. | Continental Breakfast – *Lost Pines Foyer* |
| 7:00 a.m. - 8:15 a.m. | Postgraduate Breakouts |
| | Adult Cardiac – *Lost Pines 1-4* |
| | Congenital – *Baron A-B* |
| | Thoracic – *Baron E, F, G* |
| 8:15 a.m. - 8:30 a.m. | Break |
| 8:30 a.m. - 10:10 a.m. | Postgraduate Program – *Lost Pines 1-4* |
| 10:10 a.m. - 10:25 a.m. | Break |
| 10:25 a.m. - 12:05 p.m. | Postgraduate Program – *Lost Pines 1-4* |
| 12:05 a.m. - 1:00 p.m. | Break |
| 12:00 p.m. - 5:00 p.m. | Exhibits Open – *Lost Pines 5-8* |
| 1:00 p.m. - 3:00 p.m. | First Scientific Session A – *Lost Pines 1-4* |
| 3:00 p.m. - 3:30 p.m. | Break & Visit Exhibits – *Lost Pines 5-8* |
| 3:30 p.m. - 5:00 p.m. | First Scientific Session B – *Lost Pines 1-4* |

### FRIDAY, NOVEMBER 7, 2008

| | |
|---|---|
| 6:30 a.m. - 5:30 p.m. | Registration – *Lost Pines Foyer* |
| 6:30 a.m. | Continental Breakfast (*Lost Pines Foyer*) |
| 7:00 a.m. - 7:50 a.m. | Basic Science Forum – *Lost Pines 1-4* |
| 8:00 a.m. - 10:00 a.m. | Second Scientific Session A – *Lost Pines 1-4* |
| 9:45 a.m. - 11:30 a.m. | Exhibits Open – *Lost Pines 5-8* |
| 10:00 a.m. - 10:30 a.m. | Break & Visit Exhibits – *Lost Pines 5-8* |
| 10:30 a.m. - 11:05 a.m. | President's Invited Lecturer:<br>Paul J. Barringer, III<br>*Medical Liability, Health Courts and Patient Safety*<br>*Lost Pines 1-4* |
| 11:05 a.m. - 11:20 a.m. | Kent Trinkle Education Lectureship:<br>*Curt Tribble, MD<br>University of Florida<br>*Lost Pines 1-4* |

| | |
|---|---|
| 11:20 a.m. - 12:00 p.m. | Presidential Address:<br>*John W. Hammon, MD<br>*By The Numbers*<br>*Lost Pines 1-4* |
| 12:00 p.m. | All Attendee Luncheon – *Pecan Court* |
| 1:00 p.m. - 2:00 p.m. | Dessert Served in the Exhibit Hall –<br>*Lost Pines 5-8* |
| 1:00 p.m. - 4:15 p.m. | Exhibits Open – *Lost Pines 5-8* |
| 2:00 p.m. - 3:30 p.m. | Third Scientific Session A<br>Cardiac Breakout – *Lost Pines 1-4*<br>General Thoracic Breakout – *Baron E, F, G*<br>Congenital Breakout – *Baron A-B* |
| 3:30 p.m. - 4:00 p.m. | Break & Visit Exhibits – *Lost Pines 5-8* |
| 4:00 p.m. - 5:00 p.m. | Third Scientific Session B<br>Cardiac Breakout – *Lost Pines 1-4*<br>General Thoracic Breakout – *Baron E, F, G*<br>Congenital Breakout – *Baron A-B* |
| 5:00 p.m. - 6:00 p.m. | STSA Business Meeting –<br>**STSA Members Only**<br>*Lost Pines 1-4* |
| 7:00 p.m. - 9:00 p.m. | President's Mixer – *LBJ Pavilion* |

## SATURDAY, NOVEMBER 8, 2008

| | |
|---|---|
| 6:30 a.m. - 11:30 a.m. | Registration – *Lost Pines Foyer* |
| 6:45 a.m. | Continental Breakfast in the Exhibit Hall<br>– *Lost Pines 5-8* |
| 6:45 a.m. - 10:30 a.m. | Exhibits Open – *Lost Pines 5-8* |
| 7:15 a.m. - 8:15 a.m. | Ethics Session: *Ethical Obligation of Surgeons to Non-Compliant Patients: Can a Surgeon Refuse to Operate on a Drug-Abusing Patient with a Recurrent Aortic Prosthesis Infection?*<br>*Lost Pines 1-4* |
| 7:15 a.m. - 8:15 a.m. | Coding Update: *Update on CPT and Physician Payment Issues for 2009 – Baron A-B* |
| 8:30 a.m. - 9:45 a.m. | Fourth Scientific Session A – *Lost Pines 1-4* |
| 9:45 a.m. - 10:15 a.m. | Break & Visit Exhibits – *Lost Pines 5-8* |
| 10:15 a.m. - 11:30 a.m. | Fourth Scientific Session B – *Lost Pines 1-4* |
| 11:30 a.m. | Program Adjourns |
| 1:00 p.m. - 6:00 p.m. | Various Social & Sporting Events – See page 17 for details |
| 7:00 p.m. - 11:00 p.m. | Texas Tuxedo Dinner Dance |
| 7:00 p.m. - 8:00 p.m. | Reception – *Lost Pines Foyer* |
| 8:00 p.m. - 11:00 p.m. | Dinner and Awards – *Lost Pines 1-4* |

## SCHEDULE OF ACTIVITIES

### THURSDAY, NOVEMBER 6

**Spouses' Hospitality Suite** – *Mina Room*
**Time:** 8:00 a.m. – Noon
STSA is providing a hospitality room for your spouse to mingle with other spouses and to make plans for exploring Lost Pines and the surrounding areas.

**Spouses' Event – Tales of Texas** – *Mina Room*
**Time:** 11:00.a.m.
Hear humorous and interesting historical stories about the Lost Pines region. A Texan in authentic attire will tell these engaging tales including entertaining and educational historical facts!

### FRIDAY, NOVEMBER 7

**Spouses' Hospitality Suite** – *Mina Room*
**Time:** 8:00 a.m. – Noon
STSA is providing a hospitality room for your spouse to mingle with other spouses and to make plans for exploring Lost Pines and the surrounding areas.

**Spouses' Event - Stepping Out in Nature**
**Time:** 8:30 a.m. – 10:30 a.m.
**Cost:** $30
Come join a McKinney Rough's Park Naturalist and discover the flora and fauna of the Texas eco-regions represented throughout the areas nature trails. Identify birds and butterflies, search for animal tracks. The Park Naturalist will show you the natural world from a whole new perspective. This outing will cover between 1-2 miles. Be sure to wear comfortable clothes, walking shoes, and use sunscreen. Sign up early!
**Subject to cancellation if there is a lack of interest. Registrants will be notified in advance and refunds will be issued if this event is cancelled.*

**All Attendee Lunch** – *Pecan Court*
**Time:** 12:00 p.m.

**President's Mixer** – *LBJ Pavilion*
**Time:** 7:00 p.m. – 9:00 p.m.
**Cost:** Complimentary
Gather with fellow meeting attendees for an evening of networking and fun.
*Attendees receive 2 tickets with registration. Additional tickets may be purchased for $15.*

## SATURDAY, NOVEMBER 8

**Spouses' Hospitality Suite –** *Mina Room*
**Time:** 8:00 a.m. – Noon
STSA is providing a hospitality room for your spouse to mingle with other spouses and to make plans for exploring Lost Pines and the surrounding areas.

**Golf Tournament –** *Wolfdancer Golf Club*
**Time:** 1:00 p.m. – Shotgun Start
**Cost:** $170.00 *(Includes greens fees and box lunch.)*
The Wolfdancer Golf Club is an Arthur Hills & Steve Forrest and Associates design that opened in June of 2006. Please note the following dress code is to be followed: Shirt with collar, shorts must be at least mid-thigh and cannot be denim, shoes with soft spikes.
**Limited number of tee times available – Be sure to register in advance!*

**Tennis Tournament –** *Tennis Court 1*
**Time:** 1:00 p.m.
**Cost:** $35.00 *(Includes court fees, tennis balls, and refreshments)*
Join fellow attendees for a day of tennis. The Hyatt Regency Lost Pines offers guests top-notch courts and amenities.
**Subject to cancellation if there is a lack of interest. Registrants will be notified in advance and refunds will be issued if this event is cancelled.*

**Texas Tuxedo Dinner Dance**
**Reception:** 7:00 p.m. – 8:00 p.m. – *Lost Pines Foyer*
**Dinner:** 8:00 p.m. – 11:00 p.m. – *Lost Pines 1-4*
**Cost:** $110.00 per person
STSA's traditional Saturday night dinner is goin' Texan! For a Texas Tuxedo event, gentlemen are invited to wear jeans with either a tuxedo shirt and jacket or a dark suit coat. Cowboy boots and ten gallon hat are not required, but are encouraged! Ladies, as always, can choose from the full spectrum of fancy: cocktail dresses or pants suits, floor-length skirts – or maybe even a denim skirt, silk blouse and cowboy boots! So feel free to wear Black Tie, Texas Tux or any combination of the two. The important thing is to be comfortable and have fun! It will be the perfect finale to a great meeting.
*Advance registration recommended. A limited number of tickets will be sold on site. Table selection can be done in advance. Please visit the registration desk to select your table.*

## SURGICAL MOTION PICTURES

**WEDNESDAY, NOVEMBER 5, 2008**

8:00 p.m. – 10:00 p.m.

*Lost Pines 1-4*

*(Presentations are limited to ten minutes, followed by five minutes of discussion)*

**Educational Objective:** To provide a visual instruction from recognized authorities on how to perform new or important procedures in the field of cardiothoracic surgery. Authors are present at the meeting and discussion time is allocated for questions from the audience.

**CME Credits Available: 2**

**Moderators:** *John Ikonomidis, MD, and *Bryan Meyers, MD

**8:00 p.m. – 8:15p.m. (p. 46)** 1v **Ross Reversal: Returning the Pulmonary Autograft to its Native Position**
*Kristopher George, Michael J. Flynn, Gosta B. Pettersson
*Cleveland Clinic, Cleveland, OH*

**8:15 p.m. – 8:30 p.m. (p. 48)** 2v **Aortic Valve Bypass Surgery - Beating Heart Therapy for Aortic Stenosis**
*James S. Gammie, Mary J. Santos, Ethan Hagan
*University of Maryland Medical Center, Baltimore, MD*

**8:30 p.m. – 8:45 p.m. (p. 50)** 3v **Thoracoscopic Repair of Circumflex Right Aortic Arch**
*Mora N. Bassem
*University of Chicago, Chicago, IL*

**8:45 p.m. – 9:00 p.m. (p. 52)** 4v **Carinal Resection Via a Median Sternotomy**
*Christine L. Lau, Ryan C. Fields, *Alexander G. Patterson
*University of Virginia, Charlottesville, VA*

**9:00 p.m. – 9:15 p.m. (p. 54)** 5v **Autotransplant for Left Atrial Tumor**
Shanda H. Blackmon, Michael J. Reardon
*The Methodist Hospital, Houston TX*

**9:15 p.m. – 9:30 p.m. (p. 56)** 6v **Laparoscopic Repair of a Morgagni Hernia in an Adult**
Michael J. Weyant
*University of Colorado Health Sciences Center, Aurora, CO*

**9:30 p.m. – 9:45 p.m. (p. 58)** **7v** **Combined Open Proximal and Stent-Graft Distal Repair of a Complex AorticArch Aneurysm**
Andreas Zierer, Mirko Doss
*Hospital of the Johann Wolfgang Goethe University, Frankfurt, Germany*

**9:45 p.m. – 10:00 p.m. (p. 60)** **8v** **Thoracoscopic (VATS) Enucleation of a Proximal Esophageal Leiomyoma**
Virginia R. Litle, Scott J. Swanson, Todd S. Weiser, Jaime Yun
*Mount Sinai Medical Center, New York, NY*

## POSTGRADUATE PROGRAM

**THURSDAY, NOVEMBER 6, 2008**
7:00 a.m.–12:05 p.m.

*The first portion of the Postgraduate Program will feature concurrent sessions in adult cardiac, congenital heart surgery and general thoracic. The Program will continue with a plenary session at 8:30 a.m. All attendees and guests are invited to attend the Keynote presentation at 11:15 a.m.* ***Summaries of postgraduate papers being presented will be posted on the STSA website two weeks prior to the meeting.***

**Educational Objective:** To provide new or important information from recognized authorities about the current practice of cardiothoracic surgery.

**CME Credits Available: 4.5**

### ADULT CARDIAC CONCURRENT SESSION

**New Modalities to Manage Aortic Valve Disease**
**Lost Pines 1-4**
*(Presentations are limited to 20 minutes followed by a 15 minute panel discussion)*
**Moderator:** *Michael DiMaio, MD

| | |
|---|---|
| **7:00 a.m. - 7:20 a.m.** | **Conventional Surgery** **Neal D. Kon, MD* |
| **7:20 a.m. - 7:40 a.m.** | **Transapical Valve Procedures** **Michael J. Mack, MD* |
| **7:40 a.m. - 8:00 a.m.** | **Percutaneous Valve Procedures** *Joseph E. Bavaria, MD* |
| **8:00 a.m. - 8:15 a.m.** | **Panel Discussion** |

### GENERAL THORACIC CONCURRENT SESSION

**Baron E, F, G**
*(Presentations are limited to 15 minutes, followed by 10 minutes of open discussion)*
**Moderator:** *Ara A. Vaporciyan, MD

| | |
|---|---|
| **7:00 a.m. - 7:25 a.m.** | **IIIA Lung Cancer Treatment** **Mark J. Krasna, MD* |
| **7:25 a.m. - 7:50 a.m.** | **Surgical Treatment of Mesothelioma** **David C. Rice, MD* |
| **7:50 a.m. - 8:15 a.m.** | **Treatment of Achalasia** **Keith S. Naunheim, MD* |

## CONGENITAL CONCURRENT SESSION

**My Favorite Operation**
**Baron A-B**
*(Presentations are limited to 15 minutes, followed by a 15 minute panel discussion)*
**Moderator:** *Jeffrey P. Jacobs, MD

| | |
|---|---|
| **7:00 a.m. - 7:15 a.m.** | **AV Canal Repair**<br>*Mark D. Plunkett, MD* |
| **7:15 a.m. - 7:30 a.m.** | **Arterial Switch**<br>**James A. Quintessenza, MD* |
| **7:30 a.m. - 7:45 a.m.** | **Nakaidoh Procedure**<br>(Aortic root translocation over left ventricle)<br>**Victor O. Morell, MD* |
| **7:45 a.m. – 8:00 a.m.** | **Total Anomalous Pulmonary Venous Connection (TAPVC)**<br>**Marco Ricci, MD* |
| **8:00 a.m. – 8:15 a.m.** | **Panel Discussion** |
| **8:15 a.m. – 8:30 a.m.** | **Break** |

## PRO/CON DEBATES

**Lost Pines 1-4**
*(Pro presentations are limited to 15 minutes, followed by a 15 minute Con presentation. Each side will then have 5 minutes for rebuttal, followed by 10 minutes of open discussion)*
**Moderators:** *Michael DiMaio, MD and *Jeffrey P. Jacobs, MD

| | |
|---|---|
| **8:30 a.m. – 9:20 a.m.** | **Management of Stage IA Lung Cancer in High-Risk Patients: Wedge Resection Versus Non-Surgical Therapy**<br>*Pro: Richard J. Thurer, MD*<br>*Con: Craig Stevens, MD* |
| **9:20 a.m. – 10:10 a.m.** | **Thoracic Endografting for Aneurysm, Dissection and Trauma**<br>*Pro: Joseph E. Bavaria, MD*<br>*Con: *Joseph S. Coselli, MD* |
| **10:10 a.m. – 10:25 a.m.** | **Break** |
| **10:25 a.m. – 11:15 a.m.** | **Aprotinin is Good / Aprotinin is Bad**<br>*Pro: Carl L. Backer, MD*<br>*Con: *Ashish S. Shah, MD* |

**POSTGRADUATE**
**KEYNOTE ADDRESS**
**Lost Pines 1-4**

| | |
|---|---|
| **11:15 a.m. – 11:20 a.m.** | **Welcome and Introductions**<br>**Jeffrey P. Jacobs, MD* |
| **11:20 a.m. – 11:25 a.m.** | **Cardiology, Cardiac Surgery, and the Value of Life**<br>**Robert M. Sade, MD* |
| **11:25 a.m. – 12:05 p.m.** | **"Lessons from the Andes"**<br>Roberto Canessa, MD |
| **12:05 p.m. – 1:00 p.m.** | **Break** |
| **12:00 p.m. – 5:00 p.m.** | **Exhibits Open**<br>*Lost Pines 5-8* |

## FIRST SCIENTIFIC SESSION A

**THURSDAY, NOVEMBER 6, 2008**
1:00 p.m.–3:00 p.m.
*Lost Pines 1-4*

*(Presentations are limited to seven minutes, followed by two minutes of discussion from a selected discussant and an additional six minutes of discussion open to the audience)*

**Educational Objective:** To provide new or important information from recognized authorities about the current practice of cardiothoracic surgery.

**CME Credits Available: 2**

**Moderators:** *John Hammon, MD and *Robert Cerfolio, MD

**1:00 p.m. – 1:15 p.m. (p.62)**
**1. The Influence of Surgeon Specialty on Outcomes in General Thoracic Surgery: A National Sample 1996 - 2005**
*Paul Schipper, Brian Diggs, *Ross M. Ungerleider, Karl Welke
*Oregon Health and Sciences University, Portland, OR*
**Discussant:** *Carolyn Reed, Charleston, SC

**1:15 p.m. – 1:30 p.m. (p.64)**
**2. Transapical Aortic Valve Implantation: From On-Pump to Off-Pump**
Andreas Zierer, Volker Schächinger, Stephan Fichtlscherer, Thomas Trepes, Sven Martens, Anton Moritz, Mirko Doss
*Hospital of the Johann Wolfgang Goethe University, Frankfurt, Germany*
**Discussant:** * Vinod H. Thourani, Atlanta, GA

**1:30 p.m. – 1:45 p.m. (p.66)**
**3. A Modification to the Ross Procedure That May Eliminate Autograft Dilatation**
*Ross M. Ungerleider, Joylyn Headings, Mary S. Minette, Karl F. Welke, Stephen Langley
*Oregon Health and Science University, Portland, OR*
**Discussant:** *Duke Cameron, Baltimore, MD

**1:45 p.m. – 2:00 p.m. (p.68)** **4. Peri-Aortic Dacron Sleeve Repair of the Aortic Root for Aortic Insufficiency Associated with Ascending Aneurysm is Durable: Two-Year Followup of the Florida Sleeve Repair**
*Philip J. Hess, Jr., *Charles T. Klodell, *Thomas M. Beaver, Marco T. Bologna, Peter Mikhail, Kent P. Harman, *Curtis G. Tribble, *Tomas D. Martin
*University of Florida, Gainesville, FL*
**Discussant:** *Neal D. Kon, Winston-Salem, NC

**2:00 p.m. – 2:15 p.m. (p.70)** **5. Utility of Removable Esophageal Self-Expanding Covered Metal Stents for Leak and Fistula Management**
Shanda H. Blackmon, Brian J. Dunkin
*The Methodist Hospital, Houston, TX*
**Discussant:** *Richard K. Freeman, Indianapolis, IN

**2:15 p.m. – 2:30 p.m. (p.72)** **6. Surgical Correction of Atrial Fibrillation with the Cryomaze Procedure: Long-Term Outcomes Assessed with Continuous Outpatient Telemetry**
*James S. Gammie, Cindi A. Young, Parijat Didolkar, Leandra S. Krowsoski, *Bartley P. Griffith, Stephen R. Shorofsky, Mary J. Santos, Ann J. Toran, Thomas J. Vander Salm
*University of Maryland Medical Center, Baltimore, MD; North Shore Medical Center, Salem, MA*
**Discussant:** Mark A. Groh, Asheville, NC

**2:30 p.m. – 2:45 p.m. (p.74)** **7. Performance of Synergraft Decellularized Pulmonary Allografts Compared to Standard Cyropreserved Allografts**
Takeshi Konuma, *Edward L. Bove, Eric J. Devaney, Zarry Tavakkol, Sarah Gelehrter, Jennifer C. Hirsch, Richard G. Ohye
*University of Michigan, Ann Arbor, MI*
**Discussant:** *Joseph M. Forbess, Dallas, TX

**2:45 p.m. – 3:00 p.m. (p.76)** **8. Quality of Life and Mood in the Elderly After Recovery Following Major Lung Resection**
Mark K. Ferguson, Carolyn M. Parma, Amy D. Celauro, Wickii T. Vigneswaran
*The University of Chicago, Chicago, IL*
**Discussant:** *Todd L. Demmy, Buffalo, NY

**3:00 p.m. – 3:30 p.m.** **Break – Visit Exhibits**
*Lost Pines 5-8*

## FIRST SCIENTIFIC SESSION B

### THURSDAY, NOVEMBER 6, 2008

3:30 p.m.–5:00 p.m.
*Lost Pines 1-4*

*(Presentations are limited to seven minutes, followed by two minutes of discussion from a selected discussant and an additional six minutes of discussion open to the audience)*

**Educational Objective:** To provide new or important information from recognized authorities about the current practice of cardiothoracic surgery.

**CME Credits Available: 1.5**

**Moderators:** *John Hammon, MD, and *Robert Cerfolio, MD

**3:30 p.m. – 3:45 p.m. (p.78)**

**9. Short and Long-Term Outcomes of Aortic Valve Surgery in Patients with Impaired Left Ventricular Function**
Faisal Habib Cheema, Bryan Y. Hwang, Ghulam Murtaza, Demetra Spiliotopoulos, Yildrim Imren, Tianna Umann, Ariel Benson, Fabio Barili, Tariq M. Naseem, Morgan A. Jeffrey, Barry C. Esrig, Mehmet C. Oz, Craig R. Smith, Michael Argenziano
*College of Physicians and Surgeons of Columbia University and New York Presbyterian Hospital, NY*
**Discussant:** * Donald D. Glower, Jr., Durham, NC

**3:45 p.m. – 4:00 p.m. (p.80)**

**10. The Safe Removal of Chest Tubes Despite an Air Leak**
*Robert J. Cerfolio, Ayesha S. Bryant
*University of Alabama at Birmingham, Birmingham, AL*
**Discussant:** * Joseph Miller, Atlanta, GA

**4:00 p.m. – 4:15 p.m. (p.82)**

**11. Do Abdominal Complications Impact Outcome Following Mechanical Circulatory Support Therapy?**
*Jay K. Bhama, Prasad Adusumulli, Stacey H. Brann, Michael P. Siegenthaler, Kenneth R. McCurry, Yoshiya Toyoda, Christian A. Bermudez, Robert L. Kormos
*University of Pittsburgh Medical Center, Pittsburgh, PA*
**Discussant:** *John Conte, Baltimore, MD

**4:15 p.m. – 4:30 p.m. (p.84)**

**12. Heart Transplantation for Adults with Congenital Heart Disease: Analysis of the United Network for Organ Sharing Database**

Nishant D. Patel, Eric S. Weiss, Stuart D. Russell, Ashish S. Shah, *Luca A. Vricella, *John V. Conte

*Johns Hopkins Medical Institutions, Baltimore, MD*

**Discussant:** *Charles Huddleston, St. Louis, MO

**4:30 p.m. – 4:45 p.m. (p.86)**

**13. Safe Transition from Thoracotomy to Thoracoscopic Lobectomy: A Five-Year Experience**

Christopher William Seder, Kenny Hanna, Victoria Lucia, Robert J. Welsh, Gary Chmielewski

*William Beaumont Hospital, Royal Oak, MI*

**Discussant:** *Traves Crabtree, St. Louis, MO

**4:45 p.m. – 5:00 p.m. (p.88)**

**14. Laser-Assisted Extraction of Pacemaker and Defibrillator Leads: The Role of the Cardiac Surgeon**

Jeffrey G. Gaca, Brian Lima, *Carmelo A. Milano, Shu S. Lin, *Duane R. Davis, Ruth Ann Greenfield, *James E. Lowe, *Peter K. Smith

*Duke University Medical Center, Durham, NC*

**Discussant:** * J. Mark Williams, Greenville, NC

## FRIDAY, NOVEMBER 7, 2008

### BASIC SCIENCE FORUM

7:00 a.m. – 7:50 a.m.
*Lost Pines 1-4*

*(Presentations are limited to five minutes, followed by five minutes of discussion)*

**Educational Objective:** To provide new and clinically important research information from well-conceived and conducted investigations in the practice of cardiothoracic surgery.

**CME Credit Available: .75**

**Moderators:** *Vinod Thourani, MD and *Michael DiMaio, MD

**7:00 a.m. – 7:10 a.m. (p.90)** **1B Atrial Cells with Regenerative Potential: Preliminary Study in a Pediatric Population**
Ann Steele, *Jeffrey Phillip Jacobs, Peter Steele, Alfred Asante-Korang, Wilfredo Chamizo, William Schleif, Jasmine Steele, Robert Joseph Boucek, Jr.
*All Children's Hospital, St. Petersburg, FL*

**7:10 a.m. – 7:20 a.m. (p.92)** **2B Alpha II-Spectrin Breakdown Products Serve as Novel Markers of Brain Injury Severity in a Canine Model of Hypothermic Circulatory Arrest**
Eric S. Weiss, Lois U. Nwakanma, Kevin K.W. Wang, Jason A. Williams, Mary S. Lange, Jennifer L. Berrong, Mary Ann Wilson, Mary E. Blue, Juan C. Troncoso, Michael V. Johnston, *William A. Baumgartner
*The Johns Hopkins University School of Medicine, Baltimore, MD*

**7:20 a.m. – 7:30 a.m. (p.94)** **3B Neutralization of Interleukin (il)-18 Ameliorates Ischemia/Reperfusion (i/r)-Induced Myocardial Injury**
*V. Seenu Reddy, *John H. Calhoon, *Clinton E. Baisden, Bysani Chandrasekar
*University of Texas Health Science Center, San Antonio, TX*

**7:30 a.m. – 7:40 a.m. (p.96)** **4B Inhibition of Neointimal Hyperplasia Following Arterial Bypass Using a Novel Bioengineered Vascular Graft**
Christopher B. Komanapalli, Noi T. Tran, Ulla Marzec, *Ross M. Ungerleider, Stephen R. Hanson, *Howard Kim Song
*Oregon Health and Sciences University, Portland, OR*

**7:40 a.m. – 7:50 a.m (p.98)** **5B Pre-Implant Treatment of the Human Radial Artery with the Rho Kinase Inhibitor Fasudil Attenuates Acute Vasoconstriction**
Christopher J. Mutrie, *Vinod H. Thourani, Shady M. Eldaif, Caleb W. Rutledge, Jiang Rong, Zhi-Qing Zhao, *Robert A. Guyton, *Omar M. Lattouf, *John D. Puskas, Jakob Vinten-Johansen
*Division of Cardiothoracic Surgery Emory University, Atlanta, GA*

## SECOND SCIENTIFIC SESSION

### FRIDAY, NOVEMBER 7, 2008

8:00 a.m. – 10:00 a.m.
*Lost Pines 1-4*

*(Presentations are limited to seven minutes, followed by two minutes of discussion from a selected discussant and an additional six minutes of discussion open to the audience)*

**Educational Objective:** To provide new or important information from recognized authorities about the current practice of cardiothoracic surgery.

**CME Credits Available: 2**

**Moderators:** *Walter Merrill, MD and *Paul Schipper, MD

**8:00 a.m. – 8:15 a.m. (p.100)** **15. Hybrid Repair of Aneurysms of the Transverse Aortic Arch: Mid-Term Results**
*G. Chad Hughes, Mani A. Daneshmand, Keki R. Balsara, Hardean A. Achneck, Bantayehu Sileshi, Sean M. Lee, Richard L. McCann
*Duke University Medical Center, Durham, NC*
**Discussant:** *Joseph Coselli, Houston, TX

**8:15 a.m. – 8:30 a.m. (p.102)** **16. Intra-Operative Hyperglycemia is Associated with a Higher Risk of Post-Operative Septicemia in the Pediatric Cardiac Surgery Population**
*James E. O'Brien, Jennifer A. Swihart, Marcy L. Tarrants, Richard E. Stroup, *Gary K. Lofland
*The Childrens Mercy Hospital and Clinics, Kansas City, MO*
**Discussant:** * William Gaynor, Philadelphia, PA

**8:30 a.m. – 8:45 a.m. (p.104)** **17. Intrapleural Bupivacaine Delivered By Chest Tubes Improves Pain Control and Decreases 24-Hour Opioid Use After Vats**
*Todd L. Demmy, Sai Yendamuri, Chumy Nwogu, Oscar DeLeon
*Roswell Park Cancer Institute, Buffalo, NY*
**Discussant:** * John Howington, Evanston, IL

**8:45 a.m. – 9:00 a.m. (p.106)**

**18. Does the Level of Experience of Residents Impact Outcomes of Coronary Artery Bypass Surgery?**

Peter I. Tsai, Danny Chu, Amandeep Dhaliwal, Biykem Bozkurt, *Scott Anthony LeMaire, *Matthew J. Wall, *Joseph S. Coselli, *Joseph Huh, Faisal G. Bakaeen

*The Michael E DeBakey VA Medical Center and Baylor College of Medicine, Houston, TX*

**Discussant:** *Curt Tribble, Gainesville, FL

**9:00 a.m. – 9:15 a.m. (p.108)**

**19. Case-Control Comparison of Five-Year Survival in Patients with Lung Cancer Undergoing Thoracoscopic and Open Lobectomy**

*John R. Roberts, Aravindhan Sriharan, Timothy D. Roberts

*Southeastern Research Associates, Nashville, TN*

**Discussant:** *Daniel Miller, Atlanta, GA

**9:15 a.m. – 9:30 a.m. (p.110)**

**20. More Lesions for Atrial Fibrillation at the Time of Surgery May Mean Fewer Treatments in Follow-Up**

*Richard Lee, Darren Danielson, Edwin McGee, Chris S. Malaisrie, Jane Kruse, Jennifer O'Leary, Haris Subacius, Anna Huskin, Patrick McCarthy

*Northwestern University, Chicago, IL*

**Discussant:** Harold Roberts, Lauderdale Lakes, FL

**9:30 a.m. – 9:45 a.m. (p.112)**

**21. Assessment of Robotic Thymectomy for Myasthenia Gravis using the Myasthenia Gravis Foundation of America Guidelines: An Underutilized Surgical Outcome Tool**

Seth Daniel Goldstein, *Stephen C. Yang

*Johns Hopkins School of Medicine, Baltimore, MD*

**Discussant:** *Stephen Cassivi, Rochester, NY

**9:45 a.m. – 10:00 a.m. (p.114)** **22. Meld Score Predicts Mortality for Tricuspid Valve Surgery**
*Gorav Ailawadi, Suzanne A. Siefert, Brian R. Swenson, *John A. Kern, *Benjamin B. Peeler, *Irving L. Kron
*University of Virginia, Charlottesville, VA*
**Discussant:** *Fred Crawford, Charleston, SC

**10:00 a.m. – 10:30 a.m.** **Break – Visit Exhibits**
*Lost Pines 5-8*

## GENERAL SESSION

**FRIDAY, NOVEMBER 7, 2008**
10:30 a.m. – 12:00 p.m.
*Lost Pines 1-4*

**Educational Objective:** To provide insights and assessments of the current status of cardiothoracic surgery from leading experts in the field.

**CME Credits Available: 1.5**

**10:30 a.m. – 11:05 a.m.** **President's Invited Lecturer:**
Paul Barringer, JD
*"Medical Liability, Health Courts and Patient Safety"*

**11:10 a.m. – 11:20 a.m.** **Kent Trinkle Education Lectureship:**
*Curt Tribble, MD
*University of Florida*

**11:20 a.m. – 12:00 p.m.** **Presidential Address:**
*****John W. Hammon, MD
*"By The Numbers"*

**12:00 p.m.** **All Attendee Lunch**
*Pecan Court*

**1:00 p.m. – 2:00 p.m.** **Dessert Served in the Exhibit Hall**
*Lost Pines 5-8*

**1:00 p.m. – 4:15 p.m.** **Exhibits Open**
*Lost Pines 5-8*

## THIRD SCIENTIFIC SESSION A

**FRIDAY, NOVEMBER 7, 2008**
2:00 p.m. – 3:30 p.m.
**Simultaneous Cardiac, General Thoracic and Congenital Breakout Sessions**

*(Presentations are limited to seven minutes, followed by two minutes of discussion from a selected discussant and an additional six minutes of discussion open to the audience)*

*Attendees select to participate in one of the following sessions:*

### CARDIAC BREAKOUT

*Lost Pines 1-4*

**Educational Objective:** To provide new or important information from recognized authorities about the current practice of adult cardiac surgery.

**CME Credits Available: 1.5**

**Moderators:** **John Ikonomidis, MD and G. Chad Hughes, MD*

**2:00 p.m. – 2:15 p.m. (p.116)**

**23. Favorable Early Outcomes for Patients with Extended Indications for Thoracic Endografting**
*Howard K. Song, Gregory J. Landry, Kenneth J. Kolbeck, Matthew S. Slater, Timothy K. Liem, Gregory Moneta, John A. Kaufman
*Oregon Health and Science University, Portland, OR*
**Discussant:** *G. Chad Hughes, Durham, NC

**2:15 p.m. – 2:30 p.m. (p.118)**

**24. Proximal Thoracic Stent Grafting Via the Open Arch During Standard Repair for Acute Debakey I Aortic Dissection Prevents Development of Dissecting Thoracoabdominal Aortic Aneurysms**
Alberto Pochettino, William T. Brinkman, Patrick Moeller, Frank W. Bowen, G. William Moser, Wilson Y. Szeto, Y. Joseph Woo, Joseph E. Bavaria
*University of Pennsylvania Health System, Philadelphia, PA*
**Discussant:** *Marc Moon, St. Louis, MO

**2:35 p.m. – 2:45 p.m. (p.120)**

**25. Midterm Results for Endovascular Repair of Complicated Acute and Chronic Type B Aortic Dissection.**
Cyrus J. Parsa, Jacob N. Schroder, Richard L. McCann, *G. Chad Hughes
*Duke University Medical Center, Durham, NC*
**Discussant:** *V. Seenu Reddy, San Antonio, TX

**2:45 p.m. – 3:00 p.m. (p.122)**

**26. Early Results of Valve-Sparing Aortic Root Replacement in High-Risk Clinical Scenarios**
Faraz Kerendi, *Robert A. Guyton, *Edward P. Chen
*Emory University School of Medicine, Atlanta, GA*
**Discussant:** *John Ikonomidis, Charleston, SC

**3:00 p.m. – 3:15 p.m. (p.124)**

**27. Targeted Renal Therapy in High-Risk Cardiac Surgery: Early Safety and Feasibility with a Novel Treatment for Renal Function Preservation During Coronary Artery Bypass Grafting**
*David E. Allie, Chris J. Hebert, Mitchell D. Lirtzman, Charles H. Wyatt, Craig M. Walker
*Cardiovascular Institute of the South, Lafayette, LA*
**Discussant:** *Michael DiMaio, Dallas, TX

**3:15 p.m. – 3:30 p.m. (p.126)**

**28. The Impact of Off-Pump Coronary Artery Bypass Surgery on Postoperative Renal Function**
Ashwin Shahir, Ly-Mee Yu, *Cliff K. Choong, M. Navaratnarajah, Yasir Abu-Omar, David P. Taggart
*John Radcliffe Hospital, The University of Oxford, Oxford, England; Papworth Hospital, The Universityof Cambridge, Cambridge, England*
**Discussant:** * John Puskas, Atlanta, GA

## GENERAL THORACIC BREAKOUT

*Baron E, F, G*

**Educational Objective:** To provide new or important information from recognized authorities about the current practice of general thoracic surgery.
**CME Credits Available: 1.5**

**Moderators:** *Carolyn Reed, MD and *Bryan Meyers, MD

**2:00 p.m. – 2:15 p.m. (p.128)**
**29. Which Type of Diffusing Capacity of the Lung for Carbon Monoxide (DLCO) Percent Predicted Value is the Best Predictor of Morbidity and Mortality After Pulmonary Resection?**
Ayesha Bryant, *Robert J. Cerfolio
*University of Alabama at Birmingham, Birmingham, AL*
**Discussant:** *Mark Ferguson, Chicago, IL

**2:15 p.m. – 2:30 p.m. (p.130)**
**30. Choice of First Intervention is Related to Outcomes in the Management of Empyema**
Curtis J. Wozniak, Douglas E. Paull, Jazbieh E. Moezzi, Rosalyn P. Scott, *Mark Peter Anstadt, Virginia V. York, Alex G. Little
*Wright State University, Dayton, OH; Veterans Administration Medical Center, Dayton, OH*
**Discussant:** * Paul Schipper, Portland, OR

**2:30 p.m. – 2:45 p.m. (p.132)**
**31. Myotomy for Megaesophagus: The Risk for Future Esophageal Resection**
Shady M. Eldaif, Christopher J. Mutrie, Caleb W. Rutledge, Edward Lin, *Seth D. Force, *Joseph I. Miller Jr., *Kamal A. Mansour, *Daniel L. Miller
*Emory University School of Medicine, Atlanta, GA*
**Discussant:** *Keith Naunheim, St. Louis, MO

**2:45 p.m. – 3:00 p.m. (p.134)**
**32. Robot-Assisted Laparoscopic Belsey Fundoplasty for Gastroesophageal Reflux Disease**
*Farid Gharagozloo, *Marc Margolis, Barbara Tempesta, Eric Strother
*Washington Institute of Thoracic and Cardiovascular Surgery and The George Washington University Medical Center, Washington, D.C.*
**Discussant:** *Seth Force, Atlanta, GA

**3:00 p.m. – 3:15 p.m. (p.136)** **33. Reoperative Sympathectomy for Severe Refractory or Recurrent Palmar Hyperhidrosis**
*Richard K. Freeman, Jaclyn M. Van Woerkom, Amy Vyverberg, *Anthony J. Ascioti
*St Vincent Hospital, Indianapolis, IN*
**Discussant:** *Mark Krasna, Towson, MD

**3:15 p.m. – 3:30 p.m. (p.138)** **34. Analysis of Cervical Esophagogastric Anastomotic Leaks after Transhiatal Esophagectomy: Risk Factors, Presentation, Detection**
David T. Cooke, Giant C. Lin, Christine L. Lau, Linda Zhang, Ming-Sing Si, Julia Lee, Andrew C. Chang, Allan Picken, Mark B. Orringer
*University of Michigan, Ann Arbor, MI*
**Discussant:** *Wayne Hofstetter, Houston, TX

## CONGENITAL BREAKOUT

*Baron A-B*

**Educational Objective:** To provide new or important information from recognized authorities about the current practice of thoracic surgery.

**CME Credits Available: 1.5**

**Moderators:** **Andrew Fiore, MD and *Michael Hines, MD*

**2:00 p.m. – 2:15 p.m. (p.140)** **35. Biventricular Repair of Complete Atrioventricular Septal Defect with Double Outlet Right Ventricle**
Eric J. Devaney, Jennifer C. Hirsch, Richard G. Ohye, *Edward L. Bove
*University of Michigan, Ann Arbor, MI*
**Discussant:** *James Quintessenza, St. Petersburg, FL

**2:15 p.m. – 2:30 p.m. (p.142)** **36. Minimally Invasive, Intrapericardial Implantable Cardioverter Defibrillator Coil Array System: A Novel Approach to Ventricular Tachyarrhythmia Therapy in Children**
*Tain-Yen Hsia, Philip Saul, John Reed, *Scott M. Bradley
*Medical University of South Carolina, Charleston, SC*
**Discussant:** *James Jaggers, Durham, NC

**2:30 p.m. – 2:45 p.m. (p.144)**

**37. Late Outcome after Multiple Reoperations Following Initial Repair of Complete Atrioventricular Septal Defect**

John Stulak, Harold Burkhart, Joseph Dearani, *Hartzell Schaff, Frank Cetta, Roxann Barnes, Francisco Puga

*Mayo Clinic College of Medicine, Rochester, MN*

**Discussant:** Carl Backer, Chicago, IL

**2:45 p.m. – 3:00 p.m. (p.146)**

**38. Current Expectations for Surgical Repair of Isolated Ventricular Septal Defects**

*Jeffrey S. Heinle, Branki E. Braud, David L. S. Morales, E. Dean McKenzie, *Charles D. Fraser, Jr.

*Texas Children's Hospital, Houston, TX*

**Discussant:** *Andrew Fiore, St. Louis, MO

**3:00 p.m. – 3:15 p.m. (p.148)**

**39. The Impact of Ventricular Anatomy on Morbidity and Mortality in the Modern Era of Staged Fontan Palliation for Single Ventricle Congenital Heart Disease**

*James S. Tweddell, Matthew Nersesian, Kathleen A. Mussatto, Nancy S. Ghanayem, Pippa Simpson, Michael Mitchell, Andrew N. Pelech, R. Marla, George M. Hoffman

*Children's Hospital of Wisconsin, Milwaukee, WI*

**Discussant:** *Robert Jaquiss, Little Rock, AR

**3:15 p.m. – 3:30 p.m. (p.150)**

**40. Minimizing Bleeding Associated With Mechanical Circulatory Support Following Open Pediatric Cardiac Surgery**

Jennifer Emmert, Robert Mazor, David Michael McMullan, Harris Baden, Howard Jeffries, Justin Linam, Andrew Morscheck, Lester Permut, Gordon A. Cohen

*Seattle Children's Hospital, Seattle, WA*

**Discussant:** *Victor Morell, Pittsburgh, PA

**3:30 p.m. – 4:00 p.m.**

**Break – Visit Exhibits**

*Lost Pines 5-8*

## THIRD SCIENTIFIC SESSION B

**FRIDAY, NOVEMBER 7, 2008**
4:00 p.m. – 5:00 p.m.
**Simultaneous Cardiac, General Thoracic and Congenital Breakout Sessions**

*(Presentations are limited to seven minutes, followed by two minutes of discussion from a selected discussant and an additional six minutes of discussion open to the audience)*

*Attendees select to participate in one of the following sessions:*

### CARDIAC BREAKOUT

*Lost Pines 1-4*

**Educational Objective:** To provide new or important information from recognized authorities about the current practice of thoracic surgery.

**CME Credits Available: 1**

**Moderators:** *John Ikonomidis, MD and G. Chad Hughes, MD

**4:00 p.m. – 4:15 p.m. (p.152)** **41. Trends in the Surgical Treatment of Mitral Valve Disease**
J. Scott Rankin, Ricardo E. Orozco, Stephen M. Teague, Thomas S. Johnston, A. Thomas McRae
*Centennial Medical Center and Vanderbilt University, Nashville, TN*
**Discussant:** *W. Randolph Chitwood, Greenville, NC

**4:15 p.m. – 4:30 p.m. (p.154)** **42. An Integrated Approach to Improve Quality Outcomes in a Cardiac Surgery Program**
*James R. Edgerton, *William H. Ryan, Susan L. Dorval, Syma L. Prince, *Michael J. Mack
*Heart Hospital Baylor Plano, Plano, TX; Cardiopulmonary Research Science and Technology Institute, Dallas, TX*
**Discussant:** *Walter Merrill, Cincinnati, OH

**4:30 p.m. – 4:45 p.m. (p.156)** **43. Minimally Invasive Approach for Complex Cardiac Surgery Procedures**
Pasquale Totaro, Simone Carlini, Matteo Pozzi, Francesco Pagani, Giuseppe Zattera, Roberto Gaeta, Andrea Maria D'Armini, Mario Viganò
*Cardiac Surgery IRCCS S Matteo University Hospital, Pavia, Italy*
**Discussant:** *Michael Mack, Dallas, TX

**4:45 p.m. – 5:00 p.m. (p.158)**

**44. Thoracic Aortic Endovascular Repair for Infectious Aortic Pathology: A Long-Term Analysis**
Himanshu J. Patel, David M. Williams, Gilbert R. Upchurch, Narasimham L. Dasika, Jonathan L. Eliason, *Richard L. Prager, Michael G. Deeb
*University of Michigan Cardiovascular Center, Ann Arbor, MI*
**Discussant:** *Thomas Beaver, Gainesville, FL

## GENERAL THORACIC BREAKOUT

*Baron E, F, G*

**Educational Objective:** To provide new or important information from recognized authorities about the current practice of thoracic surgery.

**CME Credits Available: 1**

**Moderators:** *Carolyn Reed MD, and *Bryan Meyers, MD

**4:00 p.m. – 4:15 p.m. (p.160)**

**45. Endoscopic Ultrasound Replaces Mediastinoscopy for Pre-Operative Lung Cancer Staging**
*Mark I. Block
*Memorial Healthcare System, Hollywood, FL*

**4:15 p.m. – 4:30 p.m.**

**Counterpoint to Endoscopic Ultrasound Replaces Mediastinoscopy for Pre-Operative Lung Cancer Staging**
*Robert J. Cerfolio, MD
*University of Alabama at Birmingham, Birmingham, AL*

**4:30 p.m. – (p.162)**

**46. Early Experience with Robotic-Video-Assisted Thoracoscopic Anatomical Lung Resection**
*Mark R. Dylewski
*South Miami Hospital / Baptist Health System of South Florida, South Miami, FL*

**4:45 p.m. –**

**Counterpoint to Early Experience with Robotic-Video-Assisted Thoracoscopic Anatomical Lung Resection**
*John A. Howington
*Evanston Northwestern Healthcare, Evanston, IL*

## CONGENITAL BREAKOUT

*Baron A-B*

**Educational Objective:** To provide new or important information from recognized authorities about the current practice of congenital heart surgery.

**CME Credits Available: 1**

**Moderators:** *Andrew Fiore, MD and *Michael Hines, MD

**4:00 p.m. – 4:15 p.m. (p.164)** **47. Perioperative Risks and Outcomes of Atrioventricular Valve Surgery in Conjunction with Fontan Procedure**
Faraz Kerendi, Zachary B. Kramer, William T. Mahle, *Brian E. Kogon, *Kirk R. Kanter, *Paul M. Kirshbom
*Emory University School of Medicine, Atlanta, GA; Medical College of Georgia, Augusta, GA; Children's Healthcare of Atlanta, Atlanta, GA*
**Discussant:** *John Calhoon, San Antonio, TX

**4:15 p.m. – 4:30 p.m. (p.166)** **48. Transannular Patch with a Common Wall on the Autologous Pulmonary Outflow Floor by Direct or Indirect Ventriculo-Arterial Connection: An Alternative for the Rastelli Operation**
Shu-Chien Huang, Ing-Sh Chiu, Meng-Luen Lee, Ming-Ren Chen, Shye-Jao Wu
*National Taiwan University Hospital, Taipei, Taiwan; Changhua Christian Hospital, Changhua, Taiwan; Mackay Memorial Hospital, Taiepi, Taiwan*
**Discussant:** *James Tweddell, Milwaukee, WI

**4:30 p.m. – 4:45 p.m. (p.168)** **49. Lateral Tunnel Fontan Operation in the Current Era: Is it Still a Good Option?**
John W. Brown, Mark Ruzmetov, Mark D. Rodefeld, Mark W. Turrentine
*Indiana University School of Medicine, Indianapolis, IN*
**Discussant:** *Erle Austin, Louisville, KY

**4:45 p.m. – 5:00 p.m. (p.170)** **50. Twenty-Year Review of Supravalvar Aortic Stenosis Repair for Patients with Williams-Beuren Syndrome**
Daniel J. Scott, David N. Campbell, David R. Clarke, Francois Lacour-Gayet, Max B. Mitchell, Deborah J. Kozik
*University of Colorado, Aurora, CO*
**Discussant:** *Charles Fraser, Houston, TX

**5:00 p.m. – 6:00 p.m.** **STSA Annual Business Meeting**
(Members Only) *Lost Pines 1-4*

**7:00 p.m. – 9:00 p.m.** **President's Mixer**
*LBJ Pavilion*

**SATURDAY, NOVEMBER 8, 2008**

**6:45 a.m. – 10:30 a.m.** **Exhibits Open**
*Lost Pines 5-8*

## ETHICS SESSION

*Lost Pines 1-4*

**Educational Objective:** To provide an ethical view point in the area of case selection related to factors surgeons encounter on a daily basis.

**CME Credits Available: 1**

**Moderator:** *Robert Sade, MD

**7:15 a.m. – 8:15 a.m.** **Ethical Obligation of Surgeons to Non-Compliant Patients: Can a Surgeon Refuse to Operate on a Drug-Abusing Patient with a Recurrent Aortic Prosthesis Infection?**

**Pro:** Tomas Salerno, MD
**Con:** *Michael DiMaio, MD

## CODING UPDATE

*Baron A-B*

**Educational Objective:** To help attendees understand typical and challenging issues in coding and reimbursement of cardiothoracic surgery procedures.

**CME Credits Available: 1**

**Moderator:** *Peter K. Smith, MD

**7:15 a.m. – 8:15 a.m.** **Update on CPT and Physician Payment Issues for 2009**

## FOURTH SCIENTIFIC SESSION A

**SATURDAY, NOVEMBER 8, 2008**
8:30 a.m. – 9:45 a.m.
*Lost Pines 1-4*

*(Presentations are limited to seven minutes, followed by two minutes of discussion from a selected discussant and an additional six minutes of discussion open to the audience)*

**Educational Objective:** To provide new or important information from recognized authorities about the current practice of thoracic surgery.

**CME Credits Available: 1.25**

**Moderators:** *John Hammon, MD and *Michael Mack, MD

**8:30 a.m. – 8:45 a.m. (p.172)**

**51. Long-Term Follow Up of Patients with Non- Small Cell Lung Cancer: Routine Follow Up CT Scans Identify New Lung Primaries**

*Linda W. Martin, Ziv Gamliel, Lisa M. Marroney, Lance Grove, Syamal Dey, *Mark J. Krasna

*St. Joseph Medical Center, Towson, MD*

**Discussant:** *Bryan Meyers, St. Louis, MO

**8:45 a.m. – 9:00 a.m. (p.174)**

**52. Is Limited Stent Grafting a Viable Treatment Option in Type B Aortic Dissections?**

Suzanne A. Siefert, *Gorav Ailawadi, Richard B. Thompson, Hongkun Wang, *Benjamin B. Peeler, *Irving L. Kron, Kenneth J. Cherry, Nancy L. Harthun, Michael D. Dake, John Fr. Angle, Alan H. Matsumoto, *John A. Kern

*University of Virginia, Charlottesville, VA*

**Discussant:** Joseph Bavaria, Philadelphia, PA

**9:00 a.m. – 9:15 a.m. (p.176)**

**53. Contemporary Outcomes of Surgery for Infective Mitral Valve Endocarditis**

Eric K. Shang, Graeme N. Forrest, Timothy Chizmar, Jimmy Chim, James M. Brown, *Bartley P. Griffith, *James S. Gammie

*University of Maryland Medical Center, Baltimore, MD*

**Discussant:** *Richard Prager, Ann Arbor, MI

**9:15 a.m. – 9:30 a.m. (p.178)**

**54. Oncologic Utility of Anatomic Segmentectomy for Stage I Non-Small Cell Lung Cancer in the Elderly**

Arman Kilic, Matthew J. Schuchert, Brian L. Pettiford, *Arjun Pennathur, James R. Landreneau, Joshua P. Landreneau, James D. Luketich, *Rodney J. Landreneau

*University of Pittsburgh Medical Center, Pittsburgh, PA*

**Discussant:** *Christine Lau, Charlottesville, VA

**9:30 a.m. – 9:45 a.m. (p.180)** **55. Surgical Treatment of Mitral Regurgitation in North America 2000-2006: Increased Adoption of Mitral Valve Repair**
*James S. Gammie, Joshua D. Grab, *Bartley P. Griffith, Eric D. Peterson, J. Scott Rankin, Sean M. O'Brien, James M. Brown
*University of Maryland Medical Center, Baltimore, MD; Duke Clinical Research Institute, Durham, NC*
**Discussant:** *Michael Petracek, Nashville, TN

**9:45 a.m. – 10:15 a.m.** **Break – Visit Exhibits**
*Lost Pines 5-8*

## FOURTH SCIENTIFIC SESSION B

**SATURDAY, NOVEMBER 8, 2008**
10:15 a.m. – 11:30 a.m.
*Lost Pines 1-4*

*(Presentations are limited to seven minutes, followed by two minutes of discussion from a selected discussant and an additional six minutes of discussion open to the audience)*

**Educational Objective:** To provide new or important information from recognized authorities about the current practice of cardiothoracic surgery.

**CME Credits Available: 1.25**

**Moderators**: :*John Hammon, MD and *Michael Mack, MD

**10:15 a.m. – 10:30 a.m. (p.182)** **56. Thoracic Duct Ligation for Persistent Chylothorax Following Pediatric Cardiothoracic Surgery**
Dilip S. Nath, Jainy Savla, Robinder Khemani, Christina L. Greene, Brian L. Reemtsen, Winfield J. Wells
*Children's Hospital Los Angeles, Los Angeles, CA*
**Discussant:** *Vincent Tam, Fort Worth, TX

**10:30 a.m. – 10:45 a.m. (p.184)** **57. Open Lobectomy Simulator is an Effective Tool for Teaching Thoracic Surgical Skills**
Yvonne M. Carter, *M. Blair Marshall
*Georgetown University Medical Center, Washington, DC*
**Discussant:** *Richard Feins, Chapel Hill, NC

**10:45 a.m. – 11:00 a.m. (p.186)** **58. Indexed Left Ventricular Dimensions Best Predict Survival After Aortic Valve Replacement In Patients With Aortic Valve Regurgitation**
Morgan L. Brown, *Hartzell V. Schaff, Rakesh M. Suri, *Thoralf M. Sundt, Joseph A. Dearani, Richard C. Daly, Thomas A. Orszulak
*Mayo Clinic, Rochester, MN*
**Discussant:** *Kevin Accola, Orlando, FL

**11:00 a.m. – 11:15 a.m. (p.188)** **59. Direct Monitoring of Spinal Cord Collateral Perfusion Pressure in Descending Thoracic and Thoracoabdominal Aneurysm Repair Involving Extensive Segmental Artery Sacrifice**
Christian D. Etz, Konstadinos A. Plestis, Ricardo Lazala, Gabriele DiLuozzo, Randall B. Griepp
*Mount Sinai School of Medicine, New York, NY*
**Discussant:** *John Kern, Charlottesville, VA

**11:15 a.m. – 11:30 a.m. (p.190)** **60. Warm Beating Heart Surgery on the Mitral Valve Via Right Thoracotomy is an Excellent and Safe Alternative for Reoperative Mitral Surgery**
Matthew A. Romano, Francis D. Pagani, *Steven F. Bolling
*University of Michigan, Ann Arbor, MI*
**Discussant:** *Michael Petracek, Nashville, TN

## PROGRAM ADJOURNS

**1:00 p.m.** **Tennis, Golf and Group Social Activities**
(See page 17 for details)

**7:00 p.m. – 11:00 p.m.** **Texas Tuxedo Dinner Dance**
*Lost Pines 1-4*

## SCIENTIFIC PAPERS

**Educational Objective:** To provide new or important information from recognized authorities about the current practice of cardiothoracic surgery.

## Wednesday - Surgical Motion Pictures

### 1V. Ross Reversal: Returning the Pulmonary Autograft to its Native Position

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**Authors:** *Kristopher M George[1], Michael J Flynn[1], Gösta B Pettersson[1]

**Author Institution:** *[1]Cleveland Clinic, Cleveland, Ohio, United States*

**Objectives:** The Ross procedure, pulmonary autograft transplantation to the aortic position, has occasionally failed due to autograft dilation under systemic pressure. This results in pulmonary autograft insufficiency despite otherwise normal cusps, leaving the patient with a failed pulmonary autograft and a pulmonary homograft with a limited lifespan.

**Methods:** Our video demonstrates the removal of a pulmonary autograft from a 40 year-old woman with 4+ insufficiency from the aortic position, its repair, and reimplantation into the pulmonary position. A mechanical valved conduit is then placed in the aortic position.

**Results:** The pulmonary autograft, once back in the pulmonary position, is competent and functioning well.

**Conclusions:** A pulmonary autograft in the aortic position that fails due to dilation related to systemic pressure can be safely removed, repaired, and placed back in the pulmonary position. Ross reversal with placement of a mechanical valved conduit in the aortic position is an option for those hoping to avoid future operations.

**NOTES**

## 2V. Aortic Valve Bypass Surgery - Beating Heart Therapy for Aortic Stenosis

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**Authors:** D *James S. Gammie[1], Mary J. Santos[1], Ethan Hagan[1]

**Author Institution:** *[1]University of Maryland Medical Center, Baltimore, MD, United States*

**Objectives:** As an alternative to conventional AVR for high-risk and "inoperable" patients, we have refocused efforts on an uncommonly used procedure for relief of aortic stenosis (AS): Aortic Valve Bypass (AVB) surgery. An Aortic Valve Bypass (apicoaortic conduit) contains a prosthetic valve that relieves AS by shunting blood from the apex of the left ventricle to the descending thoracic aorta.

**Methods:** This surgical video illustrates the key technical elements of an Aortic Valve Bypass procedure performed on an 83 year-old male with critical symptomatic aortic stenosis. The patient had previous CABG 18 years prior to presentation with patent grafts including an internal mammary artery that was adherent to the posterior sternal table. The mean aortic transvalvular gradient was 60 mmHg. The ejection fraction was 30 %. We illustrate construction of the conduit, anastomosis to the descending aorta, and insertion of the apical connector in the beating working heart.

**Results:** The patient was discharged from the hospital on the sixth postoperative day. Postoperative echocardiography demonstrated a mean gradient across the native stenotic valve of 10 mmHg. The patient is asymptomatic at late follow-up.

**Conclusions:** AVB surgery is an important therapeutic option for high-risk patients with symptomatic AS. AVB surgery uses established bioprosthetic valves, has greater than 30 years of clinical experience, and can treat AS without cardiopulmonary bypass, cardiac arrest, aortic cross-clamping, or sternotomy.

**Financial Disclosure:** James Gammie – Correx, Inc.: Stockholder; Medtronic, Inc.: Consultant (heart valves)

**NOTES**

## 3V. Thoracoscopic Repair of Circumflex Right Aortic Arch

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**Authors:** *Bassem N Mora[1]

**Author Institution:** [1]*University of Chicago, Chicago, IL, United States*

**Objectives:** Circumflex right aortic arch is a very rare vascular ring where the aortic arch is right-sided but the descending thoracic aorta is left-sided, creating the appearance of a circumflex. A left-sided ligamentum arteriosum arises from a diverticulum of Kommerell off of the descending thoracic aorta and attaches to the main pulmonary artery, creating extrinsic tracheo-esophageal compression, resulting in airway and esophageal symptoms.

**Methods:** Previous reports of repair of this lesion have employed a left thoracotomy. We hereby present a novel technique of thoracoscopic repair of this rare anomaly.

**Results:** Four 5 mm thoracoscopic ports are placed in the left chest: one camera port, one lung retractor port, and two working ports (anterior and posterior). Gentle CO2 insufflation markedly aides in exposure and lung retraction. The left subclavian artery is identified and the pleura is dissected. The diverticulum of Kommerell is identified at the origin of the left subclavian artery. The ligamentum arteriosum is dissected off the diverticulum heading medially. The ligamentum is then doubly clipped and divided. Additional fibers overlying the esophagus are dissected free. The lung is reexpanded and the pleural space is deaired, without the need for a chest tube postoperatively. Patients are typically extubated in the operating room and get discharged home on postoperative day #1.

**Conclusions:** Thoracoscopic repair of circumflex right aortic arch is both feasible and effective, and should be considered the standard approach to the repair of such lesions, obviating the need for a thoracotomy with its attendant morbidity.

**NOTES**

## 4V. Carinal Resection Via a Median Sternotomy

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**Authors:** *Christine L. Lau[1], Ryan C. Fields[2], *G. Alexander Patterson[2]

**Author Institution:** *[1]University of Virginia, Charlottesville, Virginia, United States; [2]Washington University in St Louis, St. Louis, Missouri, United States*

**Objectives:** Tracheal tumors are uncommon neoplasms that can be benign or malignant. The most common tumors are adenoid cystic carcinomas and squamous cell cancers. Other primary neoplasms involving the trachea include a diverse array of tumors. We show here an obstructing lesion straddling the main carina that was completely resected.

**Methods:** An obstructing lesion located in the distal trachea and main carina was detected by symptoms, CXR, CT scan with three dimensional reformats, and visual inspection at the time of resection by rigid bronchoscopy. The patient was moderately symptomatic, and had been consented for carinal resection. We approached the lesion via a median sternotomy with plans to perform the carinal resection without the use of cardiopulmonary bypass.

**Results:** The patient underwent carinal resection and primary anastomosis. The medial wall of the right and left mainstem bronchi were anastomosed to recreate the carina using 3.0 vicryl sutures. Ventilation was maintained by cross-field ventilation. The back wall was composed of a running 4.0 PDS suture, and the front wall was reapproximated with interrupted 3.0 vicryl sutures. A single 4.0 PDS figure of eight suture was used in the middle of the front wall. There was no tension on the anastomosis at the conclusion. The patient was effectively ventilated throughout.

**Conclusions:** Surgical resection of carinal tumors can be safely accomplished via median sternotomy. Resection effectively alleviates airway obstruction. The transsternal approach provides excellent exposure and should be considered for carinal tumors.

**NOTES**

## 5V. Autotransplant for Left Atrial Tumor

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**Authors:** Shanda H. Blackmon[1], Michael J. Reardon[1]

**Author Institution:** [1]*The Methodist Hospital, Houston, Texas, United States*

**Objectives:** This video will demonstrate the feasibility of cardiac explantation, ex vivo resection of a recurrent left atrial tumor, mitral valve replacement, with reconstruction, and reimplantation (autotransplantation).

**Methods:** A 46 year old female presented with a cough and weakness in 2004, and was diagnosed with a left atrial mass. After two previous resections, she presented to a tertiary hospital for a third time resection. During her first surgery, she underwent replacement of her mitral valve but developed a post-operative pulmonary embolism. In spite of a vena caval filter and coumadin therapy, she developed obstruction of the right pulmonary vein due to tumor recurrence. She presented this time with mild weakness, shortness of breath, and chest pain. Tumor recurrence in the left atrium was noted on imaging studies (MRI with gadolinium and CT scan).

Cardiopulmonary bypass was established by cannulating the distal ascending aortic arch and bicaval venous cannulation was employed. Antegrade cardioplegia and transthoracic aortic crossclamp techniques were utilized. The aorta, pulmonary artery, superior vena cava, inferior vena cava, and left atrium were divided for explant of the heart. A portion of the pulmonary vein was resected along with the superior vena cava. The mechanical mitral valve was resected on the back table along with re-implantation with a 27mm porcine valve and reconstruction of the left atrium with bovine pericardium. The heart was re-implanted, warmed, and weaned from cardiopulmonary bypass.

**Results:** Total cardiopulmonary bypass time was 255 minutes and cross-clamp time was 139 minutes. The patient was discharged to home on post operative day 32, and is now alive four months after surgery.

**Conclusions:** Cardiac autotransplantation allows complete resection and accurate reconstruction in complex left heart tumors. Recurrent local disease can be safely resected as an additional procedure if necessary.

**NOTES**

## 6V. Laparoscopic Repair of a Morgagni Hernia in an Adult

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**Authors:** Michael J Weyant[1]

**Author Institution:** [1]*University of Colorado Health Sciences Center, Aurora, Colorado, United States*

**Objectives:** Morgagni hernias are rare congenital defects in the diaphragm. They comprise only 3% of all diaphragmatic hernias. The most common presenting symptoms are respiratory in nature. The most common surgical approaches include open thoracotomy or laparotomy. I present here a case of a 26 year-old male who presented with shortness of breath and chest pain. Imaging studies demonstrated a large mass in the right hemithorax. Computed tomography showed this mass to have density consistent with fat and characteristics of a Morgagni hernia.

**Methods:** A laparoscopic approach was used consisting of three 10mm ports in the mid abdomen. Laparoscopic abdominal exploration proved the diagnosis of a Morgagni hernia. The contents of the hernia were reduced and the hernia sac was excised. A polypropylene mesh was used to close the defect.

**Results:** Postoperative imaging showed successful resolution of the mass in the right hemithorax. The patient recovered well and was discharged on postoperative day one.

**Conclusions:** The laparoscopic approach can be used successfully to diagnose and treat Morgagni hernias.

**NOTES**

## 7V. Combined Open Proximal and Stent-Graft Distal Repair of a Complex Aortic Arch Aneurysm

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**Authors:** D Andreas Zierer[1], D Mirko Doss[1]

**Author Institution:** *[1]Division of Cardiothoracic Surgery Hospital of the Johann Wolfgang Goethe University, Frankfurt/Main, Germany*

**Objectives:** A 81 year-old man underwent coronary artery bypass grafting in 2004 for a three vessel disease and now presented with a severe symptomatic calcified aortic valve stenosis. Preoperative comorbidities included reduced left ventricular function (EF 45%), a porcelain aorta, diabetes, atrial fibrillation, arterial hypertension, thyroid disease and renal failure. The logistic EuroSCORE predicted risk for mortality was 45 %. Preoperative echocardiography revealed an aortic valve orifice area of 0.6 $cm^2$ and a mean gradient of 60 mmHg with an aortic annulus diameter of 23.5 mm.

**Methods:** Off-pump transapical aortic valve implantation was performed using a 26mm pericardial valve (Cribier-Edwards, Edwards Lifesciences, Irvine, CA, USA) mounted on a stainless steel stent. A limited anterolateral incision, in the fifth intercostals space, was used to access the apex of the heart. The valve was crimped and placed into a 24 French sheath, and introduced into the left ventricle through purse string sutures. Fluoroscopy and transesophageal echocardiography were used to guide the catheter across the native valve and direct deployment of the stent at the level of the annulus. During deployment, the heart was unloaded with rapid ventricular pacing.

**Results:** The valve was successfully deployed at the aortic annulus without difficulties. The mean aortic gradient decreased to 6 mmHg with an aortic valve orifice area of 1.3 $cm^2$. Completion angiography revealed the absence of a relevant paravalvular leakage and patent coronary ostia. The patient was extubated 5 hours after surgery, had an uneventful hospital course, and was discharged on postoperative day 6.

**Conclusions:** This was the 29th patient in whom the transapical approach for antegrade placement of a catheter deliverable aortic valve was successfully performed at our institution. Initial results are encouraging including the absence of permanent neurological deficits. The transapical approach provides an attractive alternative to percutaneous aortic valve implantation.

**Financial Disclosure:** Mirko Doss – Consultant to Edwards Lifesciences

**Regulatory Disclosure:** Content describes the use of Edwards Lifesciences catheter deliverable aortic valve, which is not FDA approved

D Relationship Disclosure

**NOTES**

## 8V. Thoracoscopic (VATS) Enucleation of a Proximal Esophageal Leiomyoma

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**Authors:** Virginia R Litle[1], Scott J Swanson[1], Todd S Weiser[1], Jaime Yun[1]

**Author Institution:** *[1]Mount Sinai Medical Center, New York, NY, United States*

**Objectives:** Esophageal leiomyomas are the most common benign tumors of the esophagus typically occurring in the lower esophagus. Indications for resection of these lesions include symptoms, size greater than 5 cm or rapid growth.

**Methods:** We present a case of a young woman presenting with a nonproductive cough and an episode of solid food dysphagia. Her past surgical history included an endometrial myomectomy. Her exam was unremarkable. The trachea was deviated on chest x-ray. A CT scan of chest showed a 5.2 cm esophageal mass. The barium swallow three months later showed a 6 cm mass in the upper esophagus from T2-T5, without evidence of obstruction. An endoscopic ultrasound identified a submucosal lesion from 18-22 cm from the incisors.
This video shows the right thoracoscopic (VATS) enucleation of an 8.5 cm proximal esophageal leiomyoma. Pathology confirmed the benign diagnosis. Intra-operative endoscopy and a postoperative barium swallow showed no evidence of esophageal mucosal injury.

**Results:** The patient was discharged home on postoperative day 2 on a clear liquid diet. At 2-month follow-up she denied dysphagia or cough.

**Conclusions:** Minimally invasive VATS enucleation of a proximal esophageal leiomyoma is a safe approach to treat this unusual benign esophageal tumor.

**NOTES**

## Thursday - First Scientific Session A

### 1. The Influence of Surgeon Specialty on Outcomes in General Thoracic Surgery: A National Sample 1996 - 2005

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**Authors:** *Paul Schipper[1], Brian Diggs[1] , *Ross M. Ungerleider[1], Karl Welke[1]

**Author Institution:** *[1]Oregon Heatlh and Sciences University, Portland, OR, United States*

**Discussant:** *Carolyn Reed, Charleston, SC

**Objectives:** While general thoracic surgical procedures are performed by several different surgical subspecialties, debate remains as to whether surgeon specialty impacts outcomes.

**Methods:** Methods: The Nationwide Inpatient Sample, a database containing all discharges from over 1,000 hospitals chosen as a representative sample of all hospital discharges in the United States, was queried for ICD9-CM procedure codes: Pneumonectomy, Lobectomy, Limited Lung Resection, Decortication, and Mediastinoscopy. We constructed a multivariate logistic regression model to calculate a patient's odds of hospital mortality or Length of Stay (LOS)>14 days (A marker of Morbidity). The model adjusted for age, sex, patient comorbidities, hospital setting, and surgeon specialty. A surgeon was considered General Thoracic if they performed >75% general thoracic operations, Cardiac if <75% general thoracic operations but >10% cardiac operations, and General Surgeon if <75% general thoracic and <10% cardiac operations.

**Results:** From 1996 to 2005, of 70 million hospital discharges 5,370 were pneumonectomies, 41,885 were lobectomies, 9,333 were limited lung resections, 19,273 were decortications, and 19,817 were mediastinoscopies.
For all procedures studied, General Thoracic Surgeons had statistically significant decreases in Odds of Death and LOS>14 days compared to General Surgeons. Cardiac Surgeons had statistically significant decreases in LOS>14 days for all operations and decreases in Odds of Death for all operations except Pneumonectomy and Mediastinoscopy compared to General Surgeons. (Table)

**Conclusions:** The majority of general thoracic surgical operations in the United States are performed by surgeons not specializing in thoracic surgery. Both General Thoracic Surgeons and Cardiac Surgeons achieve better outcomes than General Surgeons. The lowest rates of mortality and morbidity (LOS>14 Days) were achieved by surgeons whose practice was more than 75% dedicated to general thoracic surgery.

Ⓓ Relationship Disclosure

| | | General Thoracic Surgeon | p-value | Cardiac Surgeon | p-value | General Surgeon |
|---|---|---|---|---|---|---|
| **Pneumonectomy** | N (%) | 423(7.9%) | | 2191(40.8%) | | 2756(51.3%) |
| | Raw Mortality | 6.4% | | 10.1% | | 11.5% |
| | LOS > 14 Days | 11.7% | | 15.4% | | 18.7% |
| | Odds of Death | 0.62 | 0.025 | 0.92 | 0.41 | 1.00 |
| | Odds of LOS > 14 Days | 0.59 | 0.005 | 0.83 | 0.04 | 1.00 |
| **Lobectomy** | N (%) | 3390(8.1%) | | 16207(38.7%) | | 22288(53.2%) |
| | Raw Mortality | 2.4% | | 3.0% | | 4.1% |
| | LOS > 14 Days | 9.2% | | 14.0% | | 15.6% |
| | Odds of Death | 0.66 | 0.0004 | 0.76 | <0.0001 | 1.00 |
| | Odds of LOS > 14 Days | 0.64 | <0.0001 | 0.92 | 0.032 | 1.00 |
| **Limited Resection Lung** | N (%) | 929(10%) | | 2567(27.5%) | | 5837(62.5%) |
| | Raw Mortality | 2.3% | | 3.2% | | 4.6% |
| | LOS > 14 Days | 10.5% | | 15.0% | | 18.4% |
| | Odds of Death | 0.49 | 0.0023 | 0.71 | 0.014 | 1.00 |
| | Odds of LOS > 14 Days | 0.58 | 0.0001 | 0.82 | 0.006 | 1.00 |
| **Decortication** | N (%) | 895(4.6%) | | 6978(36.2%) | | 11400(59.2%) |
| | Raw Mortality | 4.5% | | 6.4% | | 7.0% |
| | LOS > 14 Days | 35.8% | | 42.4% | | 50.5% |
| | Odds of Death | 0.64 | 0.010 | 0.88 | 0.0410 | 1.00 |
| | Odds of LOS > 14 Days | 0.54 | <0.0001 | 0.72 | <0.0001 | 1.00 |
| **Mediastinoscopy** | N (%) | 1578(8.0%) | | 7178(36.2%) | | 11061(55.8%) |
| | Raw Mortality | 2.0% | | 3.1% | | 3.7% |
| | LOS > 14 Days | 8.6% | | 12.7% | | 17.5% |
| | Odds of Death | 0.63 | 0.033 | 0.91 | 0.26 | 1.00 |
| | Odds of LOS > 14 Days | 0.51 | <0.0001 | 0.73 | <0.0001 | 1.00 |

**NOTES**

## 2. Transapical Aortic Valve Implantation: From On-Pump to Off-Pump

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**Authors:** D Andreas Zierer[1], D Volker Schächinger[2], D Stephan Fichtlscherer[2], D Thomas Trepes[2], D Sven Martens[1], D Anton Moritz[1], D Mirko Doss[1]

**Author Institution:** *[1]Division of Cardiothoracic Surgery Hospital of the Johann Wolfgang Goethe University, Frankfurt, Germany; [2]Division of Cardiology Hospital of the Johann Wolfgang Goethe University, Frankfurt, Germany*

**Discussant:** * Vinod H. Thourani, Atlanta, GA

**Objectives:** In this study we compared our institutional results from high-risk patients who underwent transapical aortic valve implantation (TAP-AVI) during cardiopulmonary bypass (group A,n=11) to those who had rapid ventricular pacing during valve deployment (group B,n=19) and report our management strategies, to allow for safe off-pump procedures.

**Methods:** Between 2005 and 2008, 30 patients (84.3±6.5 years, logistic EuroSCORE predicted risk for mortality 36.5±5.8 %) underwent TAP-AVI with the Sapien Edwards catheter based prosthesis. In the first 18 patients, femoro-femoral cannulation was performed. Of these, 11 patients were actually taken on pump (group A) during the procedure. The most recent 12 patients only had a 6F sheath in the femoral artery and a guide wire in the femoral vein for safety reasons.

**Results:** All valves were successfully deployed at the target with good hemodynamic function. Within group A, patients were taken on-pump for the following reasons: prophylacticly to unload the heart n=5, due to severe hypotension after rapid ventricular pacing early in the series n=3, for conversion to conventional aortic valve replacement (right ventricular failure, migration) n=2, due to obstruction of the left main stem causing ventricular fibrillation n=1. There were 3 severe complications associated with femoral cannulation (right ventricular perforation by guide wire in group A, Leriche syndrome, and leg ischemia in group B). In group B severe hypotension and subsequent subendocardial ischemia was reliably avoided by raising systolic blood pressure to 120-140mmHg with low dose norepinephrine before rapid pacing and valve deployment. None of the 12 patients without femero-femoral cannulation required secondary conversion to an on-pump case. Thirty day mortality was 18% (n=2) in group A and 11% (n=2) in group B with no stroke in either group.

**Conclusions:** Off-pump TAP-AVI can be performed safely and reproducibly. Pre-requisits are a sensitive pre-valve deployment hemodynamic management and good interdisciplinary cooperation within a well-rehearsed team.

D Relationship Disclosure

* STSA Member

**Regulatory Disclosure:** Content describes the use of Edwards Lifesciences catheter deliveralbe aortic valve, which is not FDA approved



**NOTES**

## 3. A Modification to the Ross Procedure that May Eliminate Autograft Dilatation

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**Authors:** *Ross M Ungerleider[1], Joylyn Headings[1], Mary S Minette[1], *Karl F Welke[1], Stephen Langley[1]

**Author Institution:** *[1]Oregon Health and Science University, Portland, Oregon, United States*

**Discussant:** *Duke Cameron, Baltimore, MD

**Objectives:** The use of the Ross Procedure (RP) has been declining for adult pts. One reason for this has been the concern about potential autograft dilatation (AD) following RP.

**Methods:** Beginning in October 2004, we began performing RP in adult (> 18 y/o) patients (n = 17) using a modified technique (MRP) in which the autograft was completely encased in a Dacron graft (28-32 mm) prior to implantation. Autografts were evaluated with serial echocardiograms for the presence of AD (which we felt was occurring when the aortic root diameter exceeded 4.0 cm. We considered AD to be an important abnormality following RP, regarless of whether patients had received surgical reintervention). We compared the MRP patients to a cohort of similar adult patients who received a conventional RP between 1/01 - 10/04 (n = 19). Mean follow up for RP patients (4.8 years) was longer than for MRP patients (2.1 years).

**Results:** 100% of AD following RP (root diameter > 4.0 cm) was found to occur within 2 years of surgery. AD was found in 8 patients (42%) with RP. AD was present in none (0%) of the 17 patients with MRP. Average autograft diameter in the RP group was 40.3 + 7.6 mm; range 25-56 mm. Average autograft diameter in the MRP group was 32.2 mm + 3.5 mm; range 26.6-37 mm.

**Conclusions:** AD, when it occurs, is usually present early after RP and may progress to requiring reintervention. MRP is a new and potentially novel technique that 1) is reproducible and easily taught, 2) provides short-term outcomes (with respect to aortic valve function) that are equivalent to the conventional RP and 3) appears to limit autograft dilatation. These results are extremely encouraging and may lead to restored enthusiasm for the RP in adult patients who require aortic valve replacement.

**NOTES**

## 4. Peri-Aortic Dacron Sleeve Repair of the Aortic Root for Aortic Insufficiency Associated with Ascending Aneurysm is Durable: Two Year Followup of the Florida Sleeve Repair

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**Authors:** *Philip J. Hess, Jr.[1], *Charles T. Klodell[1], *Thomas M. Beaver[1], Marco T. Bologna[1], Peter Mikhail[1], P. Kent Harman[1], *Curtis G. Tribble[1], *Tomas D. Martin[1]

**Author Institution:** *[1]University of Florida, Gainesville, Florida, United States*

**Discussant:** *Neal D. Kon, Winston-Salem, NC

**Objectives:** Modern valve-sparing reconstructive techniques for aortic insufficiency (AI) associated with ascending aortic aneurysms (AA) are durable, but technically complex. The Florida Sleeve (FS) is a simpler technique which accomplishes valve preservation without the need for coronary transfer or sinus resection. Presented are echocardiography (EC) measurements for two years after repair.

**Methods:** All patients undergoing the FS procedure for AI associated with AA, for whom preoperative and at least two years postoperative EC examinations were available, were included in the study. Data points were preoperative, then one and two years postoperative. Echocardiography measurements analyzed were left ventricular end-systolic diameter (LVESD), left ventricular end-diastolic diameter (LVEDD), aortic root diameter, degree of AI, and left ventricular ejection fraction (LVEF).

**Results:** Follow-up for at least two years after repair was available for 18 patients. Preoperative mean LVESD of 35.2 mm decreased to 31.4 at one year ($p<0.01$) and 30.9 at two years ($p<0.01$). Preoperative mean LVEDD of 51.4 mm decreased to 48.1 at one year ($p<0.01$) and 47.0 at two years ($p<0.01$). Preoperative mean aortic root diameter of 47.4 mm decreased to 36.7 at one year ($p<0.001$), and 35.9 at two years ($p<0.001$). Preoperative mean aortic insufficiency (0-4 scale) of 2.56 decreased to 1.39 at one year ($p<0.001$) and 1.72 at two years ($p<0.001$). Mean LVEF was 56.8% preoperative, 58.7 at one year (NS) and 59.5 at two years (NS).

**Conclusions:** The aortic root is dimensionally stable two years after the Florida Sleeve procedure. The sustained reduction of LV dimensions and AI suggests a durable valve repair.

🄳 Relationship Disclosure

* STSA Member

**NOTES**

## 5. Utility of Removable Esophageal Self-Expanding Covered Metal Stents for Leak and Fistula Management

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**Authors:** D Shanda H. Blackmon[1], D Brian J. Dunkin[1]

**Author Institution:** *[1]The Methodist Hospital, Houston, Texas, United States*

**Discussant:** D *Richard K. Freeman, Indianapolis, IN

**Objectives:** Esophageal or esophagogastric leak from anastomostic wound dehiscence, perforation, staple line dehiscence, or trauma can be a devastating event. Traditional therapy has most often consisted of either surgical repair for rapidly diagnosed leaks and diversion for more complicated cases commonly associated with a delayed diagnosis. This study summarizes our experiences treating leaks or fistulae with a novel, externally covered, self-expanding metal stent.

**Methods:** Over a 2 year period of time, 14 patients with esophageal or esophagogastric leaks were evaluated for endoluminal stenting as primary treatment for their disease. A prospective database was used to collect data. Stents were placed endoscopically using fluoroscopy as a guide. Leak occlusion was evaluated using esophagram. Stents were removed after 30 days of treatment and the esophagus was re-evaluated for leak. Patients who did not improve clinically after stenting or whose leak could not be sealed underwent traditional operative treatment.

**Results:** Twelve of the 14 patients evaluated for stenting actually had stents placed. Five patients had leaks associated with previous gastric bypass; one with a fistula to the right chest with empyema and another with a fistula to the left chest with empyema. The remaining gastric bypass patients had leakage communicating with the abdomen only. Stenting was successful in healing complicated esophageal or esophagogastric leakage in eight patients; five of whom were the gastric bypass patients. One patient successfully healed two of three separate perforations over a 30 day period with partial healing of the third lesion. Two of the three patients with tracheo-esophageal fistulae sealed with the assistance of a new pexy technique to prevent stent migration when placed adjacent to the upper esophageal sphincter.

**Conclusions:** The potential benefits of esophageal stenting in complicated esophageal fistulae are healing without diversion or reconstruction and early return to an oral diet.

**Financial Disclosure:** Richard Freeman – Will discuss FDA approved Polyflex stent off-label use for esophageal restoration and fistula

**Regulatory Disclosure:** Content describes the off-label use of an esophageal stent

D Relationship Disclosure

**NOTES**

## 6. Surgical Correction Of Atrial Fibrillation With The Cryomaze Procedure: long-term Outcomes Assessed With Continuous Outpatient Telemetry

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**Authors:** Ⓓ *James S. Gammie[1], Cindi A. Young[1], Parijat Didolkar[1], Leandra S. Krowsoski[1], *Bartley P. Griffith[1], Stephen R. Shorofsky[1], Mary J. Santos[1], Ann J. Toran[2], Thomas J. Vander Salm[2]

**Author Institution:** *[1]University of Maryland Medical Center, Baltimore, MD, United States; [2]North Shore Medical Center, Salem, MA, United States*

**Discussant:** Mark A. Groh, Asheville, NC

**Objectives:** We use cryoenergy to perform the Cox-Maze III lesion set (the CryoMaze procedure) on all patients undergoing cardiac surgery with AF. This study reports long-term outcomes assessed with continuous outpatient telemetry.

**Methods:** From 2002 to 2005 89 patients underwent CryoMaze surgery. Mitral valve surgery was performed in 71 percent. AF was continuous in 65 percent. Follow up was 97 percent complete; median duration of follow-up was 3 years (range 1.2-5.2). Continuous outpatient telemetry (mean duration 10 days) was performed in 76 percent of patients; 24 percent refused and had only ECGs available for review.

**Results:** There were two hospital deaths (2.3 %). Five-year survival was 77 percent. One patient had a perioperative stroke, which resolved completely. Another suffered a stroke one year after surgery related to thrombus on a mechanical mitral valve. Twelve percent (8/68) of patients are currently taking antiarrhythmic medications and 53 % (36/68) are on warfarin. Rhythm was sinus (NSR) in 54.4% (37/68), AF/flutter in 32 % (22/68) and paced in 13 % (9/68). Excluding five patient with preoperative pacemakers, the rate of NSR was 57 % (36/63). Only 3 of 45 patients (6.7 %) assessed with continuous outpatient telemetry had paroxysmal AF (mean AF burden = 0.33). Independent predictors of NSR included intermittent AF ($p < 0.0006$) and smaller left atrial size ($p<0.02$).

**Conclusions:** AF correction surgery with the CryoMaze procedure is safe and is associated with a low late risk of stroke. Successful restoration of NSR was observed in almost sixty percent of patients three years after surgery.

**Financial Disclosure:** James Gammie – Consultant to ATS, Inc.

**NOTES**

## 7. Performance of Synergraft Decellularized Pulmonary Allografts Compared to Standard Cyropreserved Allografts

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**Authors:** Takeshi Konuma[1], *Edward L. Bove[1], Eric J. Devaney[1], Zarry Tavakkol[1], Sarah Gelehrter[1], Jennifer C. Hirsch[1], Richard G. Ohye[1]

**Author Institution:** [1]*University of Michigan, Ann Arbor, MI, United States*

**Discussant:** *Joseph M. Forbess, Dallas, TX

**Objectives:** There is no ideal option for pulmonary valve replacement in children. Cryopreserved pulmonary allografts frequently demonstrate early valve regurgitation and may elicit an immune response. To improve these shortcomings, the SynerGraft process (CryoLife, Kennesaw, GA) decellularizes an allograft, leaving only connective tissue, which then becomes repopulated with host cells. A previous study at our institution demonstrated superior short-term durability of the SynerGraft-processed CryoValve SG compared to standard allografts. Longer-term impact of the technology remains unknown.

**Methods:** A single institution review was performed of all CryoValve SGs implanted between 2001 and 2004, when they were withdrawn from the market for regulatory reasons. Forty-one CryoValve SG patients and 41 age and diagnosis-matched standard allograft controls were evaluated. Demographics, survival, reintervention, and echocardiographic findings were analyzed.

**Results:** There were no significant differences between groups in demographics, valve diameter, orthotopic/heterotopic allograft position, or follow-up. For the entire cohort, there was no difference in early or late insufficiency or stenosis at a mean follow-up of 46 +/- 14 months. However, freedom from moderate to severe insufficiency (> 3+) was significantly better for CryoValve SG patients (p=0.03). In addition, for patients >2 years of age, CryoValve SGs were significantly less regurgitant (p=0.045) and stenotic (p=0.041). Long-term survival was identical at 85% (35/41).

**Conclusions:** Recently reintroduced to the market, CryoValve SGs demonstrate superior freedom from significant insufficiency at intermediate follow-up compared to standard allografts. For infants, rapid somatic growth would be the predominant factor leading to allograft failure. In older children, CryoValve SGs display both less insufficiency and stenosis.

D Relationship Disclosure

* STSA Member

**NOTES**

## 8. Quality of Life and Mood in the Elderly After Recovery Following Major Lung Resection

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**Authors:** Mark K. Ferguson[1], Carolyn M. Parma[1], Amy D. Celauro[1], Wickii T. Vigneswaran[1]

**Author Institution:** [1]*The University of Chicago, Chicago, IL, United States*

**Discussant:** Ⓓ *Todd L. Demmy, Buffalo, NY

**Objectives:** The increasing percentage of elderly patients undergoing lung resection for cancer necessitates a better understanding of long-term outcomes in this population. We studied the associations among quality of life (QOL), mood, clinical factors, and age after major lung resection.

**Methods:** Outcomes for QOL questionnaires (EORTC QLQ-C30) were compared to clinical factors for elderly (>69 years) and younger (<70 years) patients who recovered from major lung resection for stage I NSCLC from 1996-2006 and were without evidence of recurrence.

**Results:** Of 218 eligible patients, 124 completed questionnaires; 55 (44%) were elderly (age 76±4 years). The time from resection was 2.5±1.6 years. Despite similar comorbidities, elderly patients were more likely to experience pulmonary (11% vs 3%; p=0.07), cardiovascular (9% vs 1%; p=0.049), or any complications (25% vs 12%; p=0.045). QOL functioning scores, mood, and symptoms were similar between the two groups (Table; 100 point scale). For all patients, lowest quartile global and functioning QOL scores were associated only with dyspnea (multivariable logistic regression analysis; p<0.001 for each; ORs ranged from 1.30 to 2.37 per 10 point worsening of dyspnea score). Worst quartile dyspnea scores were associated only with FEV1% (p<0.001; OR 0.69 per 10 point increase in FEV1%). DLCO did not predict QOL.

**Conclusions:** QOL after recovery from lung resection is similar for elderly and younger patients despite an increased frequency of postoperative complications among elderly patients. QOL is related to dyspnea, not age or other comorbid factors. Dyspnea is related only to FEV1%. This information may help with patient selection and preoperative counseling.

**Financial Disclosure:** Todd Demmy – Receives compensation for intellectual property - Corvidien (Surgical Staplers)

| | Younger | Elderly | p value |
|---|---|---|---|
| Global QOL | 78.6 ± 19.5 | 78.2 ± 19.9 | 0.90 |
| Physical functioning | 86.2 ± 16.3 | 80.8 ± 15.7 | 0.07 |
| Role functioning | 87.4 ± 22.8 | 84.2 ± 27.7 | 0.49 |
| Emotional functioning | 82.2 ± 21.5 | 83.0 ± 17.6 | 0.82 |
| Cognitive functioning | 87.2 ± 19.6 | 86.4 ± 14.0 | 0.78 |
| Social functioning | 85.3 ± 20.7 | 88.5 ± 20.5 | 0.39 |
| Dyspnea* | 22.1 ± 20.8 | 28.0 ± 20.2 | 0.11 |
| Mood* | 12.7 ± 14.8 | 9.3 ± 7.8 | 0.25 |

***lower scores are better for these categories**

**NOTES**

## Thursday - First Scientific Session B

### 9. Short and Long-Term Outcomes of Aortic Valve Surgery in Patients with Impaired Left Ventricular Function

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**Authors:** Faisal Habib Cheema[1], Bryan Y Hwang[1], Ghulam Murtaza[1], Demetra Spiliotopoulos[1], Yildrim Imren[1], Tianna Umann[1], Ariel Benson[1], Fabio Barili[1], Tariq M Naseem[1], Morgan A Jeffrey[1], Barry C Esrig[1], Mehmet C Oz[1], Craig R Smith[1], Michael Argenziano[1]

**Author Institution:** [1]*College of Physicians and Surgeons of Columbia University and New York Presbyterian Hospital, New York, United States*

**Discussant:** Ⓓ * Donald D. Glower, Jr., Durham, NC

**Objectives:** Although aortic valve replacement (AVR) is the definitive treatment of patients with aortic stenosis or regurgitation, data regarding the clinical outcome of AVR in patients with poor left ventricular (LV) function is not only scarce but conflicting. We therefore reviewed our experience to determine outcomes of patients with poor ventricular function undergoing AVR..

**Methods:** Over an eight-year period, 1555 patients underwent aortic valve replacement at our institution (Isolated AVR=749, AVR+MVR=180, AVR+CABG=504 and AVR+Others=122). Patients were stratified into groups based on left ventricular ejection fraction: EF>40 and EF≤40. Long-term survival was obtained from the Social Security Death Index, and both short and long-term outcomes were analyzed using SPSS v 10.0.

**Results:** Within the isolated AVR group, patients with EF≤40 had a higher incidence of concomitant mitral valve disease (45.7 vs. 34.0%), previous heart surgery (27.1 vs. 16.6%), recent MI (within 21 days, 16.3 vs. 8.3%), past CHF (44.7 vs. 30.2%), and CHF at presentation (19.7 vs. 9.5%). However, except for a higher rate of malignant ventricular arrhythmia (11.1 vs. 1.3%) in the EF≤40 subgroup, preoperative EF did not influence the incidence of postoperative complications, hospital length of stay (LOS), 30-day mortality or long-term survival in isolated AVR patients (even, after further stratification, in the <20% subgroup [data not shown]) or those undergoing AVR+MVR. However, the incidence of postoperative respiratory failure, LOS and long-term survival were poorer in low EF than in normal EF patients undergoing AVR+CABG.

**Conclusions:** Low ejection fraction negatively influences 30-day and long-term survival rates in patients undergoing aortic valve replacement and coronary artery bypass grafting. However, there is no difference in clinical outcome, post-operative complications, 30-day mortality and long-term survival between patients with low and normal preoperative ejection fraction undergoing isolated aortic valve replacement or aortic valve replacement with concomitant mitral valve surgery.

Ⓓ Relationship Disclosure

* STSA Member

**Financial Disclosure:** Donald Glower – Research principal investigator - St. Jude Medical, Evalve, and Edwards Lifesciences (Valves)

**NOTES**

## 10. The Safe Removal of Chest Tubes Despite an Air Leak

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**Authors:** D*Robert J. Cerfolio[1], Ayesha S. Bryant[1]

**Author Institution:** *[1]University of Alabama at Birmingham, Birmingham, AL, United States*

**Discussant:** * Joseph Miller, Atlanta, GA

**Objectives:** The presence of an air leak is a current contraindication for the safe removal of chest tubes. Our objective was to evaluate the safety of chest tube removal in patients with an air leak.

**Methods:** A retrospective cohort study of a prospective database from one surgeon. Patients who underwent pulmonary resection and who had their chest tubes removed with an air leak were studied.

**Results:** Between 7/2000 and 7/2007, 5,198 patients underwent elective pulmonary resection by one general thoracic surgeon. One-hundred and ninety-nine patients with a persistent air leak had their chest tubes converted to a suction-less portable drainage devise and were discharged home. 194 patients (97%) returned to our clinic (median 16.5 days) and 38 (20%) had an air leak, 26 (13%) had a pneumothorax and 19 (10%) had both. All patients with no leak had their tubes removed in the clinic. Of the patients with a continued air leak, the first five patients were readmitted, had their chest tube clamped, and it was removed the next morning. The remaining 33 patients all had their tubes removed in the clinic without complications. At three months follow-up all patients were asymptomatic without evidence of pleural space problems, except three (1.5%) who developed an empyema.

**Conclusions:** : Patients with air leaks can be safely discharged home with their chest tubes. These tubes can be safely removed in those who still have an air leak and even a pneumothorax if they have been asymptomatic and have no subcutaneous emphysema after fourteen days on a portable suction-less device. These patients do not need re-admission or provocative tube clamping and have few problems afterwards.

**Financial Disclosure:** Robert J. Cerfolio – Speaker or consultant with Eplus Healthcare, Ethicon, Neomend, Millicore, Telefelx, OSI Pharmaceutical, Closure, Medela, Johnson and Johnson and Deknatal

**NOTES**

## 11. Do Abdominal Complications Impact Outcome Following Mechanical Circulatory Support Therapy?

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**Authors:** *Jay K. Bhama[1], Prasad Adusumulli[1], Stacey H. Brann[1], Michael P. Siegenthaler[1], Kenneth R. McCurry[1], Yoshiya Toyoda[1], Christian A. Bermudez[1], Robert L. Kormos[1]

**Author Institution:** *[1]University of Pittsburgh Medical Center , Pittsburgh , PA , United States*

**Discussant:** *John Conte, Baltimore, MD

**Objectives:** Mechanical circulatory support (MCS) therapy is life-sustaining for patients with end-stage heart failure. Most devices require abdominal transgression with the coincident potential for abdominal complications. The incidence and impact of these relatively under-reported complications is unknown.

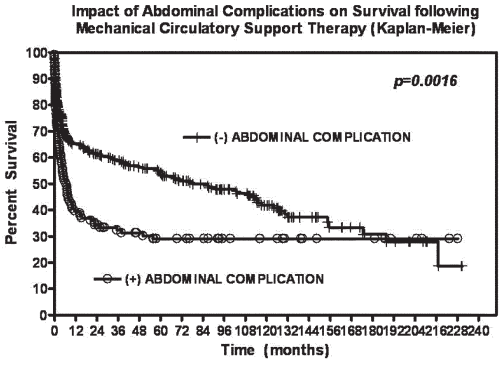
**Methods:** A retrospective review was performed of 325 patients who received 367 MCS devices from 1985-2007. Complications were categorized as: abdominal wall, device pocket, gastrointestinal tract, solid organ, retroperitoneal, and malnutrition.

**Results:** One-hundred and eleven patients (34%) experienced 165 abdominal complications. These involved the abdominal wall in 17 patients (15%), the device pocket in 18 patients (15%), the gastrointestinal tract in 48 patients (43%), the solid organs in 54 patients (48%), the retroperitonium in 2 patients (1.8%), and malnutrition in 9 patients (8%). Surgical intervention was required in 82% of patients with abdominal wall complications, 100% of patients with device pocket complications, 17% of patients with gastrointestinal tract complications, and 7% of patients with solid organ complications. Kaplan-Meier survival (Figure 1) at 1, 5, and 7 years for patients with abdominal complications was 40%, 29%, and 29% compared to 65%, 55%, and 50% for patients without abdominal complications (p=0.0016).

**Conclusions:** Abdominal complications are more common following MCS therapy than previously documented and significantly reduce overall survival. Surgical intervention is usually required for complications resulting from abdominal transgression related to device implantation while medical management is sufficient where complications result from shock or congestion. These findings have important implications for the development of future devices, implant technique, and patient selection.

D Relationship Disclosure

* STSA Member


Impact of Abdominal Complications on Survival following Mechanical Circulatory Support Therapy (Kaplan-Meier)
p=0.0016
(-) ABDOMINAL COMPLICATION
(+) ABDOMINAL COMPLICATION
Percent Survival
Time (months)
0 12 24 36 48 60 72 84 96 108 120 132 144 156 168 180 192 204 216 228 240

**NOTES**

## 12. Heart Transplantation for Adults with Congenital Heart Disease: Analysis of the United Network for Organ Sharing Database

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**Authors:** Nishant D Patel[1], Eric S Weiss[1], Stuart D Russell[1], Ashish S Shah[1], *Luca A Vricella[1], *John V Conte[1]

**Author Institution:** [1]*Johns Hopkins Medical Institutions, Baltimore, MD, United States*

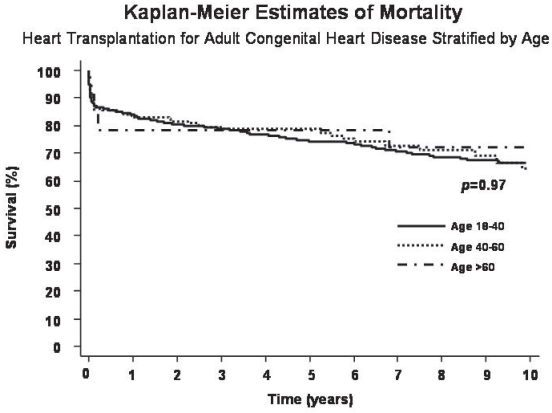
**Discussant:** *Charles Huddleston, St. Louis, MO

**Objectives:** Congenital heart disease (CHD) in the adult is a rare indication for heart transplantation, but has been increasing in frequency in recent years. Little is known about outcomes following heart transplantation in adults with CHD. We assessed survival and predictors of mortality following heart transplantation for adults with CHD.

**Methods:** All adult primary heart transplant recipients (>17 years of age) with a diagnosis of CHD reported to the United Network for Organ Sharing from 1987-2006 were reviewed. Kaplan-Meier survival analysis and Cox regression modeling were performed.

**Results:** During the study period 35,334 adults underwent primary heart transplantation. Two percent (689/35,334) underwent heart transplantation for CHD. The number of adults with CHD who had heart transplantion increased from 247 in the first decade (1987-1996) to 442 in the second decade (1997-2006). The mean time on the waiting list was 218 days, mean age at transplant was 33 years, 37% (251/687) were female, and 7% (48/687) were African American. Thirty-day mortality was 20% (111/689). Kaplan-Meier post-transplant survival was 80%, 69%, and 57% at 1, 5 and 10 years; survival did not differ when stratified by age groups (Figure). Cox proportional hazard regression modeling showed that ischemic time was a significant predictor of mortality (HR 1.19; 95% CI 1.03-1.37; p=0.01).

**Conclusions:** The number of adults with CHD undergoing heart transplantation is increasing. Heart transplantation is an important surgical therapy for these patients and demonstrates acceptable late survival. The 30-day mortality rate is high, and should decrease with increased experience with heart transplantation in adults with CHD.


Kaplan-Meier Estimates of Mortality
Heart Transplantation for Adult Congenital Heart Disease Stratified by Age
Survival (%)
100
90
80
70
60
50
40
30
20
10
0
0
1
2
3
4
5
6
7
8
9
10
Time (years)
p=0.97
Age 18-40
Age 40-60
Age >60

**NOTES**

## 13. Safe Transition from Thoracotomy to Thoracoscopic Lobectomy: A 5-Year Experience

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**Authors:** Christopher William Seder[1], Kenny Hanna[1], Victoria Lucia[1], Robert J. Welsh[1], Gary Chmielewski[1]

**Author Institution:** [1]*William Beaumont Hospital , Royal Oak , Michigan , United States*

**Discussant:** *Traves Crabtree, St. Louis, MO

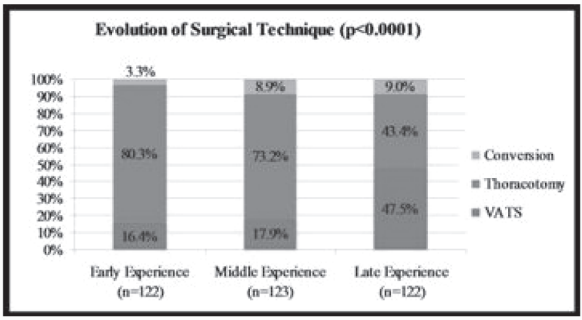
**Objectives:** Despite the benefits of minimally-invasive surgery, a minority of thoracic surgeons currently perform video-assisted thoracoscopic (VATS) lobectomies. We hypothesized that practicing thoracic surgeons, without advanced thoracoscopic fellowship training, can learn the VATS lobectomy without an increase in morbidity or mortality.

**Methods:** Data were retrospectively collected on all patients who underwent lobectomy between 2003 and 2008 at a single institution. Patient age, sex, FEV1, DLCO, stage, pathology, anatomic resection, surgical technique, complications, blood loss, transfusion requirement, chest tube duration, length of hospital stay, 30-day readmission, and 1-year mortality were examined. The percentage of VATS lobectomies performed and their outcomes were then compared over three sequential cohorts.

**Results:** Overall, 367 patients (241 thoracotomy; 100 VATS; 26 conversions) underwent lobectomy. The patients' baseline characteristics, pathology, and anatomic resections were similar in the early (n=122), middle (n=123), and late (n=122) cohorts. The percentage of VATS lobectomies increased from 16.4% (20/122) to 47.5% (58/122), while open lobectomies decreased from 80.3% (98/122) to 43.4% (53/122) ($p<0.0001$) (Figure 1). The complication rate remained the same, with the exception of air leaks >7 days, which decreased from 9.0% (11/122) to 1.6% (2/122) ($p=0.007$). Length of stay (median 6 vs. 5 vs. 4 days, $p<0.0001$) and chest tube duration (median 4 vs. 3 vs. 3 days, $p<0.0001$) also decreased with time. Blood loss, transfusion requirements, 30-day readmission, and 1-year mortality remained constant.

**Conclusions:** Over time, practicing thoracic surgeons can safely incorporate the VATS lobectomy with no increase in morbidity or mortality.

D Relationship Disclosure


Evolution of Surgical Technique (p<0.0001)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
3.3%
80.3%
16.4%
8.9%
73.2%
17.9%
9.0%
43.4%
47.5%
Conversion
Thoracotomy
VATS
Early Experience (n=122)
Middle Experience (n=123)
Late Experience (n=122)

**NOTES**

## 14. Laser-Assisted Extraction of Pacemaker and Defibrillator Leads: The Role of the Cardiac Surgeon

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**Authors:** Jeffrey G Gaca[1], Brian Lima[1], *Carmelo A Milano[1], Shu S Lin[1], *R Duane Davis[1], Ruth Ann Greenfield[1], *James E Lowe[1], *Peter K Smith[1]

**Author Institution:** *[1]Duke University Medical Center, Durham, NC, United States*

**Discussant:** * J. Mark Williams, Greenville, NC

**Objectives:** The development of percutaneous laser-assisted extraction techniques for chronically implanted pacemaker and defibrillator leads has reduced the need for open surgical removal. Reports of the mortality from laser-assisted extraction range from 0 to 1%. The purpose of this study was to determine the rate of major cardiovascular injury and emphasize the need for cardiac surgical participation in this procedure.

**Methods:** From December 2002 to September 2007, 250 consecutive patients underwent extraction of pacemaker/defibrillator leads at a single university medical center. Of these, 89 patients (35%) underwent laser-assisted extraction of 158 leads in the operating room. The indications for laser-assisted lead removal were lead dysfunction (40%), lead erosion or pocket infection (49%), or sepsis (11%). An additional two patients considered for laser-assisted extraction underwent elective sternotomy for removal of leads due to the large number of vegetations on the leads.

**Results:** Successful lead extraction was accomplished in 81 (91%) of the 89 patients. Emergent surgical intervention was required in 4 patients for caval perforation (1), subclavian vein injury (1), or right atrial injury (2). Three of the 4 patients requiring emergent invervention died for an overall series mortality of 3.4%. In July of 2006, a policy of cardiac surgeon presence during the laser-assisted extraction was instituted. Since that time, there has been one emergent sternotomy for right atrial injury and one elective sternotomy for lead removal with no procedure related deaths.

**Conclusions:** Despite recent advances in percutaneous laser technology for the removal of pacemaker/defibrillator leads, the potential for major cardiovascular injury and death remains. Involvement of the cardiac surgeon in both the preoperative decision making process as well as the laser-assisted lead extraction is critical to prevent and/or emergently treat any major complications. The analysis of this series reveals significant patient safety and physician reimbursement issues.

Ⓓ Relationship Disclosure

**NOTES**

## Friday - Basic Science Forum

### 1B. Atrial Cells with Regenerative Potential. Preliminary Study in a Pediatric Population

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**Authors:** Ann Steele[1], D *Jeffrey Phillip Jacobs[1], Peter Steele[1], Alfred Asante-Korang[1], Wilfredo Chamizo[1], William Schleif[1], Jasmine Steele[1], Robert Joseph Boucek Jr.[1]

**Author Institution:** *[1]All Childrens Hospital, St. Petersburg, Florida, United States*

**Objectives:** Objectives: Following injury, inadequate myocyte regeneration contributes to end-stage heart failure. In animal studies, cells with regenerative potential are abundant in right atrial (RA) appendage. Extrapolation to human heart, could provide a clinically applicable cell source for autologous cardiac regeneration trials. Hypothesis: Atrial Appendage is a robust, accessible source of human cardiac stem/progenitor cells (CSC/P).

**Methods:** Right and left atrial appendages from explanted hearts were obtained from 6 recipients, 8 days to 16 years old, at orthotopic transplantation. Appendages were cultured to promote out-trafficking and proliferative expansion. Analyses of molecular markers and transcription factors were performed. C-kit+ (CSC receptor) expression served as the screening criterion for cells with regenerative potential.

**Results:** C-kit+ cells out-trafficked from both right and left atrial appendages. Out-trafficking was detected between day 7 to 10 and peaked around 3 weeks. Individual c-kit+ cells spontaneously formed multi-cellular cardiospheres by day 14. Cells within spheres demonstrated various cardiac-specific lineages and levels of differentiation, The earliest proliferative (PCNA+) core cells expressed c-kit+. Some cells subjacent to the core region expressed cardiac transcriptional factors Gata-4 or NKX2.5. The sphere was occasionally punctuated with cells expressing: Isl-1+ (putative cardiac smooth muscle progenitor marker), MLC2+ (muscle light chain actin) and troponin. Early actin filament formation in sphere surface cells was verified by electron microscopy.

**Conclusions:** Atrial Appendage appears to be a source of CSC/Ps that may undergo differentiation to cardiomyocytes and related cardiac cell lineages. Preliminary observations support further studies on expansion and application for autologous myocardial regeneration strategies in humans.

**Financial Disclosure:** Jeffrey Jacobs – Receives a grant from Children's Heart Foundation as a Principal Investigator; Physician advisor and shareholder - Cardioaccess (data base system)`

D Relationship Disclosure

**NOTES**

## 2B. Alpha II-Spectrin Breakdown Products Serve as Novel Markers of Brain Injury Severity in a Canine Model of Hypothermic Circulatory Arrest

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**Authors:** Eric S Weiss[1], Lois U Nwakanma[1], Kevin KW Wang[4], Jason A Williams[1], Mary S. Lange[2], Jennifer L Berrong[2], Wilson Mary Ann[2], Mary E Blue[2], Juan C Troncoso[3], Michael V Johnston[2], *William A Baumgartner[1]

**Author Institution:** *[1]Division of Cardiac Surgery The Johns Hopkins University School of Medicine, Baltimore, MD, United States; [2]Division of Neuropathology The Kennedy Kreiger Institute Johns Hopkins Medical Institutions, Baltimore, MD, United States; [3]Department of Pathology The Johns Hopkins University School of Medicine, Baltimore, MD, United States; [4]Department of Neuroscience and the Department of Psychiatry University of Florida and Center of Innovative Research Banyan Biomarkers Inc., Gainsville, FL, United States*

**Objectives:** The development of biomarkers to aid in diagnosis and prognosis of neuronal injury is of paramount importance in cardiac surgery. Alpha II-spectrin is a structural protein abundant in neurons of the central nervous system and cleaved into signature fragments by proteases involved in necrotic and apoptotic cell death. We measured cerebrospinal fluid (CSF) alpha II-spectrin breakdown products (alphaII-SBPs) in a canine model of hypothermic circulatory arrest (HCA) and cardiopulmonary bypass (CPB).

**Methods:** Canine subjects were exposed to either 1 hour of HCA (n=4), or standard CPB (n=4). CSF samples were collected 72 hours prior to treatment and 8 and 24 hours post-treatment. Using polyacrylamide gel electrophoresis and immunoblotting, SBDPs were isolated and compared between groups using computer-assisted densitometric scanning. Necrotic versus apoptotic cell death was indexed by measuring calpain and caspase-3 cleaved alphaII-spectrin breakdown products (alphaII-SBDP) (SBDP 145+150 and SBDP 120, respectively).

**Results:** Animals undergoing HCA demonstrated mild patterns of histological cellular injury and clinically detectable neurologic dysfunction. Calpain-produced alphaII-SBDP (150kDa+145kDa bands-necrosis) 8 hours post HCA, were significantly increased (p=0.05) as compared to levels prior to HCA and remained elevated at 24 hours post HCA. In contrast caspase-3 alphaII-SBDP (120kDa band-apoptosis) were not significantly increased(Figure). Animals receiving CPB did not demonstrate clinical or histological evidence of injury, with no increases in necrotic or apoptotic cellular markers.

**Conclusions:** We report the first use of alphaII-SBDPs as markers of neurological injury following cardiac surgery. Our analysis demonstrates that calpain and caspase-3 produced alphaII-SBDPs may be an important and novel marker of neurologic injury following HCA.

D Relationship Disclosure

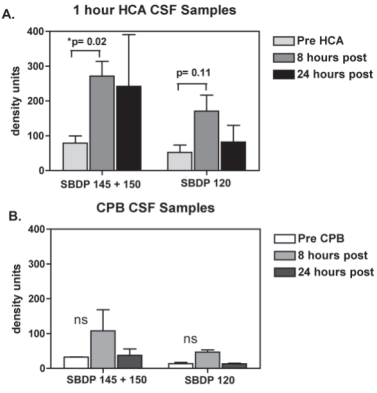


**Figure**: Changes in necrotic markers (SBDP 145+150) and apoptotic markers (SBDP 120) for animals recieving 1 hour of HCA (A.) and those receiving CPB alone (B.) at all time points.

## NOTES

## 3B. Neutralization of Interleukin (IL)-18 Ameliorates Ischemia/Reperfusion (I/R)-Induced Myocardial Injury

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**Authors:** *V. Seenu Reddy[1], *John H. Calhoon[1], *Clinton E. Baisden[1], Bysani Chandrasekar[2]

**Author Institution:** *[1]University of Texas Health Science Center, San Antonio, Texas, United States; [2]South Texas Veterans Health Care System, San Antonio, TX, United States*

**Objectives:** Interleukin (IL)-18 promotes cardiac hypertrophy and angiogenesis. IL-18 has been shown to play a crucial role in atherosclerosis and inflammation. We have demonstrated NF-kB-dependent IL-18 induction in cardiomyocytes following oxidative stress and TNF-a treatment. Since I/R is characterized by the induction of proinflammatory cytokines, we hypothesized that IL-18 is overexpressed following I/R, and neutralization of IL-18 will attenuate I/R-mediated tissue injury.

**Methods:** I/R studies were performed using a closed-chest mouse model. Animals (male C57BL/6 mice) underwent 30 min LAD ligation followed by various periods of reperfusion. Sham-operated animals served as controls. The non-ischemic left ventricular tissue was analyzed for lipid peroxidation (MDA/4-HNE), NF-kB DNA binding activity (gel shift), IL-18 expression (Northern, Western, ELISA) and neutrophil infiltration (MPO activity). Infarct size was measured at 24 hr using TTC staining. A subset of animals were treated with monoclonal anti-mouse IL-18 neutralizing antibodies 1 hr prior to LAD coronary artery ligation (n=6/group).

**Results:** I/R significantly increased oxidative stress as evidenced by an increase in MDA/4-HNE levels (30 min I/2 h R Vs. 30 min I alone and sham-operated, $p<0.001$). Gel shift and supershift assays revealed increased levels of NF-kB following I/R with upregulation of p50 and p65. I/R induced IL-18 mRNA (3.1-fold, $P<0.01$ Vs. sham-operated controls; n=4/group) and protein levels (4.1-fold, $P<0.001$ Vs. sham-operated; n=4/group). In control animals that received neither IL-18 neutralizing antibodies nor normal rat IgG (pre-immune), the mean I/R-induced infarct size was 60.8%. In contrast, administration of IL-18 neutralizing antibodies reduced I/R-induced tissue injury as seen by a significant reduction in infarct size (31% reduction Vs. Control and normal rabbit IgG, $P<0.01$). Moreover, blocking IL-18 attenuated oxidative stress, neutrophil infiltration and NF-kB activation.

**Conclusions:** These results indicate that IL-18 plays a critical role in I/R induced tissue injury, and anti-IL-18 immunotherapy is a viable strategy to reduce infarct size.

D Relationship Disclosure

* STSA Member

**NOTES**

## 4B. Inhibition of Neointimal Hyperplasia Following Arterial Bypass Using a Novel Bioengineered Vascular Graft

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**Authors:** Christopher B. Komanapalli[1], Noi T. Tran[1], Ulla Marzec[1], *Ross M. Ungerleider[1], Stephen R. Hanson[1], *Howard Kim Song[1]

**Author Institution:** [1]*Oregon Health and Sciences University, Portland, Oregon, United States*

**Objectives:** The use of prosthetic arterial bypass grafts is limited by neointimal hyperplasia (NH) causing flow limiting lesions and graft thrombosis. We developed a novel intraluminal drug delivery system that may favorably alter vascular graft healing and remodeling. We analyzed the effect of various agents on NH formation in an animal model of arterial bypass.

**Methods:** 4 mm expanded polytetrafluoroethylene (ePTFE) grafts were fitted with the intraluminal drug delivery system and implanted in 10-15 kg baboons as aorto-bi-iliac bypass grafts. High local doses of sirolimus, avastin, VEGF, paclitaxel, and analogues of spermine (polyamines) were infused intraluminally using osmotic minipumps for a period of 4 weeks. Grafts and peri-anastomotic segments were harvested at the termination of infusion and NH formation was then assessed using morphometric analysis.

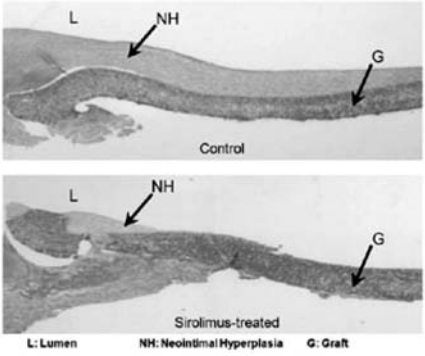
**Results:** NH was quantified by total area, maximal NH thickness, and standardized NH thickness. By each of these measures, NH was dramatically reduced in grafts treated with local sirolimus. (Figure 1) Total area, maximal NH thickness, and standardized NH thickness were reduced from 0.92 mm, 1.11 mm2, and 0.12 mm in the control group, to 0.15 mm, 0.22 mm2, and 0.03 mm in the sirolimus group ($p<0.01$). Total area, maximal NH thickness, and standardized NH thickness were reduced by 84%, 79%, and 77%. Intraluminal infusions of avastin, VEGF, paclitaxel, and polyamines were not found to significantly reduce NH ($p>0.05$).

**Conclusions:** Low dose intraluminal sirolimus infusion dramatically reduces early NH formation in this model. This finding has immediate clinical implications for patients who require revascularization.

Ⓓ Relationship Disclosure

* STSA Member

Figure 1: Inhibition of Neointimal Hyperplasia Formation by Local Sirolimus Infusion




L: Lumen NH: Neointimal Hyperplasia G: Graft

**NOTES**

## 5B. Pre-Implant Treatment of the Human Radial Artery with the Rho Kinase Inhibitor Fasudil Attenuates Acute Vasoconstriction

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**Authors:** Christopher J Mutrie[1], *Vinod H Thourani[1], Shady M Eldaif[1], W Caleb Rutledge[1], Jiang Rong[1], Zhi-Qing Zhao[1], *Robert A Guyton[1], *Omar M Lattouf[1], *John D Puskas[1], Jakob Vinten-Johansen[1]

**Author Institution:** *[1]Division of Cardiothoracic Surgery Emory University, Atlanta, Georgia, United State*

**Objectives:** Although the radial artery bypass conduit has excellent intermediate-term patency, its proclivity to vasospasm limits its use clinically. The GTPase enzyme, Rho kinase, regulates smooth muscle contraction by increasing sensitivity of myosin light chain kinase (MLCK) to calcium, promoting actin-myosin cross-bridge formation and vasoconstriction. We tested the hypothesis that pretreatment of radial artery segments with Fasudil (a Rho-kinase inhibitor) attenuates vasoconstrictor responses to receptor-mediated (phenylephrine and norepinephrine) and non-receptor-mediated (KCl) stimuli compared with papaverine.

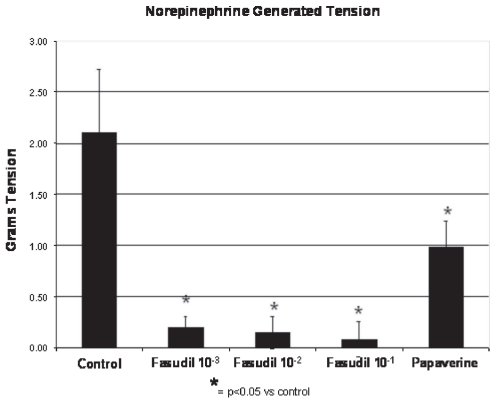
**Methods:** Discarded human radial artery segments were harvested from patients (n=10) undergoing coronary artery bypass grafting. The segments were placed into organ chambers containing Krebs-Henseleit (KH) buffer and pre-stretched to 2 gm tension. Control segments (n=8) underwent KH buffer incubation, while study segments were incubated for 30 minutes with 10, 100 or 1000 µmol/L Fasudil or 1 µmol/L papaverine. The contractile reponse of each segment was tested utilizing the vasoconstrictors norepinephrine or phenylephrine (15 µmol/L) or KCl (60 mmol/L).

**Results:** Papaverine partially inhibited the contractile response to norepinephrine by 53% of that in Control ($p=0.009$) (See Figure 1). However, there was a greater dose-dependent 91%, 93% and 96% inhibition of constriction ($p<0.001$ vs Control) with 10, 100 or 1000 µmol/L Fasudil, respectively. Similarly, Fasudil showed greater inhibition of vasoconstrictor responses to phenylephrine and KCl compared to papaverine and Control segments.

**Conclusions:** Brief pretreatment of human radial artery bypass segments with a clinically used Rho-kinase inhibitor, Fasudil, is more effective than papaverine in inhibiting acute vasoconstrictor responses to receptor-dependent and receptor-independent vasoconstrictors.

D Relationship Disclosure

* STSA Member


Norepinephrine Generated Tension
Grams Tension
3.00
2.50
2.00
1.50
1.00
0.50
0.00
Control
Fasudil 10-3
Fasudil 10-2
Fasudil 10-1
Papaverine
* = p<0.05 vs control

**NOTES**

## Friday - Second Scientific Session

### 15. Hybrid Repair of Aneurysms of the Transverse Aortic Arch: Mid-Term Results

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**Authors:** Ⓓ *G. Chad Hughes[1], Ⓓ Mani A. Daneshmand[1], Ⓓ Keki R. Balsara[1], Ⓓ Hardean A. Achneck[1], Ⓓ Bantayehu Sileshi[1], Ⓓ Sean M. Lee[1], Ⓓ Richard L. McCann[1]

**Author Institution:** *[1]Duke University Medical Center, Durham, NC, United States*

**Discussant:** Ⓓ *Joseph Coselli, Houston, TX

**Objectives:** Aneurysms of the transverse aortic arch, especially those involving the mid to distal arch, are technically challenging to repair with conventional open techniques. We present our results with a combined open/endovascular approach ("hybrid repair") to such patients.

**Methods:** From 8/11/05-present, 23 patients underwent hybrid arch repair. For those (n=6) with distal arch aneurysms, but 2 cm of proximal landing zone (PLZ) distal to the innominate artery, right to left carotid-carotid bypass was performed to create PLZ. For those (n=10) with mid arch aneurysms, but 2 cm of PLZ in the ascending aorta, ascending aortic based arch debranching was performed. For those (n=7) with arch aneurysms with no adequate PLZ ("mega aorta"), but adequate distal landing zone, stage I elephant trunk procedure was performed to create PLZ. For the first 2 groups, endovascular aneurysm exclusion and debranching were performed concomitantly, whereas the procedures were staged for those undergoing initial elephant trunk.

**Results:** Mean patient age was 63+14 years. Primary technical success rate was 100%. Thirty day/in-hospital rates of death, stroke, and permanent paraplegia/paresis were 0%, 0%, and 4% (n=1), respectively. At a mean f/u of 13+9 months, there have been no late aortic related events. One patient (4%) required secondary endovascular re-intervention for a Type I endoleak. No patient has a Type I or III endoleak at latest f/u.

**Conclusions:** "Hybrid" repair of transverse aortic arch aneurysms appears safe and effective at mid-term follow-up and may represent a technical advance in the treatment of this pathology.

**Financial Disclosure:** G. Chad Hughes – Speaker for Gore - TAG Graft; Speaker for Vascutek - Vascutek Graft

**Financial Disclosure:** Joseph Coselli – Educational Grants - Terumo (Aortic Grafts); Educational Grants and Clinical trials - St. Jude Medical (Heart Valves); Educational Grants – Edwards Lifesciences (Heart Valves); Clinical Trial – Cook Medical (Endovascular Stent Grafts); Educational Grants – W.L. Gore (Endovascular Stent Grafts)

Ⓓ Relationship Disclosure

**Regulatory Disclosure:** Content refers to the off-label use of Gore TAG Thoracic Endograft for Hybrid Repair

**NOTES**

## 16. Intra-Operative Hyperglycemia is Associated with a Higher Risk of Post-Operative Septicemia in the Pediatric Cardiac Surgery Population

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**Authors:** *James E. O'Brien[1], Jennifer A. Swihart[1], Marcy L. Tarrants[1], Richard E. Stroup[1], *Gary K. Lofland[1]

**Author Institution:** [1]*The Childrens Mercy Hospital and Clinics, Kansas City, Missouri, United States*

**Discussant:** * William Gaynor, Philadelphia, PA

**Objectives:** Intra-operative hyperglycemia has been found to be associated with a higher incidence of post-operative infections in the adult cardiac surgery population. The goal of this study was to determine the relatedness of intra-operative hyperglycemia and post-operative septicemia in the pediatric population.

**Methods:** We retrospectively reviewed 1132 surgical cases requiring cardiopulmonary bypass support (992 unique patients) for patients <18 years old that took place between June 2002 and July 2007. We examined the highest glucose level recorded on bypass for each patient. We recorded any positive blood cultures for patients in the post-operative period until discharge.

**Results:** There was a correlation between hyperglycemia (glucose >126mg/dL) and septicemia. An intra-operative increase of 20mg/dL in a patient's glucose level caused the patient to have a 13% greater chance of having septicemia (p=.001, OR=1.13, 95% CI=1.05 to 1.22). The correlation between the highest glucose during bypass and septicemia became statistically significant when the glucose level exceeded 132 mg/dL (X_=4.40, df=1, p=.036). A patient was twice as likely to have septicemia when the glucose exceeded 132 mg/dL during bypass, as a patient whose glucose did not exceed this level (OR=2.04, 95% CI=1.04 to 4.01). 193 patients had glucose <=132mg/dL (193/992=19.5%), of these patients, 10 had septicemia (10/193=5.2%). 799 patients had a glucose >132mg/dL (799/992=80.5%), of these patients, 80 experienced a septicemia (80/799=10.0%).

**Conclusions:** Intra-operative hyperglycemia is associated with a higher risk of post-operative septicemia in the pediatric cardiac surgery population. Strict intra-operative glycemic control should reduce this risk.

🄳 Relationship Disclosure

* STSA Member

**NOTES**

## 17. Intrapleural Bupivacaine Delivered by Chest Tubes Improves Pain Control and Decreases 24 Hr Opioid Use After VATS

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**Authors:** Ⓓ *Todd L. Demmy[1], Sai Yendamuri[1], Chumy Nwogu[1], Oscar DeLeon[1]

**Author Institution:** *[1]Roswell Park Cancer Institute, Buffalo, NY, United States*

**Discussant:** * John Howington, Evanston, IL

**Objectives:** With the aim of decreasing the pain and opioid usage of patients undergoing Video-assisted Thoracic Surgery (VATS), this study compared a simplified method of intrapleural bupivacaine administration to traditional analgesic therapy.

**Methods:** Thirty patients had non-rib spreading thoracoscopic operations under general anesthesia and were randomized prospectively to no (control), intermittent (30cc bolus every six hours), or continuous (5cc per hour) local anesthetic infusion groups. The 0.25% bupivacaine was delivered through the pleural infusion channel of a single specialty silicone 28F chest tube (Axiom®) designed for that purpose. Total intravenous fentanyl PCA (boluses with basal rate) infused in the first 24 hours after surgery was the designated primary study endpoint. Escalations of analgesic therapy (including ketorolac administration) were standardized across all groups. Nurses assessed pain control at onset and 6 hour intervals by visual-analogue scales (VAS, 100mm) VAS were always repeated 10 min later to assess any opioid or bupivacaine bolus effects. ANOVA/Kruskal Wallis tests compared the endpoints across the three experimental groups.

**Results:** There were no study-related adverse events. Compared to controls, pooled VAS scores and 24 hr fentanyl consumption were significantly lower for both intermittent and continuous administration groups (*see table). One patient per group warranted early chest tube removal (17-22 hours) requiring extrapolation of the 24 hour endpoint. Early (6hr) VAS analgesic responses were more certain for intermittent (10/10) and continuous (10/10) patients than controls (7/10, p=0.04).

**Conclusions:** Intermittent or continuous intrapleural bupivacaine infused by chest tubes reliably reduces post-operative pain and 24 hr opioid usage in VATS patients.

**Financial Disclosure:** Todd Demmy – Receives compensation for intellectual property - Corvidien (Surgical Staplers)

Ⓓ Relationship Disclosure

* STSA Member

| Parameter | Control N=10 | Intermittent N=10 | Continuous N=10 | p-value |
|---|---|---|---|---|
| Median Onset (Peak 24 hr) VAS (mm) | 63 (76) | 63 (79) | 56 (70) | NS |
| Mean combined 6, 12, 18, & 24 hour + 10min VAS (mm) | 42±4 | 28±5 | 27±4 | *0.03 |
| Ketorolac required | 2 | 1 | 3 | NS |
| Median 24 hour Total Fentanyl (µg) | 1753 | 1180 | 1177 | *0.04 |

**Pain Control after VATS**

**NOTES**

## 18. Does the Level of Experience of Residents Impact Outcomes of Coronary Artery Bypass Surgery?

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**Authors:** Peter I. Tsai[1], Danny Chu[1], Amandeep Dhaliwal[1], Biykem Bozkurt[1], *Scott Anthony LeMaire[1], *Matthew J. Wall[1], *Joseph S. Coselli[1], *Joseph Huh[1], Faisal G Bakaeen[1]

**Author Institution:** [1]*The Michael E DeBakey VA Medical Center and Baylor College of Medicine, Houston, Texas, United States*

**Discussant:** *Curt Tribble, Gainesville, FL

**Objectives:** At our institution, coronary artery bypass grafting (CABG) operations are performed by staff surgeons or by first- or second-year cardiothoracic residents under the direct supervision of attending surgeons. We evaluated the influence of surgical seniority on outcomes.

**Methods:** Using our prospectively collected departmental database, we identified all primary, isolated CABG operations (n=1042) performed between July 1997 and April 2007. Operations were then stratified according to the seniority of the primary surgeon: first-year cardiothoracic resident (CT1), second-year cardiothoracic resident (CT2), or staff surgeon. Data were examined for any association between the 3 levels of experience and surgical outcomes.

**Results:** Staff, CT2, and CT1 surgeons performed 47 (4%), 610 (59%), and 385 (37%) cases, respectively. Mean operative, perfusion, and cross-clamp times were shorter as the level of experience increased: 345, 118, and 68 minutes (CT1) versus 313, 106, and 58 minutes (CT2) versus 302, 96, and 57 minutes (staff) ($P<0.05$ for all comparisons). The incidence of major morbidity (10.1%, 12.3%, 12.8%) and operative mortality (0.8%, 1.5%, 2.1%) were similar for patients of CT1, CT2, and staff surgeons, respectively ($P>0.15$ for all). In univariate and multivariate analysis, the seniority of the primary surgeon was not a significant independent predictor of morbidity or perioperative mortality. On follow-up (mean, 1485±1015 days), there was no significant difference in patient survival (log-rank $P=0.64$).

**Conclusions:** Lower academic seniority was associated with longer CABG operative times but did not affect outcomes. Training residents to perform CABG is safe and is characterized by progressive improvement in their technical efficiency.

Ⓓ Relationship Disclosure

**NOTES**

## 19. Case-Control Comparison of 5-Year Survival in Patients with Lung Cancer Undergoing Thoracoscopic and Open Lobectomy

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**Authors:** Ⓓ *John R Roberts[1], Aravindhan Sriharan[1], Timothy D Roberts[1]

**Author Institution:** *[1]Southeastern Research Associates, Nashville, TN, United States*

**Discussant:** *Daniel Miller, Atlanta, GA

**Objectives:** Thoracoscopic lobectomy is becoming more popular for the treatment of early stage NSCLC, but questions remain about its efficacy as a cancer operation. We performed a case-control comparison of open and thoracoscopic lobectomies in patients with stage I NSCLC and compared the 5-year survival.

**Methods:** These data were harvested from a prospective database. Three hundred patients, 150 thoracoscopic and 150 open lobectomies, were chosen to match for age (within 10 years), sex, and stage of cancer. Standard demographic data (length of stay, chest tube duration, life-threatening complications, major complications, and perioperative mortality) were collected, as was five-year survival. Student's t test was used to compare means, and chi-square for proportions. Standard statistical parameters were used to determine significance.

**Results:** No differences in the ages nor fraction of women were found in these controlled groups. The patients undergoing thoracoscopic lobectomy had significantly shorter lengths of stay (6.1 days vs. 8.4 days) and shorter ICU stays (0.13 days vs. 0.95 days). The postoperative mortality was similar. Finally, there were no differences in the five-year survival between open and closed stage IA and open and closed stage IB NSCLC. Specifically, both the thoracoscopic and open stage IA groups had five year survivals approaching 75%, while both stage IB groups had 5-year survivals just over 65%.

**Conclusions:** Whether thoracoscopic lobectomy offers dramatic improvements in length of stay or diminution in pain remains controversial. However, these data demonstrate conclusively that thoracoscopic lobectomy is equivalent to open lobectomy as a cancer operation.

**Financial Disclosure:** John Roberts – Instructor with Covidien

**NOTES**

## 20. More Lesions for Atrial Fibrillation at the Time of Surgery May Mean Fewer Treatments in Follow-Up

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**Authors:** 🄳 *Richard Lee[1], 🄳 Darren Danielson[1], 🄳 Edwin McGee[1], 🄳 S. Chris Malaisrie[1], 🄳 Jane Kruse[1], 🄳 Jennifer O'Leary[1], 🄳 Haris Subacius[1], 🄳 Anna Huskin[1], 🄳 Patrick McCarthy[1]

**Author Institution:** *[1]Northwestern University, Chicago, IL, United States*

**Discussant:** 🄳 Harold Roberts, Lauderdale Lakes, FL

**Objectives:** The objective of this study was to examine the influence of lesion patterns and the need for treatment in follow-up.

**Methods:** Between April 2004 and February 2007 a single surgeon performed 228 Atrial Fibrillation (AF) surgeries. 41 patients (18%) had isolated AF procedures; 187 (82%) had concomitant procedures. 40 patients (20.1%) received complete biatrial lesions (BA), 101 (52.6%) received full left sided only lesions (LA) and 51 (26.6%) received pulmonary vein isolation (PVI) only. Thirty-six patients had alternative procedures or lesions and were excluded from this analysis. The percent of paroxysmal AF (PAF) was 58% (n=23) in BA, 59% (n=60) in LA and 65% (n=33) in PVI. Prospective follow-up (median 185 days) was completed by an AF nurse. Freedom from AF was determined by a 2 week monitor at three and six months respectively. Comparisons were made using chi square analysis.

**Results:** Table 1 identifies post-operative treatments by group.

**Conclusions:** Equivalent freedom from AF can be achieved with different lesion sets at one year. Patients undergoing PVI alone should expect more post-operative medical therapy and catheter intervention. BA lesion sets continue to provide the best results after surgery for AF and should be employed whenever possible.

**Financial Disclosure:** Richard Lee – Consultant for Medtronic - Bipolor Radiofrequency Ablation

**Financial Disclosure:** Patrick McCarthy – Consultant for Medical CV, Edwards

**Financial Disclosure:** Harold Roberts – Speaker and research grants - ATS Medical (Cryocath)

**Regulatory Disclosure:** Content refers to the FDA approved bipolar radiofrequency clamp used in the MAZE procedure. Approved for soft tissue use

| | BA | LA | PVI | P-Value |
|---|---|---|---|---|
| AF Free | 13/13 (100%) | 19/24 (79%) | 16/18 (89%) | NS |
| Postoperative Catheter Ablation | 0/30 (0%) | 2/59 (3.4%) | 8/27 (29.6%) | P<0.001 |
| On antiarrhythmics | 4/23 (17.4%) | 8/28 (28.6%) | 8/14 (57%) | P=0.037 |
| On anticoagulants | 8/22 (36.4%) | 15/21 (71.4%) | 12/13 (92.3%) | P=0.002 |

**NOTES**

## 21. Assessment of Robotic Thymectomy for Myasthenia Gravis Using the Myasthenia Gravis Foundation of America Guidelines: An Underutilized Surgical Outcome Tool

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**Authors:** Seth Daniel Goldstein[1], *Stephen C Yang[1]

**Author Institutions:** [1]Johns Hopkins School of Medicine, Baltimore, MD, United States

**Discussant:** *Stephen Cassivi, Rochester, NY

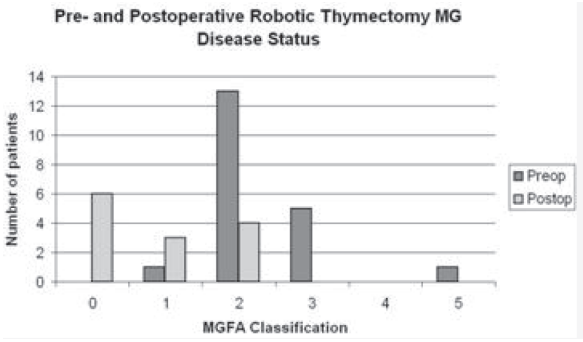
**Objectives:** To report the experience and outcomes regarding robotic thymectomy for myasthenia gravis (MG) using the Myasthenia Gravis Foundation of America (MGFA) clinical research standards, which to date have been infrequently adopted in the surgical literature.

**Methods:** The patient population comprised 20 consecutive recipients of a robotic thymectomy for MG, performed by a single surgeon using the Intuitive Surgical daVinci System via a three-port right-sided approach.

**Results:** Mean operative times (SD) were 71 (19) minutes of robotic system activation and 126 (27) minutes from incision to closure. There were no intra- or postoperative mortalities; the most common intraoperative complication was desaturation following single-lung ventilation, for which 3 were converted to open procedures. On histologic examination, 4 were found to have thymomas. The average follow-up was 14 months. Mean preoperative MGFA disease classification was 2.5 and mean postoperative was 0.8 (Figure 1), which was a statistically significant decrease ($p=0.04$, log rank). The average daily dose of cholinesterase inhibitor decreased by 50% postoperatively. Overall, 94% of patients improved and 6% were unchanged; no worsening disease was observed.

**Conclusions:** Robotic thymectomy for MG appears to be safe and efficacious. There were no notable differences in patient demographics compared to previous published reports of open thymectomies. Furthermore, surgical and neurological outcomes in this series compare favorably to conventional approaches in the literature. Of those with adequate follow-up, 94% of patients receiving a robotic thymectomy demonstrated significant clinical improvement postoperatively, indicating that this approach in concert with optimized medical management is an effective treatment for MG. As with other thoracoscopic procedures, high body mass index may adversely affect tolerance of single-lung ventilation and should be considered when offering surgical treatment options. Clinical improvement was not predicted by age, race, disease severity, disease duration, or serologic antibody status.

Ⓓ Relationship Disclosure


Pre- and Postoperative Robotic Thymectomy MG Disease Status
Number of patients
14
12
10
8
6
4
2
0
0
1
2
3
4
5
MGFA Classification
Preop
Postop

**NOTES**

## 22. Meld Score Predicts Mortality for Tricuspid Valve Surgery

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**Authors:** *Gorav Ailawadi[1], Suzanne A Siefert[1], Brian R Swenson[1], *John A Kern[1], Benjamin B Peeler[1], *Irving L Kron[1]

**Author Institution:** *[1]University of Virginia, Charlottesville, Virginia, United States*

**Discussant:** *Fred Crawford, Charleston, SC

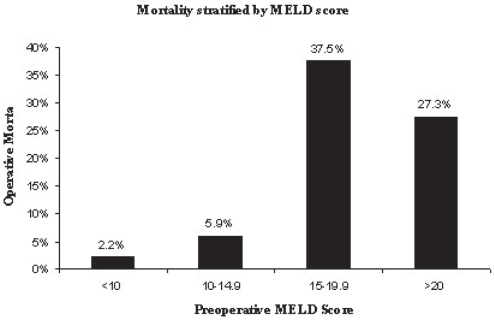
**Objectives:** Patients undergoing tricuspid valve surgery have a high mortality (STS database= 10%) and often have liver dysfunction. The Model for End Stage Liver Disease (MELD) score accurately predicts mortality for abdominal surgery. The objective of this study was to determine if MELD could predict mortality following tricuspid valve surgery as well as Euroscore.

**Methods:** Patients undergoing tricuspid valve operation at our institution from 1996-2008 were reviewed. A total of 168 patients (mean age= 61±14 years, M=72, F=96) underwent tricuspid repair (n=156) or replacement (n=12). Concomitant operations were performed in 87% (146/168). Patients with a history of liver disease or MELD>15 [MELD=3.8*LN(Total bilirubin)+11.2*LN(INR)+9.6*LN(Cr)+6.4] were compared to those without liver disease or MELD<15. Preoperative risk, intraoperative findings, and complications including operative mortality were evaluated. Statistical analyses were performed using chi-square, Fisher's exact test, and area under the curve (AUC) analyses.

**Results:** Patients with a history of liver disease or MELD>15 had significantly higher mortality [19.4% (7/36) vs. 4.7% (6/127), P=.004]. To further characterize the effect of MELD, patients (n=98) were stratified by MELD alone. No differences in demographics or operation were identified between groups. Mortality increased as MELD score increased, especially when MELD>15 (P=.0018, see table).
By multivariate analysis, MELD>15 remained strongly associated with mortality (P=0.019). MELD score predicted mortality (AUC=0.78) as well as the the Euroscore logistic risk calculator (AUC=0.78). Multisystem organ failure was also associated with MELD>15 (P=.024).

**Conclusions:** MELD score predicts mortality in patients undergoing tricuspid valve surgery and offers a simple and effective method of risk stratification in these patients.

D Relationship Disclosure


Mortality stratified by MELD score
Operative Morta
40%
35%
30%
25%
20%
15%
10%
5%
0%
2.2%
5.9%
37.5%
27.3%
<10
10-14.9
15-19.9
>20
Preoperative MELD Score

**NOTES**

# Friday - Third Scientific Session A – Cardiac Breakout

## 23. Favorable Early Outcomes for Patients with Extended Indications for Thoracic Endografting

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**Authors:** D *Howard K. Song[1], D Gregory J. Landry[1], D Kenneth J. Kolbeck[1], D Matthew S. Slater[1], D Timothy K. Liem[1], D Gregory Moneta[1], D John A. Kaufman[1]

**Author Institution:** [1]*Oregon Health and Science University , Portland , OR , United States*

**Discussant:** D *G. Chad Hughes, Durham, NC

**Objectives:** Endografts originally designed and approved for the treatment of thoracic aortic aneurysms have rapidly been adopted for the treatment of non-approved disorders of the thoracic aorta, including aortic transection, dissection, pseudoaneurysms, and thoracoabdominal aneurysms. The purpose of this study was to evaluate the early outcomes of patients treated with thoracic endografts for non-approved indications at our institution.

**Methods:** The medical records of patients undergoing thoracic endografting at our institution from August 2005 until March 2008 were reviewed. Patients undergoing endografting for uncomplicated thoracic aortic aneurysms were excluded. The outcomes of patients with extended indications for thoracic endografting were studied.

**Results:** Endografting was performed in 30 patients for non-approved aortic conditions over the study period. Patients underwent endografting for a spectrum of indications, including aortic transection (11), complications of Type B aortic dissection including rupture (9), thoracoabdominal aneurysm with visceral debranching (6), aortic arch debranching (2), and pseudoaneurysm associated with prior coarctation repair (2). Early outcomes were favorable. All patients had successful endograft repair of their anatomic lesion. There were no endoleaks. There was no hospital mortality. Average hospitalization was 15 days for patients with aortic transection and 9 days for all other patients.

**Conclusions:** Thoracic endografts are versatile devices that with appropriate expertise can be used effectively to treat a spectrum of disorders of the thoracic aorta, including acute emergencies. Early outcomes of patients with extended indications for thoracic endografting compare favorably to published series of patients treated with open procedures. Further study is required to assess the long-term efficacy of these devices.

D Relationship Disclosure

* STSA Member

**Financial Disclosure:** G. Chad Hughes – Speaker with Gore (TAG Graft)

**Regulatory Disclosure:** Content refers to the FDA approved Gore TAG Thoracic Endoprostheseis and Cook Zenith Iliac Extender Endovascular Grafts off-label use in endovascular repair of thoracic aortic transaction and dissection

**NOTES**

## 24. Proximal Thoracic Stent Grafting Via the Open Arch During Standard Repair for Acute Debakey I Aortic Dissection Prevents Development of Dissecting Thoracoabdominal Aortic Aneurysms.

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**Authors:** Ⓓ Alberto Pochettino[1], Ⓓ William T. Brinkman[1], Ⓓ Patrick Moeller[1], Ⓓ Frank W. Bowen[1], Ⓓ G.William Moser[1], Ⓓ Wilson Y. Szeto[1], Ⓓ Y. Joseph Woo[1], Ⓓ Joseph E. Bavaria[1]

**Author Institution:** *[1]University of Pennsylvania Health System, Philadelphia, Pennsylvania, United States; [2]University of Pennsylvania Health System, Philadelphia, Pennsylvania, United States*

**Discussant:** Ⓓ *Marc Moon, St. Louis, MO

**Objectives:** Acute Debakey I dissection repair consists of ascending aortic resection, aortic root and arch repair/replacement. This proximal strategy results in 30% distal re-operations for dissecting aneurysm. This report tests whether antegrade aortic stent-grafting during acute Debakey I dissection repair will obliterate the false lumen in the stented descending thoracic aorta (DTA), decreasing future distal aortic aneurysms without increasing surgical risk.

**Methods:** Debakey type I dissections between June 2005 and December 2007 were reviewed. 42 patients underwent standard open repair, with 35 undergoing thoracic stent-grafting via the open arch. Arch repairs were performed with a combination of retrograde cerebral and selective antegrade perfusion.

**Results:** Mean follow-up was 12.8 months. Hospital mortality was 5/35 (14%) for stented, and 6/42 (14%) for standard patients. Post operative strokes were 1/35 (3%) in stented vs 4/42 (10%) in standard repairs (p = NS) despite longer circulatory arrest times in the stented group: 60±13 min. vs 41±18 min. ($p<0.0001$). Transient paraparesis was 3/35 (9%) in stented vs 1/42 (2%) in standard group (p=NS) with no permanent deficits. Technical success (stented DTA dissection obliteration) was 23/29 (79%) in surviving patients with 7/29 (24%) requiring additional endovascular re-intervention to achieve obliteration. Open TAAA repairs were 0/30 in stented group and 4/36 (28%) in standard group (p= 0.083).

**Conclusions:** Antegrade stent graft deployment during acute Debakey I dissection repair is a safe method to obliterate the residual thoracic false lumen. Endovascular re-interventions were well tolerated. Proximal descending thoracic aorta stenting gives equal short term results and lower morbidity and mortality during follow-up.

Ⓓ Relationship Disclosure

* STSA Member

**Financial Disclosure:** Joseph Bavaria – Consultant with W.L. Gore and Assoc. Inc.

**Financial Disclosure:** Marc Moon – Speaker with Edwards Lifesciences

**Regulatory Disclosure:** Content refers to the FDA approved use of Gore TAG's off-label use for treatment of aortic dissection

**NOTES**

## 25. Midterm Results for Endovascular Repair of Complicated Acute and Chronic Type B Aortic Dissection.

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**Authors:** D Cyrus J Parsa[1], D Jacob N Schroder[1], D Richard L McCann[1], D *G Chad Hughes[1]

**Author Institution:** [1]*Duke University Medical Center, Durham, NC, United States*

**Discussant:** *V. Seenu Reddy, San Antonio, TX

**Objectives:** While thoracic endovascular aortic repair (TEVAR) has proven effective in the treatment of descending thoracic aneurysms, its utilization for the management of Type B aortic dissection remains controversial. We present our results with TEVAR for complicated acute (<2 weeks from symptom onset) and chronic Type B aortic dissection.

**Methods:** From 3/05 (date of FDA approval of Gore TAG device) to present, 153 TEVAR procedures were performed at our institution. Of these, n=50 patients (37%) underwent TEVAR for the management of acute (n=13) or chronic (n=37) Type B dissection and form the basis of this report. Indications for surgery in acute dissection included rupture or impending rupture (n=6) and malperfusion syndromes (n=7). For chronic dissections, surgery was performed for aneurysmal degeneration (n=37).

**Results:** Primary technical success was 100%; for acute dissection patients, there were no amputations and malperfusion was reversed in all cases. 30-day rates of death, stroke, and permanent paraplegia/paresis were 2% (n=1), 0%, and 4% (n=2), respectively. Mean f/u is 14.2 ± 10.0 months. There are no late aortic-related deaths. 1 patient required late conversion to open repair. Endoleak (any type) incidence requiring re-intervention was 14% (n=7).

**Conclusions:** This series, representing the largest reported single-center experience of TEVAR for complicated Type B dissection, demonstrates that endovascular repair is safe and effective at midterm f/u. It effectively reverses malperfusion and protects from aortic rupture. However, TEVAR for dissection does appear to require more secondary interventions than conventional open reconstruction. Longer term f/u is needed to determine the durability of this approach.

**Regulatory Disclosure:** Content refers to Gore TAG Endovascular Graft's off-label use in descending thoracic aortic dissection

D Relationship Disclosure

**NOTES**

## 26. Early Results of Valve-Sparing Aortic Root Replacement in High-Risk Clinical Scenarios

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**Authors:** Faraz Kerendi[1], *Robert A. Guyton[1], *Edward P. Chen[1]

**Author Institution:** *[1]Emory University School of Medicine, Atlanta, Georgia, United States*

**Discussant:** John Ikonomidis, Charleston, SC

**Objectives:** The feasibility of valve-sparing aortic root procedures (David) in certain high-risk situations has been questioned. We sought to determine the efficacy of the David procedure in the following high-risk subgroups: acute type A dissection, severe aortic insufficiency (AI) and reoperations.

**Methods:** From 2005 through 2007, 161 root replacements were performed, 88 of which were for the above criteria: 54 root replacements (Bentall) and 34 David procedures. The reimplantation technique was used in all 34 David patients with 5 requiring aortic cusp repair. Outcomes were compared using a Chi-square analysis.

**Results:** Preoperative comorbidities were similar between groups. A similar proportion of patients had severe AI [62.9% (34/54) Bentall vs. 67.6% (23/34)David, p=0.827)] and underwent reoperations [33.3%(18/54) Bentall vs. 20.6%(7/34) David, p=0.295). David patients were more likely to have type A dissections [24.1%(13/54) Bentall vs. 47.1%(16/34) David, p=0.045]. In-hospital mortality was greater in Bentall patients [14.8%(8/54)] compared to David [5.8%(2/34), p=0.305]. There were no differences with respect to postoperative stroke, renal failure, or respiratory failure. Pre-discharge echocardiogram in the surviving 32 David patients demonstrated no AI in 23 patients and trace/mild AI in 9. Freedom from AVR at a mean follow-up of 13.6 (range 1-34) months was 94%(30/32). One patient required AVR because of endocarditis at 9 months and one developed severe AI 13 months postoperatively.

**Conclusions:** Valve-sparing aortic root replacement can be performed effectively in the setting of acute dissection, severe AI, and reoperations with acceptable early results. Long-term follow-up is needed to determine the durability of repair in these high-risk groups.

D Relationship Disclosure

**NOTES**

## 27. Targeted Renal Therapy in High-Risk Cardiac Surgery: Early Safety and Feasibility with a Novel Treatment for Renal Function Preservation During Coronary Artery Bypass Grafting

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**Authors:** D *David E Allie[1], Chris J Hebert[1], Mitchell D Lirtzman[1], Charles H Wyatt[1], D Craig M Walker[1]

**Author Institution:** *[1]Cardiovascular Institute of the South, Lafayette, Louisiana, United States*

**Discussant:** *Michael DiMaio, Dallas, TX

**Objectives:** Renal insufficiency (RI) and glomerular filtration rate (GFR) are associated with adverse outcomes after CABG. Worsening RI is reported in 2-30% post CABG patients, with increased perioperative and 1-2 year mortalities. Targeted renal therapy (TRT) is an emerging therapy where bilateral intrarenal artery infusion of fenoldopam (FEN), a selective dopamine-1 agonist and renal arteriolar vasodilator, is delivered percutaneously by the Benephit Infusion System. There are no validated methods for renal preservation during CABG. TRT increases the GFR by 25% while GFR is decreased 25% during extracorporeal circulation.

**Methods:** Between May 2005 - April 2007, TRT with FEN 0.2 ? (0.4 mcq/kg/min) was utilized in 64 high-risk CABG patients in the Be-RITe Cardiovascular TRT registry (total cardiovascular interventional and surgical enrollment = 560). Baseline characteristics include: Creatinine (Cr) = 1.7 ± 0.68 (mg/dL), Cr clearance (CrCl) = 57.7 ± 31.9 (cc/min) and ejection fraction = 39.7% ± 13.1. Procedural characteristics include: TRT duration = 391.4 minutes, CABG length = 267 ± 43.5 minutes and cross-clamp time = 88.9 ± 35.6 minutes.

**Results:** There were no perioperative mortalities or device complications. Dialysis was required in 1/64 (1.5%) patients (predicted rate = 7.1%). Worsening renal function occurred in 9/64 (14%) (predicted = 40%) at 48 hours defined as increasing Cr > 25%. CrCl remained unchanged or improved at 48 hours in 57/64 (89%).

**Conclusions:** TRT is safe and feasible during high-risk CABG and may improve renal function preservation. Multicenter, randomized validation data is warranted to access efficiency.

**Financial Disclosure:** David Allie – Stockholder - Scientific Advisory Board and Consultant to Flowmedica

**Financial Disclosure:** Craig Walker – Consultant to Flowmedica

D Relationship Disclosure

**NOTES**

## 28. The Impact of Off-Pump Coronary Artery Bypass Surgery on Postoperative Renal Function

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**Authors:** Ashwin Shahir[1], Ly-Mee Yu[1], *Cliff K Choong[2], M Navaratnarajah[1], Yasir Abu-Omar[2], David P Taggart[1]

**Author Institution:** *[1]John Radcliffe Hospital, The University of Oxford, Oxford, England, United Kingdom; [2]Papworth Hospital, The University of Cambridge, Cambridge, England, United Kingdom*

**Discussant:** * John Puskas, Atlanta, GA

**Objectives:** A number of risk factors have been recognised for post-operative renal dysfunction following On-Pump Coronary Artery Bypass Surgery (CABG). There are however few studies that have evaluated the potential reno-protective effects of Off-Pump CABG in the presence of other confounding risk factors. The aim of this study was to determine if Off-Pump CABG reduces risk of renal injury.

**Methods:** Serum creatinine values (pre-operatively, day 1, 2 and 4 post-operatively) and other clinical data were prospectively collected on 1580 consecutive patients who underwent first time CABG from 2002 to 2005. Creatinine clearance was calculated using Cockcroft and Gault equation. The effect of On-Pump vs. Off-Pump CABG on renal function was analysed, adjusting for age, gender, diabetes mellitus, left ventricular (LV) function and preoperative creatinine clearance, using multiple regression analysis.

**Results:** 1145 (73%) patients underwent On-Pump and 435 (27%) underwent Off-Pump CABG. The two groups were similar with respect to age, gender and diabetes. 274 (17%) patients were females and 274 (17%) patients had diabetes. Multivariate analysis demonstrated significantly lower creatinine clearance postoperatively in patients with diabetes ($P<0.001$) and advanced age ($P<0.001$). The On-Pump group had significantly lower postoperative creatinine clearance in comparison to the Off-Pump CABG group ($P= 0.01$). The effect remained consistent after adjusting for potential factors (age, diabetes, gender, LV function and preoperative creatinine clearance) in the multivariate analysis (see Table).

**Conclusions:** Off-pump surgery is associated with a reduction in postoperative renal injury.

D Relationship Disclosure

| | Multivariable analysis* | |
|---|---|---|
| Outcome | Estimated difference (95%CI) | P-value |
| On pump vs Off pump | -1.98 (-3.70, -0.25) | 0.03 |
| Age (per year) | -0.46 (-0.57, -0.35) | <0.0001 |
| Female vs male | 2.29 (0.26, 4.32) | 0.03 |
| Diabetes Mellitus | -3.90 (-5.93, -1.86) | <0.001 |
| LVF | | 0.22 |
| Poor vs Moderate | 1.59 (-1.17, 4.34) | 0.26 |
| Poor vs Good | 2.29 (-0.37, 4.95) | 0.09 |
| * All analyses were adjusted for baseline creatinine clearance | | |

**Results from multiple regression analysis**

**NOTES**

## Friday - Third Scientific Session A – General Thoracic Breakout

### 29. Which Type of Diffusing Capacity of the Lung for Carbon Monoxide (DLCO) Percent Predicted Value is the Best Predictor of Morbidity and Mortality After Pulmonary Resection?

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**Authors:** Ayesha Bryant[1], D *Robert J Cerfolio[1]

**Author Institution:** [1]*University of Alabama at Birmingham, Birmingham, AL, United States*

**Discussant:** *Mark Ferguson, Chicago, IL

**Objectives:** Although the percent diffusing capacity of the lung for carbon monoxide (DLCO%) is a standard part of the pulmonary function tests (PFT?s) obtained prior to elective pulmonary resection, the specific type of DLCO% that serves as the best predictor of morbidity is unknown. The objective of this study was to compare the various DLCO's and other PFTs to identify the best predictor of morbidity and mortality after pulmonary resection.

**Methods:** This is a retrospective cohort study of a prospective database of patients who underwent PFT?s prior to pulmonary resection. Patients with cardiac disease or those who underwent neoadjuvant chemoradiotherapy therapy were eliminated. Forced expiratory volume in one second (FEV1%), minute ventilation volume (MVV%), and three types of DLCO% were obtained: DLCO%, DLCO-corrected% and DLCO / alveolar volume (DLCO/VA%).

**Results:** There were 668 patients (414 men) between 1/2005-12/2007. Types of pulmonary resection were: wedge resection in 142 patients, segmentectomy in 104, lobectomy in 405, and pneumonectomy in 17. Morbidity occurred in 193 (29%) patients and was respiratory in 87. Operative mortality was 13 (2.1%). FEV1% ($p=0.004$) and DLCO/VA% ($p <0.001$) were predictors of respiratory morbidity.

**Conclusions:** Although previous literature suggests that DLCO% is the best predictor of operative morbidity and mortality after elective pulmonary resection, DLCO/VA% maybe a better predictor. Amongst the different types of DLCO's reported, the DLCO/VA% was the best predictor of operative morbidity. This information may help patient selection, guide pre-operative risk stratification and shed light on some of the confusion of the usefulness of the different types of DLCO's.

**Financial Disclosure:** Robert J. Cerfolio – Speaker or consultant with Eplus Healthcare, Ethicon, Neomend, Millicore, Telefelx, OSI Pharmaceutical, Closure, Medela Johnson and Johnson and Deknatel

D Relationship Disclosure

**NOTES**

## 30. Choice of First Intervention is Related to Outcomes in the Management of Empyema

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**Authors:** Curtis J. Wozniak[1], Douglas E. Paull[2], Jazbieh E Moezzi[2], Rosalyn P Scott[2], *Mark Peter Anstadt[1], Virginia V York[1], Alex G. Little[1]

**Author Institution:** *[1]Wright State University, Dayton, OH, United States; [2]Veterans Administration Medical Center, Dayton, OH, United States*

**Discussant:** * Paul Schipper, Portland, OR

**Objectives:** The purpose of this study was to determine if the choice of first procedure: drainage (tube thoracostomy, pigtail catheter) or surgery (VATS, thoracotomy) predicts outcome in the management of empyema.

**Methods:** Data from 106 consecutive patients with empyema [post-pneumonic (66 patients), postoperative (16 patients), trauma (13 patients), other (11 patients)] were collected. Primary outcome was death. Predictor variables analyzed included age; delay in diagnosis; alcohol abuse; Karnofsky performance status (KPS); Charlson co-morbidity index (CMI); serum albumin; presence of malignancy; Apache II score; loculations on CT scan; pleural fluid pH; and choice of first procedure (drainage vs. surgery).

**Results:** Success rates for pigtail drainage, tube thoracostomy, VATS, and thoracotomy were 45% (5/11), 41% (15/37), 82% (14/17), and 88% (32/35), respectively. Univariate predictors of hospital death included malignancy, Apache II score, KPS, CMI, drain as first procedure, and failure of first procedure. In a multivariate analysis, KPS [(KPS <70 vs. > 70), Odds ratio=11.1, 95% confidence interval 1.11-127, p=0.04], CMI [(CMI > 2 vs. < 2) 11.1, 1.57-78.2, p=0.01] and failure of the first procedure [41.5, 5.12-336, p=0.0004] were independent predictors of hospital death. Failure of the first procedure was less likely if VATS or thoracotomy were initially employed [0.09, 0.03-0.26, p=0.000005] and more likely if drainage was utilized [10.6, 3.85-29.2, p=0.000005].

**Conclusions:** The choice of first procedure is critical in the outcome for treatment of empyema, even when outcome is adjusted for confounding variables. Early VATS or thoracotomy as initial therapy for empyema is associated with better outcomes including reduced hospital mortality.

Ⓓ Relationship Disclosure

**NOTES**

## 31. Myotomy for Megaesophagus: The Risk for Future Esophageal Resection

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**Authors:** Shady M. Eldaif[1], Christopher J. Mutrie[1], W. Caleb Rutledge[1], Edward Lin[1], *Seth D. Force[1], *Joseph I. Miller Jr[1], *Kamal A. Mansour[1], D *Daniel L. Miller[1]

**Author Institution:** *[1]Emory University School of Medicine, Atlanta, Georgia, United States*

**Discussant:** *Keith Naunheim, St. Louis, MO

**Objectives:** Modified Heller myotomy is the mainstay treatment for achalasia with proven long-term success. However, many advocate esophageal resection and forgoing myotomies in patients with massive dialated esophagus (megaesophagus). The purpose of this study is to determine the myotomy failure rate in patients with megaesophagus (ME).

**Methods:** Retrospective review of all patients with achalasia who underwent a myotomy from 1996 to 2006. The patients were divided into 3 groups (mild - I, moderate - II and megaesophagus - III) based on their preoperative degree of esophageal dilation. End point for myotomy failure was persistent symptoms requiring any intervention.

**Results:** The preoperative characteristics were comparable except for the ME patients had greater duration of symptoms. Median follow up was 37 months (range, 8 - 144). Group I had 162 patients with seven failures (4.3%) requiring intervention. Group II had 74 patients with four (5.4%) failures and Group III had 36 patients, 5 (13.9%) required interventions. (Table 1)

| Preoperative Symptoms and Treatment | I | II | III | P Value |
|---|---|---|---|---|
| Symptom duration ± SD (months) | 72 ± 84 | 84 ± 84 | 120 ± 98 | 0.02* |
| Previous dilatation (%) | 85 (53) | 50 (68) | 24 (67) | NS |
| Previous myotomy (%) | 7 (4) | 8 (11) | 5 (14) | NS |
| Previous foregut surgery (%) | 8 (5) | 4 (5) | 2 (6) | NS |
| Total pretreatment procedures | 100 (62) | 62 (84) | 31 (87) | NS |
| Postoperative Treatment | | | | |
| Dilatation (%) | 4 (3) | 1 (1) | 2 (6) | NS |
| Redo myotomy (%) | 2 (1) | 1 (1) | 0 (0) | NS |
| Esophagectomy (%) | 1 (0.6) | 2 (3) | 3 (8) | 0.02* |
| Total treatment failures (%) | 7(4) | 4 (5) | 5 (13) | NS |

**Conclusions:** The degree of esophageal dilatation associated with achalasia does not influence treatment success. The majority of patients (> 90%) with megaesophagus do not require an esophagectomy. Therefore, myotomy should be the initial treatment for patients with megaesophagus secondary to achalasia.

**Financial Disclosure:** Daniel Miller – Consultant with Ethicon Endosurgery and Synovis, Inc.; Speaker with Power Medical, Inc.

D Relationship Disclosure

**NOTES**

## 32. Robot-Assisted Laparoscopic Belsey Fundoplasty for Gastroesophageal Reflux Disease

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**Authors:** *Farid Gharagozloo[1], *Marc Margolis[1], Barbara Tempesta[1], Eric Strother[1]

**Author Institution:** *[1]Washington Institute Of Thoracic And Cardiovascular Surgery and The George Washington University Medical Center, Washington, D.C., United States*

**Discussant:** *Seth Force, Atlanta, GA

**Objectives:** Belsey Mark IV fundoplasty is associated with less gas bloat and dysphagia compared to the Nissen wrap. A laparoscopic Belsey fundoplasty may represent an alternative to the Nissen procedure. By virtue of 3-D visualization, greater maneuverability, robot assistance may enable a laparoscopic Belsey Mark IV procedure.

**Methods:** From 1/04 to 8/07, 73 patients (39 men, 34 women, mean age 38 +/- 9 years) with gastroesophageal reflux disease underwent robot-assisted laparoscopic Belsey fundoplasty. All patients underwent preoperative manometry and 24 hour pH study. The procedure was performed through five laparoscopic ports. The hiatus was closed anteriorly and posteriorly. The esophagus was intussuscepted into the stomach by 2 cm for 270 degrees. Results were assessed by preoperative and postoperative endoscopy, manometry, 24 hour pH study, UGI study, subjective symptom questionnnaire, and objective Viscik grading.

**Results:** Indications: intractability (68), pulmonary complications (5). Median OR time : 3 hours. Median hospitalization : 1 day. Mean follow up was 28 months. Subjective symptomatic improvement:(maximum 12/patient) decreased from 8.6 +/- 0.6 to 0.6 +/- 0.2 ($p<0.05$). 59 patients scored 0 and were completely free of reflux symptoms. 91% were Viscik I or II. 69 patients (94%) had transient postoperative dysphagia which resolved by the third postoperative week. There was no gas bloat or long term dysphagia. Recurrent hiatal hernia was seen in 4 pts. (5%).

**Conclusions:** Robot-assisted laparoscopic Belsey fundoplasty is feasible. It is associated with a low incidence of gas bloat and dysphagia. Although greater experience is necessary it may represent an alternative to the Nissen procedure.

D Relationship Disclosure

**NOTES**

## 33. Reoperative Sympathectomy for Severe Refractory or Recurrent Palmar Hyperhidrosis

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**Authors:** *Richard K Freeman[1], Jaclyn M Van Woerkom[1], Amy Vyverberg[1], *Anthony J Ascioti[1]

**Author Institution:** *[1]St Vincent Hospital, Indianapolis, Indiana, United States*

**Discussant:** *Mark Krasna, Towson, MD

**Objectives:** Sympathectomy for severe palmar hyperhidrosis occasionally fails. This investigation reviews our experience with reoperative thoracoscopic sympathectomy (RS) in patients with refractory or recurrent palmar hyperhidrosis after sympathectomy.

**Methods:** A retrospective analysis of patients undergoing (RS) for palmar hyperhidrosis was conducted. Comparison is made to all patients undergoing an initial thoracoscopic sympathectomy (TS) for palmar hyperhidrosis at our institution during the same time period.

**Results:** Over six years, 40 patients underwent bilateral (32) or unilateral (8) (RS) for refractory (35) or recurrent (5) palmar hyperhidrosis. During the same time period 321 patients underwent bilateral TS for palmar hyperhidrosis. Previous methods of sympathectomy included percutaneous ablation (25) TS (10), axillary thoracotomy (3), and a posterior trans-thoracic approach (2). Twenty-two RS and 11 TS patients required a third port to complete the procedure because of pleural adhesions (p=<0.0001). Twenty-three RS and eleven TS patients required postoperative pleural drainage (p=<0.0001). Mean length of stay was 1.6 versus < 1 day for the RS and TS groups respectively (p=0.0003). Alleviation of palmar hyperhidrosis occurred in 38 RS and 316 TS patients (p=0.18). Compensatory sweating was identified in 21 RS and 101 TS patients (p=0.01).

**Conclusions:** RS produced a rate of improvement comparable to TS. RS however is associated with an increased need for postoperative pleural drainage, longer hospital stay, a more difficult operative procedure and a higher rate of compensatory sweating than TS. RS should be considered a safe and effective option for patients with palmar hyperhidrosis who remain severely symptomatic following a sympathectomy.

D Relationship Disclosure

**NOTES**

## 34. Analysis of Cervical Esophagogastric Anastomotic Leaks After Transhiatal Esophagectomy: Risk Factors, Presentation, Detection

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**Authors:** David T Cooke[1], Giant C Lin[1], *Christine L Lau[1], Linda Zhang[1], Ming-Sing Si[1], Julia Lee[1], Andrew C Chang[1], Allan Pickens[1], Mark B Orringer[1]

**Author Institution:** *[1]University of Michigan, Ann Arbor, MI, United States; [2]University of Virginia, Charlottesville, VA, United States*

**Discussant:** *Wayne Hofstetter, Houston, TX

**Objectives:** Transhiatal esophagectomy (THE) with cervical esophagogastric anastomosis (CEGA) is a common approach in patients requiring esophagectomy. CEGA leak (CEGAL) can prolong hospital stay and lead to other complications. Factors for developing CEGALs, their presentation, and the value of a routine post-operative barium swallow (BaS) in detecting CEGALs and other complications were analyzed.

**Methods:** This single institution retrospective study utilized medical records and an Esophagectomy Database to assess results in 1,123 patients who underwent THE and a CEGA, 240 for benign disease and 883 for cancer, between January 1996 and December 2006.

**Results:** 122 (13.8%) cancer and 23 (9.8%) benign disease THE patients developed CEGALs. Logistic regression analysis identified an increasing number of pre-operative co-morbidities ($p<0.01$) and post-operative arrhythmia ($p<0.01$) as risk factors for CEGALs, and a side-to-side stapled CEGA compared to manually sewn as protective against CEGALs ($p<0.01$). For cancer patients, higher pathologic stage disease ($p<0.01$) was a risk factor for CEGALs. 90.2% of CEGALs occurred less than or equal to post-operative day 10, and cervical wound drainage (64.0%) was the most common presenting symptom. 1,040 BaSs identified post-operative complications and influenced outcome in 35 patients (3.4%), including 19 radiographic CEGALs, 11 small bowel obstructions, 3 gastric torsions, 1 diaphragmatic hernia, and 1 delayed pyloric emptying.

**Conclusions:** An increasing number of pre-operative co-morbidities, advanced pathologic stage and post-operative arrhythmia are CEGAL risk factors, and a side-to-side stapled CEGA is protective. While a BaS identifies few post-operative complications, it provides quality control, and its use after THE with CEGA is recommended.

Ⓓ Relationship Disclosure

**NOTES**

## Friday – Third Scientific Session A – Congenital Breakout

### 35. Biventricular Repair of Complete Atrioventricular Septal Defect with Double Outlet Right Ventricle

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**Authors:** Eric J Devaney[1], Jennifer C Hirsch[1], Richard G Ohye[1], *Edward L Bove[1]

**Author Institution:** [1]*University of Michigan, Ann Arbor, MI, United States*

**Discussant:** *James Quintessenza, St. Petersburg, FL

**Objectives:** The combination of complete atrioventricular septal defect (CAVSD) with double outlet right ventricle (DORV) is a rare lesion which presents a challenge for surgical repair. This report describes our surgical approach and results in 12 patients undergoing biventricular repair of CAVSD/DORV.

**Methods:** A retrospective analysis was performed for all patients undergoing biventricular repair of CAVSD/DORV between 1991 and 2007. Patients with Tetralogy of Fallot/CAVSD were excluded from analysis. Early and actuarial outcomes were evaluated using chi-square for categorical variables and Wilcoxon rank sum for ordinal variables.

**Results:** The median age at operation was 16.5 months. Heterotaxy syndrome was present in seven patients and three had concurrent total anomalous pulmonary venous connection (TAPVC). Four patients underwent complete primary repair, while eight underwent one or more prior operations (most frequently a shunt, pulmonary artery band, or repair of TAPVC). Enlargement of the ventricular septal defect was required in seven patients, and a right ventricle to pulmonary artery conduit was placed in nine. There was one hospital death, one late death, and no episodes of heart block. Among survivors, followup was complete with a median followup of 60 months. The presence of heterotaxy with TAPVC was associated with mortality ($P < 0.05$).

**Conclusions:** Although technically challenging, the repair of CAVSD/DORV can be accomplished with acceptable early results. Heterotaxy syndrome with concurrent TAPVC represented the strongest identified risk factor for mortality.

🄳 Relationship Disclosure

* STSA Member

**NOTES**

## 36. Minimally Invasive, Intrapericardial Implantable Cardioverter Defibrillator Coil Array System: A Novel Approach to Ventricular Tachyarrhythmia Therapy in Children

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**Authors:** D *Tain-Yen (T-Y) Hsia[1], D Philip Saul[1], D John Reed[1], D *Scott M. Bradley[1]

**Author Institution:** *[1]Medical University of South Carolina, Charleston, SC, United States*

**Discussant:** *James Jaggers, Durham, NC

**Objectives:** Current approaches to implantable cardioverter defibrillator (ICD) implantation remain challenging in children. Transvenous access may be limited due to patient size or anatomy, while epicardial patches require thoracotomy. We present an alternative approach: placement of a coil array ICD lead within the pericardial space.

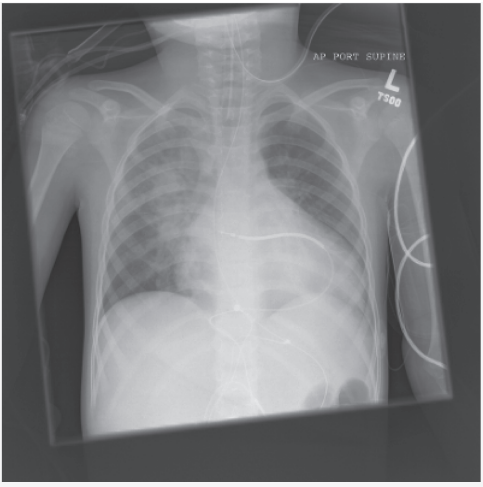
**Methods:** From 8/2005 to 2/2008, five children underwent intrapericardial placement of an ICD coil system. Diagnoses were: Brugada syndrome, Long QT syndrome, dilated cardiomyopathy, hypertrophic cardiomyopathy, and pulmonary atresia with intact ventricular septum. Median age was 5 years(range 1-17); weight was 22 kg (range 8 - 62). All patients had inducible ventricular tachycardia/fibrillation (VT). Implantation was performed through a small subxiphoid incision in 4 patients, and a limited left lateral thoracotomy in 1. Coil array was actively fixated in the transverse sinus under fluoroscopic guidance.

**Results:** All implantations were successful without perioperative complications (Fig.1). There were no early or late deaths. None required revision. All implants had acceptable defibrillation thresholds (mean: 15 Joules, range: 10-25). Defibrillation lead impedance remained stable in all. Three patients had appropriate ICD discharges during followup. One developed nearly incessant VT at home leading to fourteen appropriate discharges, all of which successfully cardioverted the rhythm to sinus. He subsequently underwent mechanical cardiac assist device implantation as a bridge to transplantation.

**Conclusions:** Intrapericardial placement of an ICD coil system can be safely and successfully performed through a minimally invasive subxiphoid approach in small infants and children. This novel ICD configuration demonstrates excellent performance, and provides an efficacious approach to ventricular tachyarrhythmia therapy in pediatric patients.

**Regulatory Disclosure:** Content refers to the FDA approved Medtronic Sprint AICD lead's off-label use for Epicardial placement

D Relationship Disclosure




**NOTES**

## 37. Late Outcome After Multiple Reoperations Following Initial Repair of Complete Atrioventricular Septal Defect

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**Authors:** John Stulak[1], Harold Burkhart[1], Joseph Dearani[1], *Hartzell Schaff[1], Frank Cetta[1], Roxann Barnes[1], Francisco Puga[1]

**Author Institution:** [1]*Mayo Clinic College of Medicine, Rochester, MN, United States*

**Discussant:** Carl Backer, Chicago, IL

**Objectives:** Excellent surgical results have been reported after repair of complete atrioventricular septal defects (AVSD), however, 5-10% require reoperation. We sought to examine causes leading to reoperation and evaluate long term outcome.

**Methods:** Between 1972 and 2007, 50 pt (26 male) underwent reoperation at our institution after prior repair of AVSD (median interval: 15 months, range: 3 days to 29 yrs). Median age at initial repair was 1yr (range: 33 days to 18 yrs) and at first reoperation was 4.5yrs (range: 53 days to 38 yrs). Indications for first reoperation included left atrioventricular valve (LAVV) regurgitation in 41 pts, subaortic stenosis in 5, and LAVV stenosis, residual ASD, RPA stenosis, and aortic coarctation in 1 each.

**Results:** The first reoperation included LAVV repair in 21 pts and replacement in 21, modified Konno procedure in 3, septal myectomy in 2, and pulmonary confluence reconstruction, coarctation repair, and ASD re-repair in 1 each. After LAVV repair (n=21), 5 pts required a 2nd reoperation for severe LAVV regurgitation (n=4) and severe LAVV stenosis (n=1). After LAVV replacement (n=21), 6 pts required a 2nd reoperation for LAVV prosthetic obstruction (n=4) and LAVV paravalvular leak (n=2). The majority of reoperations (56/75) were for LAVV pathology (75%). There were 2 early deaths (4%) after first reoperation. Freedom from subsequent reoperation was 63%, 48%, and 42% at 5, 10, and 15 yrs, respectively. During late follow-up (median: 9.5 yrs, maximum 30 yrs), actuarial survival was 91%, 91%, and 86% at 5, 10, and 15 yrs, respectively.

**Conclusions:** The most common indication for reoperation after complete AVSD repair is LAVV regurgitation. At first reoperation, LAVV re-repair may not be possible, but offers good durability and should be performed if feasible; LAVV replacement does not preclude additional reoperations. Long term survival is very good despite the potential need for multiple reoperations.

D Relationship Disclosure

**NOTES**

## 38. Current Expectations for Surgical Repair of Isolated Ventricular Septal Defects

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**Authors:** *Jeffrey S. Heinle[1], Brandi E. Braud[1], David L. S. Morales[1], E. Dean McKenzie[1], *Charles D. Fraser, Jr.[1]

**Author Institution:** *[1]Texas Childrens Hospital, Houston, TX, United States;*

**Discussant:** *Andrew Fiore, St. Louis, MO

**Objectives:** Ventricular septal defect (VSD) is the most commonly recognized congenital heart defect. With the development of device closure of intracardiac defects, we sought to evaluate current expectations for surgical closure of isolated VSD.

**Methods:** Between 1/24/00 and 12/18/06, 182 patients underwent isolated VSD repair at median age 9 months (range 20d-18yrs) and weight 7 kg (range 2-66kg). VSD type: 156 perimembranous(86%), 19 supracristal(10%), 5 inlet(3%), and 2 muscular(1%). 86 patients(47%) had evidence of congestive heart failure or failure to thrive preoperatively. 28 patients(15%) had aortic valve cusp prolapse; 60(33%) had genetic abnormalities.

**Results:** Incidence of significant postoperative complications was extremely low. No patient had hemodynamically significant residual VSD or underwent reoperation for residual VSD. None had complete heart block requiring permanent pacing. No deaths occurred within 30 days of operation. 3 late deaths occurred, none cardiac related. Median postoperative hospital length of stay was 5 days (range 2-187d). In the immediate postoperative period, 1 patient(0.5%) required intervention for pericardial effusion; 2(1%) underwent reoperation for bleeding. No patients were discharged on antiarrhythmic agents, had complete heart block, or required permanent pacing. At mean follow-up 2.0 ± 1.9yrs, 99% (178/179) of patients were asymptomatic from a cardiac standpoint. None developed greater than mild new onset tricuspid valve regurgitation. No aortic valve injuries occurred.

**Conclusions:** Surgical closure of isolated VSD is a safe, effective therapy. Risk of death, complete heart block, and reoperation is minimal. As new technologies for VSD closure evolve, results such as these should be considered the gold standard for isolated VSD closure.

D Relationship Disclosure

**NOTES**

## 39. The Impact of Ventricular Anatomy on Morbidity and Mortality in the Modern Era of Staged Fontan Palliation for Single Ventricle Congenital Heart Disease

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**Authors:** *James S. Tweddell[2], Matthew Nersesian[2], Kathleen A. Mussatto[2], Nancy S. Ghanayem[2], Pippa Simpson[2], Michael Mitchell[2], Andrew N. Pelech[2], R. Marla[2], George M. Hoffman[2]

**Author Institution:** *[1]Medical College of Wisconsin, Milwaukee, WI, United States; [2]Childrens Hospital of Wisconsin, Milwaukee, WI, United States*

**Discussant:** *Robert Jaquiss, Little Rock, AR

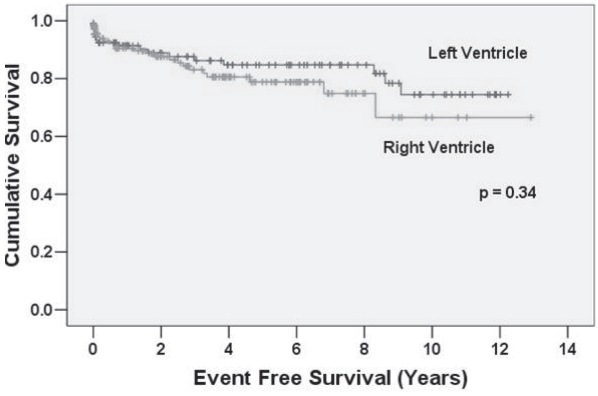
**Objectives:** This study compares morbidity and mortality in patients with left (LV) versus right (RV) ventricular anatomy after staged-Fontan palliation.

**Methods:** A cross-sectional evaluation of 256 consecutive subjects after staged-Fontan palliation (1/1994 to 6/2007). Failure was defined as death, transplant, or takedown. Event-free survival was defined as duration of follow-up without NYHA class 3-4, pacemaker, protein losing enteropathy, stroke, or thrombus.

**Results:** Actuarial survival for the group was 97±1%, 96±1%, and 94±2% at 1, 5, and 10 years. Median duration of follow-up was 3.9 years (range 0-13 years). Dominant ventricular morphology was LV in 113(44%), RV in 142(56%), and undifferentiated in 1. Surgery prior to Fontan included bidirectional cavopulmonary shunt in all and Norwood in 123(48%). Mortality was 0.9% early and 0.9% late in LV group; 2.8% early and 3.5% late in RV group (p=0.2). Fontan takedown occurred in 2(1.8%) patients with LV anatomy. Transplant occurred in 1 LV (9.3 years) and 1 RV (4.7 years) patient. RV patients were younger and smaller at Fontan (p<0.03). Duration of ventilation, pleural drainage, and hospitalization were similar between groups. LV vs. RV event-free survival at 1, 5, and 10 years was 91±3% vs. 91±3%, 85±4% vs. 79±4%, and 75±7% vs. 67±9% (p=0.3). LV vs. RV freedom from failure at 1, 5, and 10 years was 97±2% vs. 96±2%, 97±2% vs. 91±3%, and 92±4% vs. 91±3% (p=0.3).

**Conclusions:** In the modern era of staged-Fontan palliation, there is an ongoing hazard for morbid events. However, we could not identify a difference for LV vs. RV patients.

Ⓓ Relationship Disclosure


Cumulative Survival
1.0
0.8
0.6
0.4
0.2
0.0
Left Ventricle
Right Ventricle
p = 0.34
0
2
4
6
8
10
12
14
Event Free Survival (Years)

**NOTES**

## 40. Minimizing Bleeding Associated with Mechanical Circulatory Support Following Open Pediatric Cardiac Surgery

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**Authors:** Jennifer Emmert[1], Robert Mazor[1], David Michael McMullan[1], Harris Baden[1], Howard Jeffries[1], Justin Linam[1], Andrea Morscheck[1], Lester Permut[1], Gordon A. Cohen[1]

**Author Institution:** *[1]Seattle Childrens Hospital, Seattle, WA, United States; [2]University of Washington, Seattle, WA, United States*

**Discussant:** *Victor Morell, Pittsburgh, PA

**Objectives:** Mechanical circulatory assist (MCA) is sometimes necessary following open cardiac surgery (OCS). The use of ECMO immediately after OCS can be associated with catastrophic bleeding. We employ a centrifugal pump system (CPS) that does not require early systemic anticoagulation. This study compares post-operative bleeding between ECMO and CPS in patients placed on MCA within 24 hours of OCS.

**Methods:** Between 11/2002 and 2/2007, 25 patients required MCA within 24 hours following OCS. Fourteen patients were placed on ECMO and 11 patients were placed on CPS. Medical records were reviewed retrospectively. Chest tube output following cannulation was recorded at hours 1, 2, 3, 4, 5, 6, 12, 24, 48, 72, 96. The two groups were compared for the following variables: RACHS-1 score, total MCA time, 30-day mortality, circuit-related complications, number of circuit changes, activated clotting time (ACT) and blood product administration. A non-paired t-test was used for comparisson.

**Results:** Patients on ECMO and CPS were of similar age ($p=0.32$) and body surface area ($p=0.46$). Patients on CPS had significantly less chest tube output over all hours studied (table 1). ACT was significantly higher during the first 12 hours of ECMO versus CPS. There was no statistical difference between ECMO and CPS with respect to the following: RACHS-1, support time, 30-day mortality, circuit-related complications and number circuit changes. Blood cell and product administration at 24 hours of support was significantly less ($p<0.05$) for patients on CPS (231 + 278ml total volume ) versus ECMO (721 + 779ml total volume) .

**Conclusions:** MCA can be provided without significant bleeding as a complication if a specialized circuit is utilized. This has important implications for the decision to use MCA in the immediate post-operative period in the face of ventricular failure. In addition, MCA can be used with a low incidence circuit related complications.

D Relationship Disclosure

| *Hour* | *ECMO cumulative Chest tube output Total (ml/kg)* | *CPS cumulative Chest tube output Total (ml/kg)* | *p-value* |
|---|---|---|---|
| ***1*** | 20.9 | 1.9 | ≤ 0.01 |
| ***2*** | 45.6 | 7.0 | ≤ 0.01 |
| ***3*** | 71.2 | 14.1 | ≤ 0.01 |
| ***4*** | 90.1 | 15.5 | ≤ 0.01 |
| ***5*** | 112.2 | 20.1 | ≤ 0.01 |
| ***6*** | 194.1 | 24.5 | ≤ 0.01 |
| ***12*** | 269.0 | 44.6 | ≤ 0.01 |
| ***24*** | 337.8 | 62.5 | ≤ 0.01 |
| ***48*** | 461.6 | 84.5 | ≤ 0.01 |
| ***72*** | 649.7 | 145.7 | ≤ 0.01 |
| ***96*** | 746.4 | 206.3 | ≤ 0.05 |

**NOTES**

# Friday – Third Scientific Session B – Cardiac Breakout

## 41. Trends in the Surgical Treatment of Mitral Valve Disease

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**Authors:** J. Scott Rankin[1], Ricardo E Orozco[1], Stephen M. Teague[1], Thomas S Johnston[1], A. Thomas McRae[1]

**Author Institution:** [1]*Centennial Medical Center and Vanderbilt University, Nashville, TN, United States*

**Discussant:** 🄳 *W. Randolph Chitwood, Greenville, NC

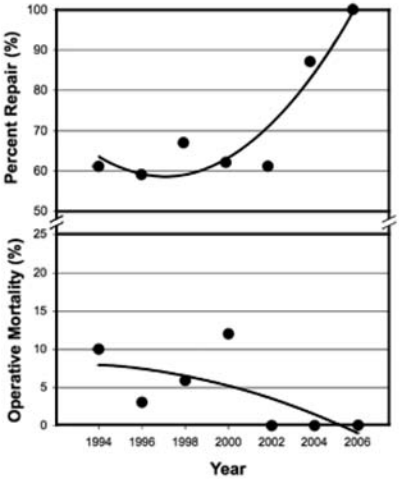
**Objectives:** Mitral repair has evolved so that 3 methods can address most pathologies: ring annuloplasty (RA) for annular disease, chordal replacement (CR) for chordal disease, and pericardial augmentation (PA) for leaflet disease. This study assessed the impact of increasing application of these methods on operative results over time.

**Methods:** Of 300 consecutive patients undergoing mitral procedures, 40% had prolapse, 21%-rheumatic, 15%-ischemic, 13%-pure annular dilatation, 7%-endocarditis, 2%-hypertrophic cardiomyopathy, and 2%-misc. All patients had RA. Prolapse was repaired with CR, and ischemic and annular dilatation with RA alone. Rheumatic, endocarditis, and hypertrophic cardiomyopathy were repaired with all 3 methods. Patients were divided into 2-year increments and also by repair versus replacement. Operative outcomes over time were assessed with binomial regression.

**Results:** Overall, 67% of all etiologies were repaired, and average operative mortality was 5%(3%-repair; 10%-replacement). Repair over time increased from 61%('93-'95) to 100% of all etiologies ('05-'07) (Figure;p=0.01). Over the same period, overall operative mortality fell from 3-12% in the '90's to 0% over the past 6 years. At present, surgical mortality for all forms of mitral disease is statistically indistinguishable from zero (Figure;p=0.5). Other variables, such as age, presentation status, and etiology were constant over the period. Repair reoperation rate has been 2-4%/10-years of followup.

**Conclusions:** With recent innovations, most mitral disease can be repaired with RA, CR, and PA . Operative mortality now is close to zero, and one factor may be increasing application of repair to all mitral pathologies. These data support the trend of increasing repair rates for all mitral valve disorders.

**Financial Disclosure:** W. Randolph Chitwood – Consultant with Edwards Lifesciences (Valves), Consultant with Intuitive Surgery (Robotics)


Percent Repair (%)
100
90
80
70
60
50
Operative Mortality (%)
25
20
15
10
5
0
1994
1996
1998
2000
2002
2004
2006
Year

**NOTES**

## 42. An Integrated Approach to Improve Quality Outcomes in a Cardiac Surgery Program

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**Authors:** D *James R. Edgerton[1], D *William H. Ryan[1], Susan L. Dorval[1], Syma L. Prince[2], D *Michael J. Mack[1]

**Author Institution:** *[1]Heart Hospital Baylor Plano, Plano, Texas, United States; [2]Cardiopulmonary Research Science and Technology Institute, Dallas, Texas, United States*

**Discussant:** *Walter Merrill, Cincinnati, OH

**Objectives:** Various methods have been employed to improve outcomes of cardiac surgery. We used the occasion of opening a new integrated cardiac specialty center to institute a new program to monitor and modify outcomes. We hypothesize that with appropriate quality controls in place, a new specialty heart hospital can meet and exceed STS benchmarks for quality.

**Methods:** : A new program consisting of a single common cardiovascular department, commitment to quality and uniform patient care pathways was instituted in 2/2007. The STS online risk calculator was used to stratify risk preoperatively. A second surgical opinion was mandated on patients in the highest tenth percentile of risk (>8%). Alternative options were then considered to proceed with medical or surgical therapy, arrived at by consensus opinion.

**Results:** 742 patients underwent cardiac surgery in the first 10 months of operation. Outcomes for isolated CABG are in Table 1. In addition, there were no mortalities for isolated aortic, isolated mitral or mitral plus CABG procedures.

**Conclusions:** With a rigorous quality assurance program in an integrated specialty institution, improved outcomes in cardiac surgery can be obtained.

**Financial Disclosure:** James Edgerton – Physician investor in the specialty hospital

**Financial Disclosure:** William Ryan – Physician investor in the specialty hospital

**Financial Disclosure:** Michael Mack – Physician investor in the specialty hospital

| Outcomes | Specialty Hospital | 2007 STS Benchmark | p Value |
|---|---|---|---|
| Predicted Risk of Mortality | 1.7% | 1.8% | NA |
| In Hospital Mortality | 0.8% | 1.8% | 0.25 |
| Observed/Expected Mortality Ratio | 0.45 | 1.0 | NA |
| Average Length of Stay | 5.8 days | 7.0 days | <0.001 |
| Prolonged Ventilation(> 24 hours) | 3.0% | 9.0% | <0.001 |
| Reop for Bleeding | 0.8% | 2.4% | 0.08 |
| Permanent Stroke | 0.0% | 1.1% | 0.13 |

**NOTES**

## 43. Minimally Invasive Approach for Complex Cardiac Surgery Procedures

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**Authors:** Pasquale Totaro[1], Simone Carlini[1], Matteo Pozzi[1], Francesco Pagani[1], Giuseppe Zattera[1], Roberto Gaeta[1], Andrea Maria D'Armini[1], Mario Viganò[1]

**Author Institution:** [1]*Cardiac Surgery IRCCS S Matteo University Hospital, Pavia, Italy*

**Discussant:** *Michael Mack, Dallas, TX

**Objectives:** Minimally invasive approach through upper mini-sternotomy (UMS) has been used in our Division since 1997. Based on favorable outcomes we have extended this approach from isolated aortic valve replacement (AVR) to more complex cardiac surgery procedures and it is now our first choice approach for a variety of procedures. Here we report our 11 years experience.

**Methods:** From 1997 to date, 920 procedures have been performed using UMS. Isolated procedures on aortic valve and/or subvalvular structures were performed in 680 patients (74%), 45 of them (6.6 %) following a previous cardiac surgery procedure. Complex cardiac surgery procedures (including double valve replacement/repair, ascending aorta/aortic arch replacement, aortic root replacement and combined CABG procedures) were performed in 240 patients (26%), 28 of them (12 %) following a previous cardiac surgery procedure.

**Results:** Overall conversion to full sternotomy was required in 12 patients (1.3 %) with no significant differences between isolated AVR (9 pts, 1.32 %) and complex procedures (3 pts, 1.25%). Overall mortality was 3.4 % (32 patients) with no significant difference for complex operations compared to isolated AVR (4.5 % and 2.9 % respectively). Postoperative bleeding and surgical revision were also no different in patients undergoing isolated AVR or complex procedures.

**Conclusions:** Our experience clearly shows that minimally invasive approach through upper mini-sternotomy is useful and safe not only for isolated AVR but can be utilized for a variety of surgical procedures. Minimizing surgical access may be, therefore, helpful in patients undergoing complex surgical procedures without limiting the accuracy of surgical results.

**NOTES**

## 44. Thoracic Aortic Endovascular Repair for Infectious Aortic Pathology: A Long Term Analysis

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**Authors:** D Himanshu J. Patel[1], D David M. Williams[1], Gilbert R. Upchurch[1], Narasimham L. Dasika[1], Jonathan L. Eliason[1], *Richard L. Prager[1], G. Michael Deeb[1]

**Author Institution:** *[1]University of Michigan Cardiovascular Center, Ann Arbor, MI, United States*

**Discussant:** D *Thomas Beaver, Gainesville, FL

**Objectives:** Untreated infectious thoracic aortic pathology(ITAP) has a dismal prognosis. Despite its high rates of morbidity in this setting, conventional open repair remains the gold standard therapy. Understanding the limitations of open repair, we describe outcomes for one of the largest series of ITAP treated with an endovascular approach(TEVAR).

**Methods:** Of 160 patients undergoing TEVAR(1993-2008), 19(11.9%) presenting with ITAP were identified. Indications for intervention included aortobronchial(8) or aortoesophageal(2) fistulae, or mycotic aneurysms(9). Underlying pathology included fusiform aneurysm(1), saccular aneurysm/pseudoaneurysm(17), or dissection(1). Four of these patients had ITAP from infected grafts. Follow-up was 100% complete.

**Results:** Mean age was 65.5yrs. Comorbidities included hypertension(12), COPD(5), coronary artery disease(4), renal failure(mean creatinine 1.4mg/dL), concurrent malignancy(4), or need for immunosuppression(2). Arch repair was required in 7; total descending in 6. Two patients underwent hybrid TEVAR with visceral/renal debranching procedures. Causes of in-hospital mortality (n=3, 15.8%) included refractory hypoxemia following TEVAR for aortobronchial fistula(1), and sepsis from tracheoesophageal fistula(1) and pneumonia(1). Dialysis was needed in 2; none sustained postoperative stroke or paraplegia. Mean Kaplan-Meier survival was 33.8±8.6 months. Late mortality was seen in 9 patients, with 2 attributed to recurrent ITAP(at 36 and 52 months). TEVAR for previous graft infection was significantly associated with recurrent ITAP(p=0.035). At last imaging follow-up, 12 patients had a healed aorta.

**Conclusions:** TEVAR for infectious aortic pathology can be accomplished with acceptable early and late results. Late mortality is frequently related to underlying comorbidities rather than complications from the aortic pathology itself, suggesting that TEVAR is an appropriate palliative therapeutic option in this cohort.

**Financial Disclosure:** Himanshu Patel – Speaker with WL Gore (TAG) and Medtronic (Talent)

**Financial Disclosure:** David Williams – Principal investigator for FDA sponsored trials for thoracic endografts for Gore, Medtronic, and Cook

**Regulatory Disclosure:** Thomas Beaver – Will discuss the FDA approved thoracic stent graft's off-label use for infectious pathology

**Regulatory Disclosure:** Content describes the off-label use of Gore TAG graft

## NOTES

## Friday – Third Scientific Session B – General Thoracic Breakout

### 45. Endoscopic Ultrasound Replaces Mediastinoscopy for Pre-Operative Lung Cancer Staging

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**Authors:** *Mark I. Block[1]

**Author Institution:** *[1]Memorial Healthcare System , Hollywood, Florida , United States*

**Objectives:** Esophageal endoscopic ultrasound (EUS) and endobronchial endoscopic ultrasound (EBUS) are gaining popularity for mediastinal staging of patients with lung cancer. EUS and then EBUS were introduced into a single surgeon community thoracic surgical practice. Records were reviewed to determine what effect this had on performance of mediastinoscopy for lung cancer staging, and on the discovery of unsuspected N2 disease at the time of resection.

**Methods:** EUS and EBUS were introduced 10 months apart. Records were reviewed for the 10 months before EUS (phase 1, 8/1/05 - 6/1/06), the 10 months of EUS only (phase 2, 6/1/06 - 4/1/07), and 8 months of both EUS and EBUS use (phase 3, 4/1/07 - 12/1/07). The number of procedures done, the number done for staging patients with known or suspected lung cancer, the number of patients undergoing resection, and the number of patients with N2 disease discovered at resection were determined.

**Results:** 166 patients met inclusion criteria. During phase 1, 42 patients had mediastinoscopy. During phase 2, 15 patients had mediastinoscopy, 34 patients had EUS, and 3 had both (total = 52). During phase 3, 9 patients had mediastinoscopy, 61 patients had EUS/EBUS, and 2 had both (total = 72). Results showing discovery of unsuspected N2 disease are shown in table 1.

**Conclusions:** Introduction of EUS/EBUS dramatically reduced the use of mediastinoscopy. Discovery of unsuspected N2 disease at resection was higher, but remains within an expected range for this relatively small sample size. EUS/EBUS can be used successfully in a community thoracic surgical practice.

| Phase | n | Staged for Lung Ca | Resected | Unsuspected N2 |
|---|---|---|---|---|
| 1 | 42 | 28 | 19 | 0 |
| 2 | 52 | 42 | 24 | 2 |
| 3 | 72 | 41 | 25 | 3 |

**Incidence of Unsuspected N2 Disease**

**NOTES**

## 46. Early Experience with Robotic-Video-Assisted Thoracoscopic Anatomical Lung Resection

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**Authors:** D *Mark R. Dylewski[1]

**Author Institutions:** *South Miami Hospital / Baptist Health System of South Florida, Miami, Florida, United States*

**Objective:** In spite of advancements in minimally invasive surgery, thoracic surgeons have been slow to apply this technology to anatomical lung resection. We have developed a technique for robotic-video-assisted thoracoscopic anatomical lung resection (RVATALR) and are reporting our initial prospective experience.

**Method:** RVATALR was performed with the da Vinci Surgical System. Anatomical lobectomy, bilobectomy, or segmentectomy was performed through port access without a utility thoracotomy. All patients with bronchogenic carcinoma received a lymph node dissection. The specimen was extracted through a 2-4cm incision created at the anterior border of the 11th or 12th rib in all but three patients.

**Results:** RVATALR was accomplished in 42 patients. Thirty-one patients underwent lobectomy, two patients required bilobectomy, and nine patients underwent segmentectomy. One patient underwent a sleeve lobectomy and another had an enbloc chest wall resection along with lobectomy. No patient required a conversion thoracotomy because of failure to complete the lung resection. The majority of patients had non-small cell carcinoma (25/42{60%}), eight patients had isolated pulmonary metastases, three patients had carcinoid, and six patients had benign disease. The median number of lymph node stations dissected was 5. The median operative time was 101 minutes (range 60-225 minutes). The median length of hospital stay was 3 days. Perioperative mortality was 0%. Six (14%) patients experienced grade 2 or 3 adverse events.

**Conclusion:** RVATALR is technically feasible, safe and compares favorably to an open or a traditional VATS lobectomy. With further refinements in robotic surgery, we anticipate increasing acceptance of minimally invasive anatomical lung resection.

**Financial Disclosure:** Mark R. Dylewski – Clinical educator with Intuitive Surgical (da vinci surgery system)

# Friday – Third Scientific Session B – Congenital Breakout

## 47. Perioperative Risks and Outcomes of Atrioventricular Valve Surgery in Conjunction with Fontan Procedure

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**Discussant:** *John Calhoon, San Antonio, TX

**Objectives:** Long-term outcomes of staged single ventricle palliation can be impaired by atrioventricular (AV) valve regurgitation. AV valve repair or replacement has been shown to improve late outcomes, but no data exist regarding the associated perioperative morbidity. This study aimed to evaluate the additional perioperative risks associated with single ventricle AV valve surgery.

**Methods:** 236 consecutive Fontan procedures were retrospectively reviewed. Group 1 (n=20 with concomitant AV valve repair (17) or replacement (3)) was compared against Group 2 (n=216, no AV valve surgery) with regard to preoperative characteristics and perioperative outcomes. AV valve regurgitation was graded as 1 (none/trivial) to 4 (severe).

**Results:** Group 1 patients were older (4.4±3.8 vs 3.0±2.6years, p=0.03) and had longer cardiopulmonary bypass (119±38 vs 85±28 minutes, p<0.0001) and aortic cross-clamp times (35±32 vs 14±21 minutes, p<0.0001). There were no differences between groups regarding diagnosis, weight, hospital or intensive care unit length of stay, ventilator time or 12 hour chest tube output. Postoperative complications were similar between groups, including bleeding (0/20 vs 8/216, p=0.8), neurological injury (1/20 vs 9/216, p=0.7), arrhythmias (1/20 vs 24/216, p=0.6), and operative mortality (0/20 vs 1/216, p=0.1). Group 1 AV valve regurgitation significantly decreased following surgery (3.1±0.9 pre-op vs 1.6±0.9 post-op, p<0.0001).

**Conclusions:** AV valve surgery has been shown to improve late outcomes for single ventricle patients. This study demonstrates that AV valve surgery performed with the Fontan procedure increased operative times, but did not significantly increase perioperative morbidity or mortality. This information supports appropriate utilization of AV valve surgery for single ventricle patients.

**NOTES**

## 48. Transannular Patch with a Common Wall on the Autologous Pulmonary Outflow Floor by Direct or Indirect Ventriculo-Arterial Connection -- An Alternative for the Rastelli Operation

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**Authors:** Shu-Chien Huang[1], Ing-Sh Chiu[1], Meng-Luen Lee[2], Ming-Ren Chen[3], Shye-Jao Wu[1]

**Author Institutions:** *[1]National Taiwan University Hospital, Taipei, Taiwan; [2]Changhua Christian Hospital, Changhua, Taiwan; [3]Mackay Memorial Hospital, Taiepi, Taiwan*

**Discussant:** *James Tweddell, Milwaukee, WI

**Objectives:** Reoperation is usually inevitable for patients after a Rastelli operation for congenital cardiac defects. We sought to verify that a transannular patch on autologous posterior wall with common wall (CW) between aorta and pulmonary trunk can replace the conventional Rastelli operation.

**Methods:** From August 1997 to October 2007, 31 patients underwent autologous pulmonary floor with CW between the great arteries and transannular patch to correct right ventricle to pulmonary artery discontinuity at our hospital. Their age ranged from 15 days to 19.3 years. The posterior pulmonary pathways were reconstructed by direct or indirect ventriculo-arterial connection using tissue in-situ or donated from the dominant aorta/truncus in all cases. The aorta/truncus was tailored transversely or longitudinally to donate the inner or outer wall as pulmonary pathway as needed. A monocusp was used when there was pulmonary hypertension.

**Results:** All patients are doing well after the operation. The postoperative central venous pressure was low; no gradient was noted across the right ventricular outflow tract. Follow-up echocardiography revealed a competent tricuspid valve with mild pulmonary regurgitation in all patients. Computerized tomogram showed growth of CW. Late noncardiac death occurred in one patient, and the others are well at a mean follow-up of 5.5 years.

**Conclusions:** We conclude that a transannular patch with CW between the great arteries and an autologous pulmonary floor by the outer wall or inner wall donated from the dominant aorta/truncus, longitudinally/transversely, can be an alternative to Rastelli operation to establish right ventricle to pulmonary artery continuity in various congenital defects.

**NOTES**

## 49. Lateral Tunnel Fontan Operation In The Current Era: Does It Still Good Option?

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**Authors:** John W. Brown[1], Mark Ruzmetov[1], Mark D. Rodefeld[1], Mark W. Turrentine[1]

**Author Institutions:** [1]*Indiana University School of Medicine, Indianapolis, IN, United States*

**Discussant:** *Erle Austin, Louisville, KY

**Objectives:** Construction of a total cavopulmonary anastomosis using an intra-atrial lateral tunnel Fontan (LTF) is known to yield good early and mid-term results. Given the current controversy regarding indications for a total extracardiac Fontan procedure, we reviewed the long-term outcome after a LTF operation.

**Methods:** Between 1992 and 2008, 215 patients (median age, 2.5 years; range, 1 to 45 years) with a wide range of underlying diagnoses underwent a fenestrated or non-fenestrated LTF operation at our institution. Current follow-up information was available for 210 patients (98%, mean follow-up, 6.7+3.9 years). Risk factor analysis included patient-related and procedure-related variables, with death, failure (death, takedown, or transplantation), and brady- or tachyarrhythmia as outcome parameters.

**Results:** There were 1 early death, 10 late deaths, 3 successful takedown operations, and 1 heart transplantation. Kaplan-Meier estimated survival was 96% at 5 years and 95% at 10 years, and freedom from failure was 94% at 5 years and 93% at 10 years. Freedom from new supraventricular tachyarrhythmia was 98% at 5 years and 95% at 10 years; freedom from new bradyarrhythmia was 97% at 5 years and 96% at 10 years. Six patients have developed protein-losing enteropathy and 2 of 6 have had takedown. Multivariable risk factors for development of supraventricular tachyarrhythmia included atrioventricular valve abnormalities (P=0.02), and preoperative bradyarrhythmia (P=0.01). Risk factors for bradyarrhythmia included early postoperative pacing (P=0.001). None of the patient-related variables significantly influenced survival.

**Conclusions:** The LTF operation results in excellent mid-term outcome even when used in patients with diverse anatomic diagnoses. The incidence of postoperative atrial tachyarrhythmia is low and depends largely on the underlying cardiac morphology and preoperative arrhythmia. The good mid-term outcome after a LTF operation should serve as a basis for comparison with other surgical alternatives.

**NOTES**

## 50. Twenty-Year Review of Supravalvar Aortic Stenosis Repair for Patients with Williams-Beuren Syndrome

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**Authors:** Daniel J Scott[1], David N Campbell[1], David R Clarke[1], François Lacour-Gayet[1], Max B Mitchell[1], Deborah J Kozik[1]

**Author Institutions:** [1]*University of Colorado, Aurora, CO, United States*

**Discussant:** *Charles Fraser, Houston, TX

**Objectives:** Williams-Beuren Syndrome (WBS) is a rare genetic-based elastin arteriopathy commonly associated with supravalvar aortic stenosis (SVAS). Our aims were to review the outcome of SVAS repairs in WBS patients in our center, and to compare prosthetic patch aortoplasty (PP) to all-autologous slide aortoplasty (AA).

**Methods:** 21 patients with WBS underwent SVAS repair between 1988 and 2008. Follow-up peak gradients were estimated using Doppler echocardiogram. AA and PP patients were compared using unpaired, two-tailed Student's t test. Risk factors for reoperation were analyzed by contingency table and Fisher's exact test.

**Results:** There were 13 PP and 8 AA patients. Three of 13 PP patients had attempted AA repair but required patch augmentation. Mean PP f/u was 6.8±6.0 yrs vs. 2.6±2.3 yrs for AA, (p=0.04). Operative mortality was 4.8% (n=1, AA group). There were no late deaths at overall mean f/u of 5.3±5.3 yrs. There were 2 reoperations. Both reoperations were PP patients who required concomitant valvotomy for associated bicuspid aortic valve. Bicuspid aortic valve was the only risk factor for reoperation (p= 0.005). Moderate recurrent SVAS occurred in 2 patients: 1 AA (f/u 0.6 yr) and 1 PP (f/u 11.8 yr). Mean peak gradient at most recent follow-up was 15.9±16.1 mmHg, PP vs. 16.7±14.4 mmHg, AA (p=0.90).

**Conclusions:** Long-term outcomes following SVAS repair in WBS patients were excellent. Significant recurrent SVAS is uncommon and not affected by technique. All-autologous slide aortoplasty is more challenging and can require additional patch augmentation. No advantage to all-autologous slide aortoplasty is apparent.

**NOTES**

## Saturday – Fourth Scientific Session A

### 51. Long Term Follow Up of Patients with Nonsmall Cell Lung Cancer: Routine Follow Up Ct Scans Identify New Lung Primaries

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**Authors:** *Linda W. Martin[1], Ziv Gamliel[1], Lisa M Marroney[1], Lance Grove[1], Syamal Dey[1], *Mark J. Krasna[1]

**Author Institutions:** [1]St Joseph Medical Center, Towson, Maryland, United States

**Discussant:** *Bryan Meyers, St. Louis, MO

**Objectives:** There are no firmly established guidelines for follow up after resection of non small cell lung cancer (NSCLC). The majority of events occur within the first 2 years postoperatively. Our goal is to determine if routine semiannual CT scanning of the chest in the first 2 postoperative years, followed by annual scans thereafter, is helpful for detection of secondary primary NSCLC (SPNSCLC).

**Methods:** We retrospectively reviewed our database of 194 patients with a history of prior surgical resection for NSCLC at a community hospital since 9/2006. Patients were seen quarterly, had CT scans semiannually for 2 years, then scans annually thereafter if asymptomatic. Clinical characteristics and treatment outcomes of patients with SPNSCLC who underwent resection were analyzed.

**Results:** 16 patients with 16 second primary NSCLC were identified using CT scan surveillance. The mean age was 63 years. Time from initial lung cancer surgery was 6 + 3.03 years. There were 14 stage I, 1 stage II, and 1 stage III SPNSCLC. There were no perioperative deaths; morbidity included respiratory failure in 1 patient, atrial arrhythmia in 2 patients requiring intervention, air leak >5 days in 2 patients, and 1 patient with TIA.

**Conclusions:** Patients with a prior history of NSCLC are more likely to develop a new primary NSCLC than the general population. This series describes SPNSCLC that were treated at an early stage with low morbidity. The use of an aggressive CT scan surveillance program seems justified as a secondary prevention tool in this already high risk subset.

**NOTES**

## 52. Is Limited Stent Grafting a Viable Treatment Option in Type B Aortic Dissections?

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**Authors:** Suzanne A Siefert[1], *Gorav Ailawadi[1], Richard B Thompson[1], Hongkun Wang[1], *Benjamin B Peeler[1], *Irving L Kron[1], Kenneth J Cherry[1], Nancy L Harthun[1], Michael D Dake[1], John F Angle[1], Alan H Matsumoto[1], *John A Kern[1]

**Author Institutions:** [1]University of Virginia, Charlottesville, Va, United States

**Discussant:** Joseph Bavaria, Philadelphia, PA

**Objectives:** Endovascular stent-grafts have been shown to be a less invasive, yet equally effective, alternative for thoracic aortic aneurysms. Experience with endovascular approaches to descending thoracic aortic dissections, is sparse. Our objective was to evaluate endovascular repair of aortic dissections versus open surgical repair.

**Methods:** All patients with aortic dissections are entered into our database. Patients with type B aortic dissection and worsening clinical picture requiring surgical management from 1999-2008 were reviewed. Patients who underwent endovascular stent-graft repair (n=34) were compared to patients who underwent open repair (n=26). Mean ages were 62±12 years (M=24, F=10) and 61±12 years (M=17, F=9), respectively. Preoperative demographics and outcomes were analyzed using chi-square, Fisher's exact test and Wilcoxon test.

**Results:** Patients undergoing endovascular repair had significantly less mortality compared to open repair [30-day-mortality=0% (0/34) vs. 15.4% (4/26), P=0.02]. No increase in morbidity was seen in the endovascular group including paralysis [0.0% (0/34) vs. 3.9% (1/26), P=0.25], stroke [2.9% (1/34) vs. 11.5% (3/26), P=0.18], or renal dysfunction [8.82% (3/34) vs. 15.4% (4/26), P=0.43]. Reintervention was similar between groups [35.3% (12/34) vs. 30.8% (8/26), P=0.84]. Endovascular repair was more often performed for acute and subacute dissections [55.9% (19/34) vs. 26.9% (7/26), P=0.02] rather than for chronic dissections. Furthermore, endovascular repair was more frequently performed for malperfusion compared to open repair [14.7% (5/34) vs. 0% (0/26), P=0.04].

**Conclusions:** Endovascular stent-graft repair of descending aortic dissections has a lower mortality compared to open repair and should be considered the preferred treatment for type B aortic dissections.

## 53. Contemporary Outcomes of Surgery for Infective Mitral Valve Endocarditis

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**Authors:** Eric K. Shang[1], Graeme N. Forrest[1], Timothy Chizmar[1], Jimmy Chim[1], James M. Brown[1], *Bartley P. Griffith[1], D *James S. Gammie[1]

**Author Institutions:** [1]University of Maryland Medical Center, Baltimore, MD, United States

**Discussant:** *Richard Prager, Ann Arbor, MI

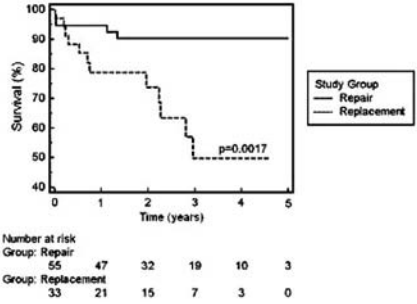
**Objectives:** In-hospital mortality rates for left-sided infective endocarditis (IE) exceed twenty percent. While some reports support the importance of surgical intervention, others question its value. Our study investigates the outcomes of an aggressive approach to mitral valve IE that emphasizes early surgical intervention and preferential performance of mitral valve repair.

**Methods:** We reviewed 90 consecutive patients with native mitral valve IE who underwent surgery at a single institution from 2002 to 2007. Surgery occurred promptly after completion of pre-operative studies; long-term outcomes were assessed using National Death Index and clinical follow-up. Independent risk factors for mortality were investigated using multivariable logistic regression.

**Results:** Mitral valve repair was accomplished in 62% (n=56) of patients. Perioperative mortality was 4.4% (n=4). One and five-year survival rates were 88.9% (80/90) and 81.1% (73/90), respectively. There was a survival benefit for repair compared to replacement at one (p=0.03) and five years (p=0.0017) (see Figure). Repair vs. replacement (OR=0.21, 95% CI: 0.06-0.72), diabetes (OR=4.43, 95% CI: 1.18-16.66), and renal failure (OR=3.65, 95% CI: 1.3-12.91) were independent risk factors for late mortality. Among patients with active IE (n = 59), 49% (n=29) had head CT abnormalities; 41% (12/29) had intracerebral hemorrhage. Despite a median interval of 4 days from admission to surgery, the rate of postoperative stroke was only 1.1% (1/90).

**Conclusions:** These results support early surgical therapy for mitral valve IE. Head CT abnormalities do not warrant delay of surgery. Mitral valve repair was associated with an overall survival advantage compared to valve replacement.

**Financial Disclosure:** James Gammie – Consultant with Medtronics and Edwards Lifesciences




Number at risk
Group: Repair
55 47 32 19 10 3
Group: Replacement
33 21 15 7 3 0

**NOTES**

## 54. Oncologic Utility of Anatomic Segmentectomy for Stage I Non-Small Cell Lung Cancer in the Elderly

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**Authors:** Arman Kilic[1], Matthew J. Schuchert[1], Brian L. Pettiford[1], *Arjun Pennathur[1], James R. Landreneau[1], Joshua P. Landreneau[1], James D. Luketich[1], *Rodney J. Landreneau[1]

**Author Institutions:** [1]*University of Pittsburgh Medical Center, Pittsburgh, Pennsylvania, United States*

**Discussant:** *Christine Lau, Charlottesville, VA

**Objectives:** Anatomic segmentectomy for stage I non-small cell lung cancer (NSCLC) offers the potential of surgical cure with preservation of lung function. This may be of particular importance in elderly NSCLC patients with declining cardiopulmonary status and a finite life expectancy. We examined the outcomes of elderly patients with stage I NSCLC undergoing either anatomic segmentectomy or lobectomy at our institution over the last 5 years.

**Methods:** The outcomes of patients greater than 75 years of age undergoing anatomic segmentectomy (n=78) or lobectomy (n=106) for Stage I NSCLC from 2002-2007 were compared. Primary outcome variables included perioperative morbidity and mortality, hospital course, recurrence patterns and survival. Statistical analyses included two-tailed Fisher's exact test and unpaired t-test. Survival was calculated using the Kaplan-Meier estimate, and the log-rank test was used to determine significance.

**Results:** Age, gender, cancer stage, and tumor histology were similar between groups. Segmentectomy was associated with reduced operative mortality (1.3 versus 4.7%) and fewer major complications (9.0 versus 25.5%, p=0.004). There were no differences in length of hospital stay (median=6 days). The estimated 2, 3, and 5-year overall survival was 74, 66, and 50% for segmentectomy patients and 69, 55, and 42% for lobectomy patients (p=0.71).

**Conclusions:** Anatomic segmentectomy can be performed safely in elderly patients with early stage NSCLC. This approach is associated with reduced perioperative mortality and complication rates, as well as comparable oncologic efficacy, when compared to lobectomy in older patients with a finite life expectancy.

**NOTES**

## 55. Surgical Treatment of Mitral Regurgitation in North America 2000-2006: Increased Adoption of Mitral Valve Repair

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**Authors:** *James S. Gammie[1], Joshua D. Grab[2], *Bartley P. Griffith[1], Eric D. Peterson[2], J. Scott Rankin[3], Sean M. O'Brien[2], James M. Brown[1]

**Author Institutions:** *[1]University of Maryland Medical Center, Baltimore, MD, United States; [2]Duke Clinical Research Institute, Durham, NC, United States; [3]Vanderbilt University, Nashville, TN, United States*

**Discussant:** Ⓓ *Michael Petracek, Nashville, TN

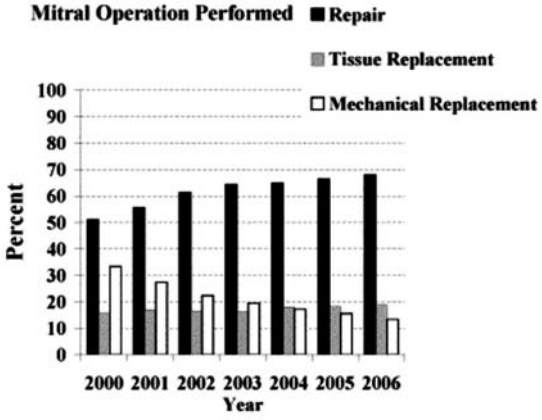
**Objectives:** The purpose of this study is to examine trends in utilization of mitral valve (MV) repair compared to replacement, replacement valve type, and outcomes of MV surgery using a national database.

**Methods:** The Society of Thoracic Surgeons National Cardiac Database was reviewed for all patients undergoing isolated primary MV surgery. Patients with infective endocarditis, prior cardiac operation, cardiogenic shock, and emergency operation were excluded. The study population included 48,411 MV operations between 1/00 and 12/06.

**Results:** The proportion of patients diagnosed with mitral stenosis declined from 30.2 to 15.2 % during the 7-year study period ($p < 0.0001$). For patients with mitral regurgitation (n = 39,286), the repair rate (vs. replacement) increased from 51.2 to 68.1 percent; Figure; $p < 0.0001$), an increase of 33 percent. Among patients having replacement (n = 20,726), there has been a pronounced shift from mechanical to tissue valves: 68 % mechanical in 2000 to 41% mechanical in 2006 ($p < 0.0001$). The operative mortality for MV replacement (3.75 %) was consistently higher than that for MV repair (1.40 %). Among patients having elective isolated MV repair (n=21,219), the operative mortality was 0.97 percent.

**Conclusions:** This study documents progressive adoption of mitral valve repair compared to replacement for mitral regurgitation. When replacement is performed, bioprosthetic valves are now most commonly implanted. Outcomes for isolated elective mitral valve repair are outstanding, with a nationwide mortality rate of less than one percent. This is the standard against which evolving therapies for mitral regurgitation should be compared.

**Financial Disclosure:** Michael Petracek – Speaker and Advisory Board for Medtronic and St. Jude


Mitral Operation Performed
Repair
Tissue Replacement
Mechanical Replacement
Percent
100
90
80
70
60
50
40
30
20
10
0
2000 2001 2002 2003 2004 2005 2006
Year

**NOTES**

## Saturday – Fourth Scientific Session B

### 56. Thoracic Duct Ligation for Persistent Chylothorax Following Pediatric Cardiothoracic Surgery

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**Authors:** Dilip S Nath[1], Jainy Savla[1], Robinder Khemani[1], Christina L Greene[1], Brian L Reemtsen[1], Winfield J Wells[1]

**Author Institutions:** [1]*Childrens Hospital Los Angeles, Los Angeles, CA, United States*

**Discussant:** *Vincent Tam, Fort Worth, TX

**Objectives:** There is considerable literature on the incidence and medical management of post-surgical chylothorax in children but little is known about the outcomes of thoracic duct ligation (TDL) for patients refractory to medical therapy.

**Methods:** A retrospective review of patients undergoing TDL following cardiothoracic surgery (1992-2007) was done. Data on demographics including cardiac morphology, characteristics of the chylous drainage, medical management and post-TDL course was collected. When available imaging studies of the upper body venous drainage vessels were examined.

**Results:** Twenty patients (median age 0.65 years (0.03-11); weight 7.0 kg (2.6-30)) had a diagnosis of chylothorax made 8.5 days (2-118) after initial operation. Median duration of pre-TDL medical management (dietary and pharmacologic) was 17.5 days (7-69). Median drainage for the 5 days preceding TDL was 34.5 cc/kg/d (15-135) with maximal output of 65 cc/kg/d (30-200). Following TDL there was a decrease in median drainage to 13 cc/kg/d (4-160;p=0.003). Chest tubes were removed 8.5 days (4-34) post-TDL. There were 4 deaths (none attributed to TDL) and 2 treatment failures (post-TDL chest tube drainage>2cc/kg/d>14 days). 3 patients had documented upper body venous thrombosis. Univariate analysis demonstrated that thrombosis of upper body venous vessels (p=0.02) and prolonged post-TDL chest tube drainage (p=0.01) were risk factors for death or treatment failure.

**Conclusions:** TDL leads to a major reduction in chest tube drainage and prompt tube removal in most pediatric patients and should be considered early in refractory postoperative chylothorax. Patients with upper body venous thrombosis associated with chylothorax are at high risk for failure of TDL and mortality.

| Variable | Effective TDL treatment | Death or treatment failure | p value |
|---|---|---|---|
| | n=14 | n=6 | |
| Age (years) | 0.8 (0.03-11) | 0.55 (0.1-2.2) | 0.55 |
| Time to diagnosis (days) | 11 (2-118) | 8 (2-19) | 0.55 |
| Pre-TDL maximum drainage (cc/kg/day) | 70 (30-160) | 52.5 (30-200) | 0.44 |
| Pre-TDL drainage days (>2cc/kg/day) | 17.5 (7-69) | 18.5 (13-38) | 0.66 |
| Pre-TDL 5 day average (cc/kg/day) | 37.5 (15-125) | 29.5 (20-135) | 0.90 |
| Post-TDL drainage days (>2cc/kg/day) | 4.5 (2-10) | 9.5 (6-32) | 0.01 |
| Post-TDL 5-day avg (cc/kg/day) | 11 (4-44) | 30 (9-160) | 0.06 |
| Bilateral pleural effusions | 4 (28.6%) | 2 (33.3%) | 0.61 |
| Single ventricle physiology | 8 (57.1%) | 3 (50%) | 0.57 |
| Fontan procedure | 5 (35.7%) | 0 (0%) | 0.26 |
| Heterotaxy | 3 (21.4%) | 1 (16.7%) | 0.66 |
| Venous thrombosis | 0 (0%) | 3 (21.4%) | 0.02 |
| Data expressed as median (range) | | | |

**Univariate analysis**

**NOTES**

## 57. Open Lobectomy Simulator is an Effective Tool for Teaching Thoracic Surgical Skills

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**Authors:** Yvonne M Carter[1], *M. Blair Marshall[1]

**Author Institutions:** [1]*Georgetown University Medical Center, Washington, DC, United States*

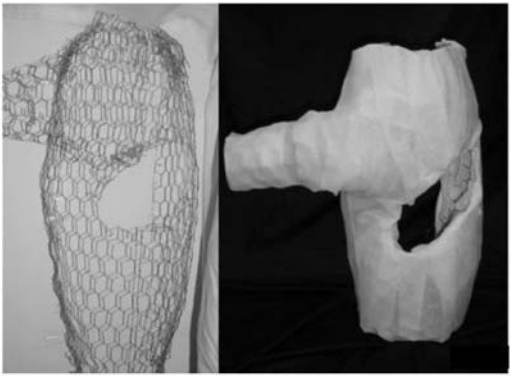
**Discussant:** *Richard Feins, Chapel Hill, NC

**Objectives:** In recent years surgical education has began to include simulation and skills training. We propose a simple simulator model is an effective tool for training thoracic surgical skills.

**Methods:** A posterolateral thoracotomy model was constructed using chicken wire and casting fiberglass (Fig. 1), and a set of bovine lungs was placed inside. Student volunteers were enlisted as study subjects, and provided with computerized instructional material for self - study. A thoracic surgeon assisted each student during the project. Knowledge - based exams were given, and objective structured assessment of technical skills (OSATS) was utilized for subject evaluation. Statistical analysis was performed with the Student t test.

**Results:** The initial success rate was 88.9% (16/18). On average students required 52.4 ± 11.9 minutes to complete the lobectomy. The time significantly decreased with weekly repetition; 34.2 ± 7.6 minutes ($p=0.01$) by the fourth week. The average task - specific skills score was 5.6 ± 1.6 (maximum = 8), and increased to 6.6 ± 1.7 ($p=0.05$). This significant difference was maintained through the forth week ($p=0.03$). The OSATS scores also improved in the third (28.6 ± 3.8, $p=0.01$) and fourth (31.6 ± 3, $p=0.002$) weeks, compared to the first week (18.2 ± 6.1).

**Conclusions:** To our knowledge this is one of the first simulators proposed for the instruction of open lobectomy. Our results prove the effectiveness of our model to teach surgical skill development in the thoracic cavity. Additional studies will determine if this method translates to improved skills among residents in the operating room.



## 58. Indexed Left Ventricular Dimensions Best Predict Survival After Aortic Valve Replacement in Patients with Aortic Valve Regurgitation

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**Authors:** Morgan L. Brown[1], *Hartzell V. Schaff[1], Rakesh M. Suri[1], *Thoralf M. Sundt[1], Joseph A. Dearani[1], Richard C. Daly[1], Thomas A. Orszulak[1]

**Author Institutions:** [1]*Mayo Clinic, Rochester, MN, United States*

**Discussant:** *Kevin Accola, Orlando, FL

**Objectives:** Indications for aortic valve replacement (AVR) for aortic regurgitation (AR) include diminished EF and increased LV dimensions. Our objective was to examine the echocardiographic predictors of survival and achievement of normal LV function (>=60%) following AVR for AR.

**Methods:** Between 1996 and 2006, 301 patients had an AVR for moderate chronic AR. Retrospective review of clinical and echocardiographic variables was performed.

**Results:** Patients' mean age was 55.2±16.5yrs and 78% were male. The mean preoperative LVEF was 56±12%, the mean LV end-systolic dimension (ESD) was 43±10mm, and the mean LV end-diastolic dimension (EDD) was 63±9mm. Operative mortality was 1.7% and survival at 1, 5, and 10 years was 96%, 89%, and 77%. Preoperative LVESD, LVEDD, and LVEF were not predictive of late survival. However, indexed LVESD and LVEDD were univariate predictors (P<0.01) of late survival. Late echocardiography was available on 159 patients (56%) at a mean follow-up of 3.3±2.6yrs. Preoperative EF, LV outflow tract velocity, LVESD, indexed LVESD, and LVdP/dT were univariately predictive of late return to normal EF. In a multivariate model the only predictor of late normal EF was a higher preoperative EF (OR 1.91, P<0.001).

**Conclusions:** In patients who received an AVR for AR, decreased LV EF and increased LV dimensions were not associated with late mortality. However, increasing indexed LV systolic and diastolic dimensions were associated with late mortality. Indications for operation in patients with AR should reflect the importance of indexed values. Preservation of late EF is best if operation is performed in patients with normal preoperative LV function.

**NOTES**

## 59. Direct Monitoring of Spinal Cord Collateral Perfusion Pressure in Descending Thoracic and Thoracoabdominal Aneurysm Repair Involving Extensive Segmental Artery Sacrifice

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**Authors:** Christian D Etz[1], Konstadinos A Plestis[1], Ricardo Lazala[1], Gabriele DiLuozzo[1], Randall B Griepp[1]

**Author Institutions:** [1]*Mount Sinai School of Medicine, New York, NY, United States*

**Discussant:** *John Kern, Charlottesville, VA

**Objectives:** Although maintenance of adequate spinal cord perfusion pressure (SCPP) by the paraspinal collateral network is critical to the success of surgical and endovascular repair of descending thoracic (DTA) and thoracoabdominal aortic aneurysms (TAAA), direct monitoring of SCPP has not previously been described.

**Methods:** A catheter was inserted into the distal end of a ligated thoracic segmental artery (SA) (T8-11) in 12 patients, 8 of whom underwent DTA/TAAA-repair using deep hypothermic circulatory arrest (DHCA). SCPP was recorded from this catheter before, during, and after serial SA sacrifice, in pairs, from T3 through L3, at 32ºC. Somatosensory- and motor- evoked potentials (SSEP/MEP) were also monitored during SA sacrifice and until 1 hour after CPB. Target mean arterial pressure (MAP) was 90mmHg during SA sacrifice and after non-pulsatile cardiopulmonary bypass (CPB), and 60mmHg during CPB.

**Results:** A mean of 10.6±2.7 SAs were sacrificed without SSEP/MEP loss. SCPP fell from 63±11mmHg (77±10% of MAP) before SA sacrifice to 57±15mmHg (64±15% of MAP) after SA clamping. The most significant drop occurred with initiation of non-pulsatile CPB, reaching 27±10mmHg (48±15% of MAP) prior to DHCA and remaining at 29±14 mmHg (40±17% of MAP) until 2 hours after SA sacrifice. SCPP recovered during rewarming to 41±14mmHg (52±19% of MAP), and further within the first hour of reestablished pulsatile flow (Figure 1). MEP and SSEP returned in all patients intraoperatively, and all regained normal spinal cord function. Recovery of SCPP began intraoperatively, and-in three patients with prolonged monitoring-continued during the first 24h postoperatively.

**Conclusions:** This study supports experimental data showing that SCPP drops markedly, but then recovers gradually during the first several hours after extensive SA sacrifice. Direct monitoring may help to assure that SCPP does not fall below levels critical for spinal cord recovery following surgery and endovascular repair of DTA/TAAA.

**NOTES**

## 60. Warm Beating Heart Surgery on the Mitral Valve Via Right Thoracotomy is an Excellent and Safe Alternative for Reoperative Mitral Surgery.

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**Authors:** Matthew A. Romano[1], Francis D. Pagani[1], *Steven F. Bolling[1]

**Author Institutions:** [1]University of Michigan, Ann Arbor, MI, United States

**Discussant:** *Michael Petracek, Nashville, TN

**Objectives:** Right thoracotomy employing ventricular fibrillation with cooling (VF) has been used for redo mitral valve surgery. This approach avoids the complications of redo sternotomy; injury to prior grafts, sternal dehiscence and hemorrhage. As an improvement, we utilized a warm beating heart (BH) technique to minimize complications while simplifying the operation.

**Methods:** We reviewed 375 patients who underwent redo mitral surgery via a right thoracotomy from 1996 to 2007. At total of 134 patients underwent redo mitral surgery with VF, and 241 patients underwent BH surgery. Their age, risk factors, NYHA and preoperative LVEF were not significantly different. Core temperature on cardiopulmonary bypass (CPB) for BH was 32.6°C vs. 26.2°C for VF.

**Results:** BH patients had shorter periods of CPB, 81±9 min vs. 113±36 min. Furthermore BH required less blood products than VF: 1.65±2 units vs. 3.8±5 units PRBC; 0.6±1.2 units vs. 1.8±4 units FFP; and 1.02±4 vs. 7.5±17 platelet packs. Additionally, VF patients required double the postop ventilation, 34±101 hrs vs. 15.5±27 hrs. The 30-day mortality was similar for both: 6.5% for BH and 7.4% for VF. Stroke rate was 3% for both and postop LOS was the same at 7 days. Significant complications were uncommon; only 2 VF and 2 BH patient required reexploration. These results compare very favorably to the STS database mean values for reoperative mitral valve surgery with CPB time of 191 min, postop ventilation of 97 hours, stroke rate of 3.25%, 30-day mortality of 14%, and LOS of 13 days.

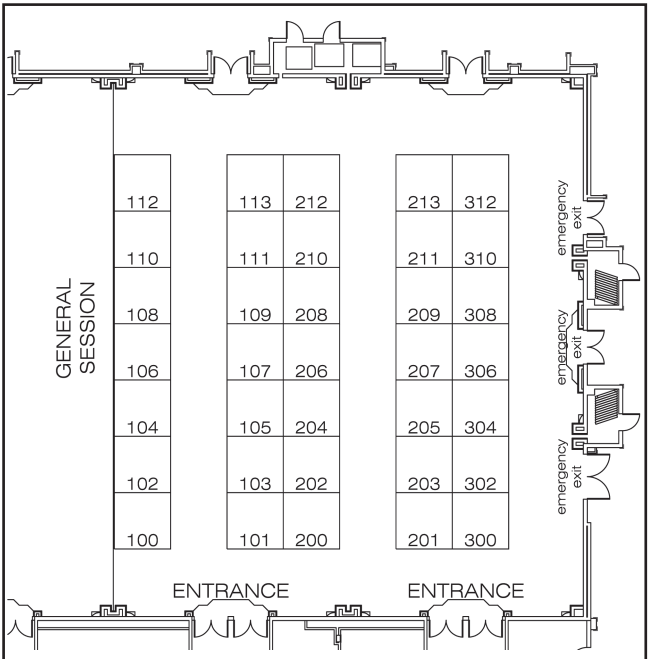
**Conclusions:** As reoperative cardiac surgery continues to increase, techniques which safely facilitate the operation, while improving outcome should be adopted. Redo right thoracotomy mitral surgery on the warm beating heart, offers shorter bypass time, less transfusion requirements, shorter post operative ventilation, postoperative stay and low mortality. This effective and safe approach should be considered for this complex population.

**NOTES**

# EXHIBITORS*

*Confirmed as of September 8, 2008

- Exhibit Hall is located in Lost Pines Ballroom 5-8
- All coffee breaks scheduled during show hours are in the exhibit area
- Complimentary coffee and pastries will be served

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# SOUTHERN THORACIC SURGICAL ASSOCIATION

## CONSTITUTION AND BY LAWS

# SOUTHERN THORACIC SURGICAL ASSOCIATION

## CONSTITUTION AND BY-LAWS

(as amended November 10, 2006)

### Article I: NAME

The name of the Corporation shall be the SOUTHERN THORACIC SURGICAL ASSOCIATION, INC. (hereinafter designated as "the Association").

### Article II: OBJECTIVES

The Association is a not-for-profit corporation whose principle objectives are to disseminate knowledge and information and to stimulate progress in the field of thoracic and cardiovascular surgery in the designated geographic area.

The Association will:

1. Disseminate knowledge, encourage research and report at the annual meeting, scientific session and postgraduate course on the advancements within the field of thoracic and cardiovascular surgery.

2. Promote fellowship among thoracic and cardiovascular surgeons throughout the designated geographic area.

3. Assure that the activities of the Association are undertaken without any discrimination with regard to race, color, religious creed, national origin, ancestry, physical handicap, medical condition, marital status or sex.



### Article III: OFFICES

The Association shall have and continuously maintain a registered office and a registered agent in the State of Illinois, and may have such other offices in or outside the State of Illinois at the Council's discretion.

### Article IV: MEMBERS

SECTION 1. Membership. There shall be three (3) categories of members: Active, Senior and Honorary Member. Members shall be composed of individuals who support the purpose of the Association and who agree to comply with the Association's rules and regulations. Active and Senior members shall be entitled to hold office and shall have voting privileges. Members must be board certified by the American Board of Thoracic Surgery or its foreign equivalent. If an active member moves from the designated membership area that is provided for in SECTION 2, they may retain their membership as long as all other requirements for membership are satisfied. Members whose practices have been limited because of disability, or who have reached the age of 65 years, may apply for Senior Membership. The Association shall not be required to subscribe to the Annals of Thoracic Surgery for Senior members. Honorary

membership can be bestowed upon a worthy recipient upon recommendation of the Council and ratification by a two-thirds majority of the votes at the annual meeting. Honorary Members are welcomed at all scientific and business meetings of the Association, but have no obligations or responsibilities in the organization. Honorary Members do not have voting privileges, nor shall they hold office.

SECTION 2. Applicants. An applicant for active membership must at the time of acceptance reside, or have previously practiced cardiothoracic surgery for at least two consecutive years, or have completed a thoracic residency program in one of the following states or regions: Alabama; Arkansas; Florida; Georgia; Kentucky; Louisiana; Maryland; Mississippi; Missouri; North Carolina; Oklahoma; South Carolina; Tennessee; Texas; Virginia; West Virginia; District of Columbia; the U.S. territories and commonwealths in the Caribbean. An applicant for active membership must be certified by the American Board of Thoracic Surgery (ABTS). Applicants whose training has been in countries other than the United States of America, and who are certified as proficient in thoracic and cardiovascular surgery by appropriate authorities in their home country, may apply. Seventy-five percent of the practice of the applicant must be devoted to the field of thoracic and cardiovascular surgery, which may include research and peripheral vascular surgery. If an applicant is unsuccessful in obtaining membership in two successive years, an interval of two years must elapse before he/she may reapply. The Membership Committee and the Council may recommend acceptance of foreign training and certification by stating that, in their opinion, it represents equivalent status. Applicants so approved by the Membership Committee and the Council may become active members upon election by the membership at an annual meeting.

Active status will not become effective, nor a certificate of membership presented, until such elected applicant registers at one of the next four annual meetings following his/her initial election to membership. Exception for this requirement may be granted by a majority vote of the Council. Failure to comply with this procedure will require reapplication for membership.

SECTION 3. Applications. Application forms for active membership are available from the Secretary-Treasurer and are forwarded to the Chairman of the Membership Committee for verification. Applications will be verified by the Membership Committee in accordance with the policies and procedures established by the Council.

SECTION 4. Certificates. The Council shall issue a Certificate of the Association evidencing the member's admission to the Association and indicating membership status. These certificates remain the sole property of the

Association and shall be surrendered upon written demand and/or for non-payment of dues.

SECTION 5. Resignation. Members may resign from the Association at any time by giving written notice to the Secretary/Treasurer of the Association. Such resignation shall not relieve the member of any obligation for dues, assessments or other charges previously accrued and unpaid. Membership is not transferable or assignable.

SECTION 6. Termination of Membership. The Council, by affirmative vote of two-thirds of all Council members present and voting at any duly constituted meeting of the Council, may suspend or expel a member for cause after an appropriate hearing in accordance with policies and procedures established by the Council. The Council, by affirmative vote of a majority of all Council members present and voting at any duly constituted meeting of the Council may terminate the membership of any member who has become ineligible for membership in accordance with the policies and procedures established by the Council.

SECTION 7. Application for Reinstatement. Any former members of the Association may apply for reinstatement through the regular application procedure.

**Article V: DUES AND ASSESSMENTS**

The initiation and annual dues for each category of member of the Association, the time for paying such dues, and other assessments, if any, shall be determined by the Council. Annual dues are not refundable.



**Article VI: MEETING OF MEMBERS**

SECTION 1. Annual Meeting. The annual meeting of the members shall be held at a date, time and place determined by the Council and shall be held in conjunction with the scientific session of the Association.

SECTION 2. Purpose. The purpose of the annual meeting is to: elect officers and councilors; receive reports from the Association on the activities of the Council; provide members an opportunity to express their opinions on matters affecting the Association; and to dispense with such other business, as necessary. The order of business for a meeting shall be determined in advance by the President and subsequently adopted at a called meeting.

SECTION 3. Special Meetings. Special meetings of the membership may be called by the President or the Council. Such special meetings shall be held at a date, time and place as determined by the Council.

SECTION 4. Notice of Meetings. Written notice stating the date, time and place of any annual or special meeting shall be delivered no less than seven (7) days, nor more than 30 days, before the date of the meeting to each member entitled to vote at the meeting. In the case of removal of one

or more Council members, a merger, consolidation, dissolution or sale of assets, a written notice of no less than twenty (20) days or more than sixty (60) days before the date of the meeting will be given by, or at the direction of, the President, the Secretary, or the Council.

SECTION 5. Quorum. The quorum for the transaction of business at a meeting of members or special meeting shall be a majority of the members attending that meeting.

SECTION 6. Voting. Each member with voting rights shall be entitled to only one (1) vote. A majority of the votes present at a meeting where a quorum is present shall be necessary for the adoption of any matter voted upon by the members, except where otherwise provided by law, the articles of incorporation of the Association or these bylaws.

SECTION 7. Informal Action. Required action may be taken without a meeting if a consent in writing, setting forth the action taken, is signed by not less than the minimum number of members necessary to authorize such action at a meeting, except for dissolution of the Association, which must be voted on at a special meeting of the members entitled to vote.

**Article VII: OFFICERS AND THE COUNCIL**

SECTION 1. General Powers. The property, business and affairs of the Association shall be managed by the Council. The Council may adopt such rules and regulations for the conduct of its business as shall be deemed advisable and may, in the execution of the power granted, appoint such agents as necessary. In addition, the Council shall act as a Board of Censors for the trial of all alleged offenses against the bylaws. A report by the Chairman of the Council shall be made to the members at the annual meeting.

SECTION 2. Number, Tenure and Qualifications. The Council shall consist of the Past President, the Chairman of the Council (Immediate Past President), the President, the President-Elect, the Vice President, the Secretary/Treasurer, the Director of Continuing Medical Education, the Historian and three Councilors-At-Large. The Secretary/Treasurer Elect, the representative of the Board of Governors of the American College of Surgeons, representative of the Advisory Council for Cardiothoracic Surgery of the American College of Surgeons, the Editor of the Annals of Thoracic Surgery, the Chairman of the Program Committee, the Chairman of the Membership Committee, and the Chairman of the Postgraduate Program Committee shall attend the Council meetings without vote.

SECTION 3. Election. The eligible members will elect the Council. Officers shall be elected annually to serve a one-year term, except the Secretary/Treasurer whose term shall be for four years and the historian whose term shall be for four years and who can be re-elected. The President, Vice

President and Secretary/Treasurer are not eligible for re-election. The term of office of councilors-at-large shall be two years. Two Councilors shall be elected one-year and one Councilor the next year to replace the retiring members, unless a vacancy or vacancies has occurred, in which case an additional Councilor(s) shall be appointed by the President to fill the vacant term(s).

SECTION 4. Resignation. Any Council member may resign at any time by giving written notice to the President. Such resignation shall take effect when the notice is delivered, unless the notice specifies a future date. Another exception would be, unless otherwise specified therein, the acceptance of such resignation shall not be necessary to make it effective.

SECTION 5. Annual Meetings. The annual meeting of the Council shall be held at the time and place designated by the Council in connection with the annual members meeting.

SECTION 6. Regular Meetings. The Council may hold regular meetings at such place and at such times as designated by the Council.

SECTION 7. Special Meetings. Special meetings of the Council may be held at any place and time on the call of the President or at the request in writing of any three Council members.

SECTION 8. Notice of Meetings. Notice of special meetings of the Council shall be delivered by, or at the direction of, the Secretary/Treasurer to each Council member at least seven (7) days before the day on which the meeting is to be held. Notice may be waived in writing by a Council member, either before or after the meeting. Neither the business to be transacted at, nor the purpose of any special meeting of the Council, need be specified in the notice or waiver of notice of such meeting.

SECTION 9. Quorum. A majority of the Council members entitled to vote shall constitute a quorum for the transaction of business at any meeting of the Council.

SECTION 10. Manner of Acting. The act of a majority of the Council members at a meeting at which a quorum is present shall be the act of the Council, unless the act of a greater number is required by law, the articles of incorporation, or by these bylaws.

SECTION 11. Informal Action. Action may be taken by the Council without a meeting if a consent in writing, setting forth the action so taken, is signed by all the Council members.

SECTION 12. Participation at Meetings by Conference Telephone. Members of the Council, or of any committee designated by the Council, may take any action permitted or authorized by these bylaws by means of conference telephone, or similar telecommunications equipment, in which all persons participating in the meeting can

communicate with each other. Participation in such a meeting shall constitute presence in person at such meeting.

SECTION 13. Compensation. Council members, as such, shall not receive any stated compensation for their services on the Council, but the Council may, by resolution, authorize reimbursement for reasonable expenses incurred in the performance of their duties. The Council will occasionally review the reimbursement policies.

**Article VIII: OFFICERS AND EXECUTIVE DIRECTOR**

SECTION 1. Officers. The officers of the Association shall consist of the President, the President-Elect, the Vice President, the Secretary/Treasurer, the Chairman (Immediate Past President), the Past President, the Historian, and such other officers and assistant officers as may be elected in accordance with the provisions of this Article. The Council may elect or appoint such other officers as it shall deem necessary. These officers shall have the authority to perform such duties as may be prescribed from time-to-time by the Council.

SECTION 2. President. The President shall be the principal elected officer of the Association. The President shall preside at all meetings of the Association. The President shall appoint members to the standing committees and to any other special committee, which may be deemed necessary for the welfare of the association. The President shall perform all other duties appropriate to the conduct of the office. At the conclusion of the annual meeting, the retiring President shall automatically become a Councilor for a two-year term of office in the capacity of Chairman the first year and Past President the second year.

SECTION 3. President-Elect. The President-Elect shall participate in all the meetings and deliberations of the Council during the year elected and shall accede to the office of President the following year.

SECTION 4. Vice President. In the absence of the President, or in the event of his or her inability or refusal to act, the Vice President shall perform the duties of the President. When so acting, the Vice-President shall have all the powers, and be subject to all the restrictions, of the President. The Vice President shall perform such other duties as may be assigned by the President or by the Council.

SECTION 5. Secretary/Treasurer. As Secretary he/she shall: keep the minutes of the meetings of the members and of the Council in one or more books provided for that purpose; see that all notices are duly given in accordance with the provisions of these bylaws, or as required by law; be custodian of the Council's records; keep a register of the post office address of each member, which shall be furnished to the Secretary by such member; notify candidates of their

election to membership; and in general perform all duties incident to the office of Secretary, and such other duties that may be assigned by the President or by the Council. The administrative duties of the Secretary may be assigned, in whole or in part, to the Executive Director by the Council.

As Treasurer, he/she shall keep an account of all monies received and expended by the Association and shall make disbursements authorized by the Council. All sums received shall be deposited or invested in such bank, trust company, or other depositories authorized by the Council. The Treasurer shall perform all the duties incident to the office of Treasurer and such other duties as may be assigned by the President or by the Council. The administrative duties of the Treasurer may be assigned, in whole or in part by the Council, to the Executive Director. He/she shall present an annual report to the membership for audit.

SECTION 6. Secretary/Treasurer-Elect. The Secretary/Treasurer-Elect shall serve as understudy to the Secretary/Treasurer for a term of one year.

SECTION 7. Chairman. The immediate Past President shall be the Chairman of the Council and perform such duties as occasionally may be designated by the President or by the Council. Upon termination of the term of office as President, the President shall become Immediate Past President for a one-year term.

SECTION 8. Past President. The Past President shall serve on the Council and perform such duties as may be designated by the President, Chairman of the Council, or by the Council. Upon termination of the term of office as Immediate Past President, the Immediate Past President shall become Previous Past President for a one year term.

SECTION 9. Director of Continuing Medical Education. The Director of Continuing Medical Education shall be appointed by the President for a term of four years and shall oversee and coordinate the Program and Postgraduate Programs, and the administration aspects of continuing education, and chair the Continuing Education Committee.

SECTION 10. Executive Director. The administrative duties and day-to-day operation of the Association shall be conducted by a salaried staff head or firm employed or appointed by the Council. The Executive Director shall be responsible to the Council. The Executive Director shall have the authority to execute contracts on behalf of the Association and as approved by the Council. The Executive Director may carry out the duties of the Secretary of the Association and may carry out the duties of the Treasurer as directed by the Council. The Executive Director shall employ and may terminate the employment of staff members necessary to carry out the work of the Association and shall perform such other duties as may be specified by the Council.

SECTION 11. Historian. The Historian shall record the history of the Association, keep archives of the programs and minutes of the Business and Council meetings, and report the deaths of members at the annual business meeting. In addition, he/she shall perform all other duties appropriate to this office and other duties assigned by the President for Council.

**Article IX: COMMITTEES**

The President shall appoint committees as may be necessary for the proper conduct and management of the Association. The standing Committees of the Association shall be:

SECTION 1. Executive Committee. The Executive Committee shall consist of the officers of the Association and the Executive Director. The Executive Director shall be ex-officio, a member of the Executive Committee without the right to vote. The Executive Committee may exercise the authority of the Council in the management of the affairs of the Association during the intervals between meetings of the Council, subject at all times to the bylaws of the Association, and the prior resolutions, regulations and directives issued, adopted or promulgated by the Council. A majority of the members of the Executive Committee shall constitute a quorum for the transaction of business. Meetings may be called by the President or by any two Executive Committee members.

SECTION 2. Program Committee. The Program Committee shall consist of the President, the Director of Continuing Medical Education, the Secretary/Treasurer, and additional members appointed to the Program Committee. Appointment to the Program Committee shall be for a period of three years. Appointment(s) to this committee shall be made by the President each year. The senior member of the appointed members shall serve as Chairman. It shall be the duty of the committee to review the abstracts of scientific papers submitted by the members and arrange the program for the annual meeting. At least one author of each abstract for the regular scientific program should be a member of the association. No more than 25 percent of the papers presented at the annual meeting may be presented by authors who are not members, provided that such papers are of unusual merit.

SECTION 3. Postgraduate Program Committee. The Post-graduate Program Committee shall consist of the Director of Continuing Medical Education and appointed members. Appointment to the Postgraduate Program Committee shall be for a period of three years. Appointments to this committee shall be made by the President each year. The senior appointed member of the committee shall act as chair. It shall be the duty of this committee to arrange a Postgraduate Continuing Medical Education Program to

cover broad and varied aspects of thoracic surgery to be presented at the time of the annual meeting.

SECTION 4. Membership Committee. This committee shall consist of four members. Appointment to the Membership Committee shall be for a period of four years. One new appointee to this committee shall be made by the President each year. The senior member of the committee shall serve as Chairman. This committee shall receive applications for membership in the association and after consideration of the applicants may propose them to the Council for approval and to the membership for election.

SECTION 5. Continuing Medical Education Committee. This committee shall consist of the Chairman of the Postgraduate Committee, the Chairman of the Program Committee, and the Director of Continuing Medical Education who shall serve as Chairman. It shall be the duty of this committee to set up the objectives of the next annual meeting with the said objectives being presented for approval by the Council at their interim meeting and forwarded to members prior to the annual meeting.

SECTION 6. Nominating Committee. This committee shall consist of the four Immediate Past Presidents with the most senior Past President serving as Chairman. This committee shall prepare a slate of nominees for officers and Councilors for the following year. This report is submitted to the organization at its annual meeting. The recommendations of the Nominating Committee are not intended to exclude direct nominations from the floor.



SECTION 7. Other Committees. Other committees may be designated by a resolution adopted by a majority of the Council present at a meeting at which a quorum is present (Ad Hoc Committees may be designated by the President with approval of the Council). Except as otherwise provided in such resolution, members of each committee shall be members of the Association, and the President of the Association shall appoint the members thereof. Any member may be removed by the person or persons authorized to appoint such member whenever in their judgment the best interests of the Association shall be served by such removal.

SECTION 8. Term of Office. Each member of a committee shall continue as such until the next annual meeting of the Council or until a successor is appointed, unless the committee is terminated, or the member is removed from the committee, ceases to qualify as a member, or the member resigns from the committee.

SECTION 9. Vacancies. Vacancies in the membership of any committee may be filled by appointments made in the same manner as provided in the case of the original appointments.

SECTION 10. Quorum. Unless otherwise provided in the resolution of the Council designating a committee, a majority

of any committee shall constitute a quorum for committee action. The act of a majority of committee members present and voting at a meeting, at which a quorum is present, shall be the act of the committee.

SECTION 11. Participation at Meetings by Conference Telephone. Committee members may participate in and act at any committee meeting through the use of a conference telephoneor other communications equipment by means of which all persons participating in the meeting can communicate with each other. If the Chairman of a committee so orders, participation in such meetings shall constitute attendance at the meeting.

SECTION 12. Meetings of Committees. Subject to action by the Council, each committee by a majority vote of its members shall determine the time and place of meetings and the notice required.

SECTION 13. Informal Action. Any action required or taken at a meeting of a committee may be taken without a meeting if a consent in writing, setting forth the action so taken, is signed by all of the committee members.

SECTION 14. Rules. Each committee may adopt rules for its own government not inconsistent with these bylaws or with rules adopted by the Council.

**Article X: OFFICIAL ORGAN**

The Annals of Thoracic Surgery shall be the official publication of the Southern Thoracic Surgical Association. Papers read before the Association shall be forwarded to the Editor of The Annals of Thoracic Surgery for consideration for publication at the time requested by the Program Committee Chair and Editor of The Annals.

**Article XI: CONTRACTS, CHECKS, DEPOSITS AND FUNDS, BONDING**

SECTION 1. Contracts. The Council may authorize any officer or officers, agent or agents of the Association, in addition to the officers so authorized by these bylaws, to enter into any contract or execute and deliver any instrument in the name of, and on behalf of, the Association. Such authority may be general or confined to specific instances.

SECTION 2. Depositories. All funds of the Association not otherwise employed shall be deposited to the credit of the Association in such banks, trust companies or other depositories as the Council may designate.

SECTION 3. Checks, Drafts, Notes, Etc. All checks, drafts or other orders for the payment of money and all notes or other evidences of indebtedness issued in the name of the Association shall be signed by such officer or officers, or agent or agents, of the Association and in such manner as shall be determined by resolution of the Council.

SECTION 4. Bonding. The Council shall provide for the bonding of such officers and employees of the Association, as needed.

SECTION 5. Delivery of Notice. Any notices required to be delivered pursuant to these bylaws shall be deemed to be delivered when transferred or presented in person or deposited in the United States mail addressed to the person at his/her or its address as it appears on the records of the Association, with sufficient first-class postage prepaid thereon.

SECTION 6. Investments. Unless otherwise specified by the terms of a particular gift, bequest or devise, grant or other instrument, the funds of the Association may be invested, in such manner as the Council may deem advantageous, without regard to restrictions applicable to trusts or trust funds.

**Article XII: BOOKS AND RECORDS**

The Association shall keep correct and complete books and records of accounts and shall also keep minutes of the proceedings of its members, Council, and committees having any of the authority of the Council, and shall keep at the registered or principal office a record giving the names and addresses of the members entitled to vote. All books and records of the Association may be inspected by any member, or his or her agent or attorney, for any proper purpose at any reasonable time.

**Article XIII: FISCAL YEAR**

The fiscal year of the Association shall be established by the Council.

**Article XIV: WAIVER OF NOTICE**

Whenever any notice is required to be given under the provisions of the General Not For Profit Corporation Act of the State of Illinois or under the provisions of the articles of incorporation or the bylaws of the Association, a waiver in writing signed by the person or persons entitled to such notice, whether before or after the time stated therein, shall be deemed equivalent to the giving of such notice. Attendance at any meeting shall constitute waiver of notice unless the person at the meeting objects to the holding of the meeting because proper notice was not given.

**Article XV: INDEMNIFICATION OF DIRECTORS, OFFICERS, EMPLOYEES AND AGENTS; INSURANCE.**

SECTION 1. Right to Indemnification. Each person who was or is a party or is threatened to be made a party to, or is involved in, any action, suit or proceeding—whether civil, criminal, administrative or investigative—by reason of the fact that he/she, or a person of whom he/she is the legal representative, is or was a director, officer, employee or agent

of the Association, or is or was serving at the request of the Association, shall be indemnified and held harmless by the Association to the fullest extent authorized by the laws of Illinois against all costs, charges, expenses, liabilities and losses reasonably incurred or suffered by such person in connection with and such indemnification shall continue to a person who has ceased to be associated with the Association. This includes attorneys' fees, judgments, fines, ERISA excise taxes or penalties and amounts paid, or to be paid, in settlement. The right to indemnification conferred in this Article XV shall be a contract right and shall include the right to be paid by the Association the expenses incurred in defending any such proceeding in advance of its final disposition. For the purpose of determining the reasonableness of indemnifiable expenses, the fees and expenses of separate counsel from counsel for the Association, or other joint defendants being indemnified by the Association, shall not be indemnifiable unless there exists a bonafide conflict of interest.

SECTION 2. Right of Claimant to Bring Suit. If a claim under Section 1 of Article XV is not paid in full by the Association within a reasonable amount of time after a written claim has been received by the Association, the claimant may at any time thereafter bring suit against the Association to recover the unpaid amount of the claim and, if successful in whole or in part, the claimant shall also be entitled to be paid the expenses of prosecuting such a claim. It shall be a defense to any action that the claimant has failed to meet a standard of conduct which makes it permissible under Illinois law for the Association to indemnify the claimant for the amount claimed. But the burden of proving such defense shall be on the Association.

SECTION 3. Non-Exclusive of Rights. The right to indemnification and the payment of expenses incurred in defending a proceeding in advance of its final disposition conferred in Article XV shall not be exclusive of any other right which any person may have or hereafter acquire under any statute, provision of the articles of incorporation, bylaws, agreement, vote of members or disinterested directors or otherwise.

SECTION 4. Insurance. The Association shall maintain insurance to the extent of availability at commercial reasonable rates, at its expense, to protect itself and any director, officer, employee or agent of the Association or another corporation, partnership, joint venture, trust or other enterprise against any expense, liability or loss, whether or not the Association would have the power to indemnify such person against such expense, liability or loss under Illinois law.

SECTION 5. Expenses as a Witness. To the extent that any director, officer, employee or agent of the Association is by reason of such position, or a position with another entity at the request of the Association, a witness in any proceeding, he shall be indemnified against all costs and expenses actually and reasonably incurred by him or on his behalf in connection therewith.

SECTION 6. Notification. If the Association has paid indemnity or has advanced expenses under this Article XV to a director, officer, employee or agent, the Association shall report the indemnification or advance in writing to the members with or before the notice of the next meeting of the members.

SECTION 7. Effect of Amendment. Any amendment, repeal or modification of any provision of this Article XV by the members or the directors of the Association shall not adversely affect any right or protection of a director or officer of the Association existing at the time of such amendment, repeal or modification.

**Article XVI: DISSOLUTION**

Upon the dissolution of the Association, and after payment of all indebtedness of the Association, any remaining funds, investments and other assets of the Association shall be distributed to such organization or organizations which are then qualified as exempt from taxation under Section 501(c) 6 of the Internal Revenue Code of 1986, as amended (or the corresponding provision of any future Internal Revenue Law of the United States). This distribution shall only occur if the purposes and objectives of such organization(s) are similar to the purposes and objectives of the Association, as may be determined by vote of the then voting members of the Association.



**Article XVII: AMENDMENTS**

These bylaws may be altered, amended, or repealed at the time of the annual meeting by a two-thirds vote of the membership present, provided that the amendment has been presented to the membership in writing at least 30 days prior to the time of the annual meeting.

**Article XVIII: PARLIAMENTARY AUTHORITY**

The deliberations of the Association, Council, and committees shall be governed by the parliamentary rules and usages contained in the then current edition of “Roberts Rules of Order, Newly Revised”, when not in conflict with the bylaws of the Association.

## RELATIONSHIP DISCLOSURE INDEX

The following presenters have indicated, in accordance with the Accreditation Council for Continuing Medical Education Standards and the STSA Disclosure Policy, that they have a financial or other relationship with a healthcare-related business or other entity whose products or services may be discussed in, or directly affected in the marketplace by the educational program/product under consideration. Listed too are abstracts whose content describes the use of a device, product, or drug, that is not FDA approved, or the off-label use of an approved device, product, or drug.

Unless noted in this program book or verbally by the speakers, speakers have no relevant financial relationships to disclose and will only be presenting information on devices, products, or drugs that are FDA approved for the purposes they are discussing.

**Wednesday, November 5, 2008**

**2V.** *Aortic Valve Bypass Surgery - Beating Heart Therapy for Aortic Stenosis*
- **James Gammie** – Correx, Inc.: Stockholder; Medtronic, Inc.: Consultant (heart valves)

**7V.** *Off-Pump Transapical Aortic Valve Implantation*
- **Mirko Doss** – Consultant to Edwards Lifesciences
- Content describes the use of Edwards Lifesciences catheter deliverable aortic valve, which is not FDA approved

**Thursday, November 6, 2008**

**Postgraduate Program**
*Aprotinin is Good*

- **Carl Lewis Backer** – Content describes Aprotinin's off-label use in pediatrics.

**2.** *Transapical Aortic Valve Implantation: From On-Pump to Off-Pump*
- Content describes the use of Edwards Lifesciences catheter deliverable aortic valve, which is not FDA approved

**5.** *Utility of Removable Esophageal Self-Expanding Covered Metal Stents for Leak and Fistula Management*
- Content describes the off-lable use of an esophageal stent
- **Richard Freeman (Discussant)** – Will discuss FDA approved Polyflex Stent off-label use for esophageal restoration and fistula

**6.** *Surgical Correction Of Atrial Fibrillation With The Cryomaze Procedure: long-term Outcomes Assessed With Continuous Outpatient Telemetry*
- **James Gammie** – Consultant to ATS, Inc.

**8.** *Quality of Life and Mood in the Elderly After Recovery Following Major Lung Resection*
- **Todd Demmy (Discussant)** – Receives compensation for intellectual property - Corvidien (Surgical Staplers)

**9.** *Short and Long-Term Outcomes of Aortic Valve Surgery in Patients with Impaired Left Ventricular Function*
- **Donald Glower (Discussant)** – Research principal investigator – St. Jude Medical, Evalve, and Edwards Lifesciences (Valves)

**10.** *The Safe Removal of Chest Tubes Despite an Air Leak*
- **Robert J. Cerfolio** – Speaker or consultant with Eplus Healthcare, Ethicon, Neomend, Millicore, Telefelx, OSI Pharmaceutical, Closure, Medela, Johnson and Johnson and Deknatel.

**1B.** *Atrial Cells with Regenerative Potential. Preliminary Study in a Pediatric Population*
- **Jeffrey Jacobs** – Receives a grant from Children's Heart Foundation as a Principal Investigator; Physician advisor and shareholder - Cardioaccess (data base system)



**Friday, November 7, 2008**

**15.** *Hybrid Repair of Aneurysms of the Transverse Aortic Arch: Mid-Term Results*
- **G. Chad Hughes** – Speaker for Gore - TAG Graft; Speaker for Vascutek - Vascutek Graft
- Content refers to the off-label use of Gore TAG Thoracic Endograft for Hybrid Repair

- **Joseph Coselli (Discussant)** – Educational Grants - Terumo (Aortic Grafts); Educational Grants and Clinical trials - St. Jude Medical (Heart Valves); Educational Grants – Edwards Lifesciences (Heart Valves); Clinical Trial – Cook Medical (Endovascular Stent Grafts); Educational Grants – W.L. Gore (Endovascular Stent Grafts)

**17.** *Intrapleural Bupivacaine Delivered by Chest Tubes Improves Pain Control and Decreases 24 Hr Opioid Use After Vats*
- **Todd Demmy** – Receives compensation for intellectual property – Corvidien (Surgical Staplers)

**19.** *Case-Control Comparison of 5-Year Survival in Patients with Lung Cancer Undergoing Thoracoscopic and Open Lobectomy*
- **John Roberts** – Instructor with Covidien

**20.** *More Lesions for Atrial Fibrillation at the Time of Surgery May Mean Fewer Treatments in Follow-Up*
- **Richard Lee** – Consultant for Medtronic - Bipolar Radiofrequency Ablation
- **Patrick McCarthy** – Consultant for Medical CV, Edwards
- Content refers to the FDA approved bipolar radiofrequency clamp used in the MAZE procedure. Approved for soft tissue use
- **Harold Roberts (Discussant)** – Speaker and research grants – ATS Medical (Cryocath)

**23.** *Favorable Early Outcomes for Patients with Extended Indications for Thoracic Endografting*
- Content refers to the FDA approved Gore TAG Thoracic Endoprosthesis and Cook Zenith Iliac extender Endovascular Grafts off-label use in endovascular repair of thoracic aortic transaction and dissection
- **G. Chad Hughes (Discussant)** – Speaker – Gore (TAG Graft)

**24.** *Proximal Thoracic Stent Grafting Via the Open Arch During Standard Repair for Acute Debakey I Aortic Dissection Prevents Development of Dissecting Thoracoabdominal Aortic Aneurysms*
- **Joseph Bavaria** – Consultant - W.L. Gore and Assoc. Inc.
- Content refers to the FDA approved use of Gore TAG's off-label use for treatment of aortic dissection

- **Marc Moon (Discussant)** – Speaker – Edwards Lifesciences

**25.** *Midterm Results for Endovascular Repair of Complicated Acute and Chronic Type B Aortic Dissection*
- Content refers to Gore TAG Endovascular Graft's off-label use in descending thoracic aortic dissection

**27.** *Targeted Renal Therapy in High-Risk Cardiac Surgery: Early Safety and Feasibility with a Novel Treatment for Renal Function Preservation During Coronary Artery Bypass Grafting*
- **David Allie** – Stockholder – Scientific Advisory Board and Consultant to Flowmedica
- **Craig Walker** – Consultant to Flowmedica

**29.** *Which Type of Diffusing Capacity of the Lung for Carbon Monoxide (DLCO) Percent Predicted Value is the Best Predictor of Morbidity and Mortality After Pulmonary Resection?*
- **Robert J. Cerfolio** – Speaker or consultant with Eplus Healthcare, Ethicon, Neomend, Millicore, Telefelx, OSI Pharmaceutical, Closure, Medela, Johnson and Johnson and Deknatel

**31.** *Myotomy for Megaesophagus: The Risk for Future Esophageal Resection*
- **Daniel Miller** – Consultant with Ethicon Endosurgery and Synovis, Inc; Speaker with Power Medical, Inc.

**36.** *Minimally Invasive, Intrapericardial Implantable Cardioverter Defibrillator Coil Array System: A Novel Approach to Ventricular Tachyarrhythmia Therapy in Children*
- Content refers to the FDA approved Medtronic Sprint AICD lead's off-label use for Epicardial placement

**41.** *Trends in the Surgical Treatment of Mitral Valve Disease*
- **W. Randolph Chitwood (Discussant)** – Consultant with Edwards Lifesciences (Valves), Consultant with Intuitive Surgery (Robotics)

**42.** *An Integrated Approach to Improve Quality Outcomes in a Cardiac Surgery Program*
- **James Edgerton –** Physician investor in the specialty hospital

- **William Ryan –** Physician investor in the specialty hospital
- **Michael Mack –** Physician investor in the specialty hospital

**44.** *Thoracic Aortic Endovascular Repair for Infectious Aortic Pathology: A Long Term Analysis*
- **Himanshu Patel** – Speaker with WL Gore (TAG) and Medtronic (Talent)
- **David Williams** – Principal investigator for FDA sponsored trials for thoracic endografts for Gore, Medtronic, and Cook
- Content describes the off-label use of Gore TAG graft
- **Thomas Beaver (Discussant)** – Will discuss the FDA approved thoracic stent graft's off-label use for infectious pathology

**46.** *Early Experience with Robotic-Video-Assisted Thoracoscopic Anatomical Lung Resection*
- **Mark Dylewski** – Clinical educator with Intuitive Surgical (da vinci surgery system)

**Saturday, November 8, 2008**

**53.** *Contemporary Outcomes of Surgery for Infective Mitral Valve Endocarditis*
- **James Gammie –** Consultant with Medtronics and Edwards Lifesciences

**55.** *Surgical Treatment of Mitral Regurgitation in North America 2000-2006; Increased Adoption of Mitral Valve Repair*
- **Michael Petracek (Discussant)** – Speaker and Advisory Board for Medtronic and St. Jude

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