AMERICAN ASSOCIATION OF ENDOCRINE SURGEONS

THIRTY-NINTH ANNUAL MEETING

DURHAM, NORTH CAROLINA | MAY 6-8, 2018

THANK YOU

Thank you to our AAES 2018 Meeting Sponsors! The American Association of Endocrine Surgeons gratefully acknowledges the generous support without which this meeting would not be possible.

AAES wishes to recognize and thank the following companies for their ongoing support through educational grants:

Ethicon
Medtronic
Neurovision
Sanofi Genzyme

AAES wishes to recognize and thank the following companies for their marketing support:

Platinum Level:
Duke University
University of Virginia

Additional Sponsors:
Interpace Diagnostics
Sonic Healthcare USA
University of North Carolina

AAES gratefully acknowledges the generous support of the following exhibiting companies*:
AMENSUPPORT
American Thyroid Association
Applied Medical
Corcept Therapeutics
Ethicon US LLC
Exelixis
Graves' Disease & Thyroid Foundation
Hitachi Healthcare
Interpace Diagnostics
KenyaRelief.org
Medtronic
Mitaka USA
Neurovision Medical Products
Olympus America Inc.
Sonic Healthcare USA
Stryker
Thyroid Cancer Survivors' Association, Inc.

**as of April 3, 2018*

SPECIAL THANKS TO THE 2018 PROGRAM COMMITTEE

Wen Shen, MD, Program Chair

Martha Zeiger, MD, President

Rebecca S. Sippel, MD, Secretary

Paul G. Gauger, MD, Recorder

Julie Ann Sosa, MD, MA, Local Arrangements Co-Chair

Sanziana Roman, MD, Local Arrangements Co-Chair

Geeta Lal, MD, MSc, Poster Chair

Ian Ganly, MD, PhD

Avital Harari, MD

David Hughes, MD

Emad Kandil, MD

Rachel Kelz, MD, MSCE

Carrie Lubitz, MD

Haggi Mazeh, MD

Peter Joseph Mazzaglia, MD

John Phay, MD

David F. Schneider, MD

Joyce Shin, MD

Scott Wilhelm, MD

THE AMERICAN ASSOCIATION OF

ENDOCRINE SURGEONS

Thirty-Ninth Annual Meeting

MAY 6-8, 2018

American Association of Endocrine Surgeons
201 East Main Street, Suite 1405, Lexington, KY 40507
T: 859-402-9810 ● F: 859-514-9166
E: info@endocrinesurgery.org
www.endocrinesurgery.org

AAES FUTURE MEETINGS

April 7-9, 2019
Los Angeles, California
Michael W. Yeh, MD

2020
Birmingham, Alabama
John Porterfield, MD

2021
Cleveland, Ohio
Vikram Krishnamurthy, MD

TABLE OF CONTENTS

Future Meetings 2
Officers, Council & Committees 4
Past Officers 7
Oliver Cope Meritorious Achievement Award 9
Honorary Members 11
Resident/Fellow Research Award Winners
and Poster Competition Winners 12
2017-2018 New Members 19
Contributors to the AAES Foundation 22
Past Meetings 24
Special Sessions 27
Historical Lecturer 29
Historical Lecturers at Recent Meetings..... 30
Orlo & Carol Clark Distinguished Lecturer in
Endocrine Surgery 31
Invited Lecturers at Recent Meetings 32
Conference Information 35
Accreditation 36
Disclosure Information 38
Hotel Information 43
Agenda 44
Scientific Program 53
Abstracts 65
Poster Displays 100
Geographical Membership Directory 113
Notes 131
In Memoriam 140

OFFICERS, COUNCIL & COMMITTEES

PRESIDENT
Martha A. Zeiger, MD

PRESIDENT-ELECT
Herbert Chen, MD

VICE PRESIDENT
Carmen Solorzano, MD

RECORDER
Paul Gauger, MD

SECRETARY
Rebecca S. Sippel, MD

TREASURER
Sareh Parangi, MD

PAST PRESIDENT
Peter Angelos, MD, PhD

PAST PRESIDENT
Steven Libutti, MD

PAST PRESIDENT
Gerard Doherty, MD

COUNCIL
Peter Angelos, MD, PhD
Gerard Doherty, MD
James Howe, MD
James Lee, MD
Steven Libutti, MD
Barbra Miller, MD
Kepal N. Patel, MD
Wen Shen, MD, MA
Michael Starks, MD

CESQIP COMMITTEE
William B. Inabnet, III, MD — Chair
Bridget Brady, MD
Travis Cotton, MD
Peter Czako, MD
Gerard Doherty, MD
Aarti Mathur, MD
David McAneny, MD
Mira Milas, MD
Jennifer Rosen, MD
David F. Schneider, MD
Alex Shifrin, MD
Linwah Yip, MD

EDUCATION COMMITTEE
Roy Phitayakorn, MD — Chair
Glenda Callender, MD
Dina Elaraj, MD
Erin Angela Felger, MD
Brenessa Lindeman, MD
William Mendez, MD
Steven Rodgers, MD
Randall Scheri, MD
Philip William Smith, MD

FELLOWSHIP COMMITTEE
Tracy S. Wang, MD, MPH — Chair
Peter Angelos, MD, PhD
Tobias Carling, MD, PhD
Sally E. Carty, MD
Alan Dackiw, MD
Thurston Drake, MD
Thomas Joseph Fahey III, MD
Paul Graham, MD
Miguel F. Herrera, MD, PhD
William B. Inabnet, III, MD
Electron Kebebew, MD
Terry Lairmore, MD
James Lee, MD
John Lew, MD
Melanie Lyden, MD
Aarti Mathur, MD
Barbra Miller, MD
Lilah Morris, MD
Matthew Nehs, MD
Sareh Parangi, MD
Janice L. Pasieka, MD
Nancy D. Perrier, MD
John Roland Porterfield, MD
Jason Prescott, MD
Richard Allen Prinz, MD
Sanziana A. Roman, MD

OFFICERS, COUNCIL & COMMITTEES CONTINUED

Wen T. Shen, MD, MA
Allan Siperstein, MD
Rebecca S. Sippel, MD
Hyunsuk Suh, MD
Thomas Wang, MD
Michael W. Yeh, MD
Linwah Yip, MD
Martha A. Zeiger, MD

FELLOWSHIP ACCREDITATION COMMITTEE
Brian D. Saunders, MD — Chair
Douglas B. Evans, MD
Melanie Lyden, MD
Susbhash Patel, MD
Christopher Raeburn, MD
Joe Sharma, MD
Allan Siperstein, MD
Rebecca S. Sippel, MD
Carmen Solorzano, MD
Tracy S. Wang, MD, MPH
Quan-Yang Duh, MD
Martha Zeiger, MD

INFORMATION & TECHNOLOGY COMMITTEE
Barbra S. Miller, MD — Chair
Todd D. Beyer, MD
Michael Campbell, MD
Adam Scott Kabaker, MD
Vikram Krishnamurthy, MD
Leon Kushnir, MD
Cortney Lee, MD
Drew Shirley, MD
James W. Suliburk, MD
David James Winchester, MD

LOCAL ARRANGEMENTS COMMITTEE CO-CHAIRS
Sanziana Roman, MD
Julie Ann Sosa, MD, MA

MEMBERSHIP COMMITTEE
James Lee, MD — Chair
James Howe, MD
Julie Miller, BA, MD, FRACS
Michael Starks, MD

ENDOCRINE SURGERY UNIVERSITY
Mira M. Milas, MD — Chair

NOMINATING COMMITTEE
Gerard E. Doherty, MD — Chair
Peter Angelos, MD, PhD
Steven K. Libutti, MD
Martha Zeiger, MD

PROGRAM COMMITTEE
Wen Shen, MD, MA — Chair
Ian Ganly, MD, PhD
Paul Gauger, MD
Avital Harari, MD
David Hughes, MD
Emad Kandil, MD
Rachel Kelz, MD
Geeta Lal, MD — Poster Chair
Carrie Lubitz, MD
Haggi Mazeh, MD
Peter Joseph Mazzaglia, MD
John Phay, MD
David F. Schneider, MD
Joyce Shin, MD
Rebecca S. Sippel, MD
Scott Wilhelm, MD
Martha Zeiger, MD

OFFICERS, COUNCIL & COMMITTEES CONTINUED

RESEARCH COMMITTEE
Kepal Patel, MD — Chair
Eren Berber, MD
Denise Carneiro-Pla, MD
Phil Haigh, MD
Farah Karipineni, MD
Raymon Grogan, MD
Naris Nilubol, MD
Insoo Suh, MD
Tina Yeh, MD

COMMUNITY-BASED SURGEONS COMMITTEE
Michael Starks, MD — Chair
David N. Bimston, MD
James Broome, MD
Michael Johnston, MD
Christina Lynn Maser, MD
Julie F. McGill, MD
Sarah Oltmann, MD
Michael Sullivan, MD
Kristin Wagner, MD
Kaare Weber, MD

AD HOC GUIDELINES TASKFORCE
Michael Yeh, MD — Chair
Tobias Carling, MD
Dawn Elfenbein, MD
James Lee, MD
Carrie Lubitz, MD
Scott Wilhelm, MD
Linwah Yip, MD

AACE REPRESENTATIVE
David N. Bimston, MD

ATA REPRESENTATIVE
Michael Yeh, MD

ENDOCRINE SOCIETY LIAISON
Cord Sturgeon, MD

AMA ENDOCRINE SECTION COUNCIL REPRESENTATIVE
Steven A. De Jong, MD

AMERICAN BOARD OF SURGERY SURGICAL ONCOLOGY BOARD
Gerard M. Doherty, MD

AMERICAN COLLEGE OF SURGEONS BOARD OF GOVERNORS
Janice L. Pasieka, MD

PAUL LOGERFO COMMITTEE
Jack Monchik, MD — Chair
John A. Chabot, MD

AAES FOUNDATION
Geoffrey B. Thompson, MD — Chair
Jack Monchik, MD — Co-Chair
Gerard M. Doherty, MD
John A. Olson, Jr., MD, PhD
Janice L. Pasieka, MD
Nancy D. Perrier, MD
Allan Siperstein, MD

PAST OFFICERS

Year	President	Vice President
2017-2018	Martha Zeiger	Carmen Solorzano
2016-2017	Peter Angelos	Samuel Snyder
2015-2016	Steven K. Libutti	Douglas L. Fraker
2014-2015	Gerard Doherty	William B. Inabnet, III
2013-2014	Sally E. Carty	Julie Ann Sosa
2012-2013	Miguel F. Herrera	Allan Siperstein
2011-2012	Ashok R. Shaha	Thomas J. Fahey, III
2010-2011	Douglas B. Evans	Gerard M. Doherty
2009-2010	Janice L. Pasieka	Jeffrey E. Lee
2008-2009	Michael J. Demeure	Jeffrey F. Moley
2007-2008	Geoffrey B. Thompson	Terry C. Lairmore
2006-2007	Christopher R. McHenry	John B. Hanks
2005-2006	Robert Udelsman	Collin J. Weber
2004-2005	John A. Kukora	Andrew W. Saxe
2003-2004	Paul LoGerfo	Ashok R. Shaha
2002-2003	Quan-Yang Duh	Gary B. Talpos
2001-2002	Clive S. Grant	Miguel F. Herrera
2000-2001	Barbara K. Kinder	Martha A. Zeiger
1999-2000	Jay K. Harness	John S. Kukora
1998-1999	George L. Irvin, III	Barbara K. Kinder
1997-1998	Blake Cady	E. Christopher Ellison
1996-1997	Jon A. van Heerden	George L. Irvin, III
1995-1996	Richard A. Prinz	Jeffrey A. Norton
1994-1995	John M. Monchik	Jon A. van Heerden
1993-1994	Orlo H. Clark	Glen W. Geelhoed
1992-1993	Robert C. Hickey	Patricia J. Numann
1991-1992	Stuart D. Wilson	Joseph N. Attie
1990-1991	Caldwell B. Esselstyn	Brown M. Dobyns
1989-1990	Colin G. Thomas, Jr.	Carl R. Feind
1988-1989	John R. Brooks	Melvin A. Block
1987-1988	Edward Paloyan	Caldwell B. Esselstyn
1986-1987	Oliver Beahrs	Robert C. Hickey
1985-1986	Chiu-An Wang	Edward Paloyan
1984-1985	Leonard Rosoff	John M. Monchik
1983-1984	Stanley R. Friesen	John A. Palmer
1982-1983	Edwin L. Kaplan	Blake Cady
1981-1982	Norman W. Thompson	Orlo H. Clark
1980-1981	Norman W. Thompson	Orlo H. Clark

PAST OFFICERS CONTINUED

Year	Secretary *(prev. Secretary-Treasurer)*	Recorder	Treasurer
2017-2018	Rebecca S. Sippel	Paul Gauger	Sareh Parangi
2016-2017	Rebecca S. Sippel	Cord Sturgeon	Sareh Parangi
2015-2016	Rebecca S. Sippel	Cord Sturgeon	
2014-2015	Nancy D. Perrier	Cord Sturgeon	
2013-2014	Nancy D. Perrier	Herbert Chen	
2012-2013	Nancy D. Perrier	Herbert Chen	
2011-2012	Peter Angelos	Herbert Chen	
2010-2011	Peter Angelos	Steven K. Libutti	
2009-2010	Peter Angelos	Steven K. Libutti	
2008-2009	Sally E. Carty	Steven K. Libutti	
2007-2008	Sally E. Carty	Douglas B. Evans	
2006-2007	Sally E. Carty	Douglas B. Evans	
2005-2006	Janice L. Pasieka	Douglas B. Evans	
2004-2005	Janice L. Pasieka	Geoffrey B. Thompson	
2003-2004	Janice L. Pasieka	Geoffrey B. Thompson	
2002-2003	Christopher R. McHenry	Geoffrey B. Thompson	
2001-2002	Christopher R. McHenry	Michael J. Demeure	
2000-2001	Christopher R. McHenry	Michael J. Demeure	
1999-2000	Paul LoGerfo	Michael J. Demeure	
1998-1999	Paul LoGerfo	Quan-Yang Duh	
1997-1998	Paul LoGerfo	Quan-Yang Duh	
1996-1997	Jay K. Harness	Quan-Yang Duh	
1995-1996	Jay K. Harness	George L. Irvin, III	
1994-1995	Jay K. Harness	George L. Irvin, III	
1993-1994	Blake Cady	George L. Irvin, III	
1992-1993	Blake Cady	Robert D. Croom, III	
1991-1992	Blake Cady	Robert D. Croom, III	
1990-1991	Richard A. Prinz	Robert D. Croom, III	
1989-1990	Richard A. Prinz	Jon A. van Heerden	
1988-1989	Richard A. Prinz	Jon A. van Heerden	
1987-1988	Stuart D. Wilson	Jon A. van Heerden	
1986-1987	Stuart D. Wilson		
1985-1986	Stuart D. Wilson		
1984-1985	Stuart D. Wilson		
1983-1984	John M. Monchik		
1982-1983	John M. Monchik		
1981-1982	John M. Monchik		
1980-1981	John M. Monchik		

OLIVER COPE MERITORIOUS ACHIEVEMENT AWARD

In April of 1984 at the American Association of Endocrine Surgeons Meeting in Kansas City, Drs. Edward Kaplan, Jack Monchik, Leonard Rosoff, Norm Thompson and Stuart Wilson proposed to the Council a new achievement award. The award honors a member of the AAES in recognition for contributions in the field of endocrine surgery as an investigator, teacher and clinical surgeon. It is not an annual award but is to be given to members of our Association who truly aspire to the spirit of this award.

On April 15, 1985 at the annual meeting of the AAES in Toronto, our President, Leonard Rosoff announced the first member to receive this award, Dr. Oliver Cope. In giving this award to Dr. Cope the decision of the Council was that from this day forward the award would be known as the Oliver Cope Meritorious Achievement Award for the American Association of Endocrine Surgeons.

Oliver Cope, MD
Professor of Surgery, Harvard University and the Massachusetts General Hospital
Awarded in Ontario in April 1985.

Stanley R. Friesen, MD, PhD
Professor of Surgery, University of Kansas
Awarded in Detroit, MI in April 1994.
Dr. Friesen served as the President of our Association in 1983.

Norman W. Thompson, MD
Henry King Ransom Professor of Surgery, University of Michigan
Awarded in Atlanta, GA in April 2001.
Dr. Thompson served as our inaugural President in 1980 and 1981.

Jon A. van Heerden, MD
Professor of Surgery Mayo Clinic
Awarded in Charlottesville, NC in April 2004.
Dr. van Heerden served as our Recorder from 1987-1989, as our Vice-President in 1994, and as President in 1996.

Orlo H. Clark, MD
Professor of Surgery, UCSF Mount Zion Medical Center
Awarded in New York, NY in May 2006.
Dr. Clark served as our inaugural Vice-President in 1980 and 1981, and as President in 1993.

Edwin L. Kaplan, MD
Professor of Surgery, University of Chicago
Awarded in Madison, WI in May 2009.
Dr. Kaplan served as our President in 1982.

OLIVER COPE MERITORIOUS ACHIEVEMENT AWARD CONTINUED

George L. Irvin, III, MD
Professor Emeritus of Surgery, University of Miami
Awarded in Pittsburgh, PA in April 2010.
Dr. Irvin served as our Recorder from 1993-1996, as Vice-President in 1996, and as President in 1998

Stuart D. Wilson, MD
Professor Emeritus of the Department of Surgery, Medical College of Wisconsin
Awarded in Baltimore, MD in April 2016
Dr. Wilson served as our Secretary-Treasurer from 1984-1988 and President from 1991-1992.

Oliver Cope, MD

Stanley R. Friesen, MD, PhD

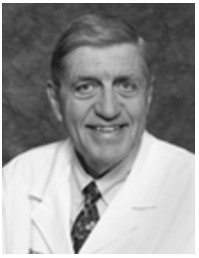
Norman W. Thompson, MD

Jon A. van Heerden, MD

Orlo H. Clark, MD

Edwin L. Kaplan, MD

George L. Irvin, III, MD



Stuart D. Wilson, MD

HONORARY MEMBERS

Individuals who have made outstanding contributions to the discipline of Endocrine Surgical Disease:

J. Aidan Carney, Pathologist

Stuart D. Flynn, Pathologist

Ian D. Hay, Endocrinologist

Virginia A. LiVolsi, Pathologist

Frank LoGerfo, Surgeon

A. G. E. “Ace” Pearse, Endocrinologist

Thomas S. Reeve, Endocrine Surgeon

F. John Service, Endocrinologist

Britt Skogseid, Endocrinologist

R. Michael Tuttle, Endocrinologist

William F. Young, Endocrinologist

RESIDENT/FELLOW RESEARCH AWARD WINNERS & POSTER COMPETITION WINNERS

The AAES Resident/Fellow Research Award was established in 1990 to encourage interest in endocrine surgery by those training as students and residents in general surgery. Presented work may be honored in either the Clinical or Basic Research categories.

The AAES Poster Competition was established in 2007.

1990

Michael J. Demeure — San Francisco, California
"Actin Architecture of Cultured Human Thyroid Cancer Cells: Predictor of Differentiation?"

Gerard M. Doherty — Bethesda, Maryland
"Time to Recovery of the Hypothalamic-Pituitary-Adrenal Axis After Curative Resection of Adrenal Tumors in Patients with Cushing's Syndrome"

1992

Rodney Pommier — New York, New York
"Eleven Year Experience with Adrenocortical Carcinoma"

1996

Jennifer Meko — St. Louis, Missouri
"Evaluation of Somatostatin Receptor Scintigraphy in Detecting Neuroendocrine Tumors"

Beth A. Ditkoff — New York, New York
"Detection of Circulating Thyroid Cells in Peripheral Blood"

1997

Herbert Chen — Baltimore, Maryland
"Implanted Programmable Insulin Pumps: 153 Patient Years of Surgical Experience"

K. Michael Barry — Rochester, Minnesota
"Is Familial Hyperparathyroidism a Unique Disease"

RESIDENT/FELLOW RESEARCH AWARD WINNERS & POSTER COMPETITION WINNERS CONTINUED

1998

Julie Ann Sosa — Baltimore, Maryland
"Cost Implications of the Different Management Strategies for Primary Hyperparathyroidism in the US"

David Litvak — Galveston, Texas
"A Novel Cytotoxic Agent for Human Carcinoid"

1999

Andrew Feldman — Bethesda, Maryland
"Results of Heterotrophic Parathyroid Autotransplantation: A 13-Year Experience"

Alan Dackiw — Houston, Texas
"Screening for MENI Mutations in Patients with Atypical Multiple Endocrine Neoplasia"

2000

Electron Kebebew — San Francisco, California
"ID1 Proteins Expressed in Medullary Thyroid Cancer"

2001

Nestor F. Esnaola — Houston, Texas
"Optimal Treatment Strategy in Patients with Papillary Thyroid Cancer: A Decision Analysis"

Katherine T. Morris — Portland, Oregon
"High Dehydroepiandrosterone-Sulfate Predicts Breast Cancer Progression During New Aromatase Inhibitor Therapy and Stimulates Breast Cancer Cell Growth in Tissue Culture: A Renewed Role for Adrenalectomy"

2002

Rasa Zarnegar — San Francisco, California
"Increasing the Effectiveness of Radioactive Iodine Therapy in the Treatment of Thyroid Cancer Using Trichostatin A (TSA), A Histone Deacetylast (HDAC)"

Denise M. Carneiro — Miami, Florida
"Rapid Insulin Assay for Intraoperative Confirmation of Complete Resection of Insulinomas"

RESIDENT/FELLOW RESEARCH AWARD WINNERS & POSTER COMPETITION WINNERS CONTINUED

2003

Petra Musholt — Hanover, Germany
"RET Rearrangements in Archival Oxyphilic Thyroid Tumors: New Insights in Tumorigenesis and Classification of Hürthle Cell Carcinoma"

Tina W.F. Yen — Houston, Texas
"Medullary Thyroid Carcinoma: Results of a Standardized Surgical Approach in a Contemporary Series of 79 Consecutive Patients from The University of Texas, M. D. Anderson Cancer Center in Houston"

2004

Rebecca S. Sippel — Madison, Wisconsin
"Does Propofol Anesthesia Affect Intra-Operative Parathyroid Hormone Levels During Parathyroidectomy? A Randomized Prospective Trial"

David Finley — New York, New York
"Molecular Analysis of Hürthle Cell Neoplasms by Gene Profiling"

2005

Mark Cohen — St. Louis, Missouri
"Long-Term Functionality of Cryopreserved Parathyroid Autografts: A 13-Year Prospective Analysis"

Kepal N. Patel — New York, New York
"MUC1 Plays a Role in Tumor Maintenance in Aggressive Thyroid Carcinomas"

2006

Kyle Zanocco — Chicago, Illinois
"Cost-Effectiveness Analysis of Minimally Invasive Parathyroidectomy for Asymptomatic Primary Hyperparathyroidism"

Ashley Kappes Cayo — Madison, Wisconsin
"Lithium Ions: A Novel Agent for the Treatment of Pheochromocytomas and Paragangliomas"

RESIDENT/FELLOW RESEARCH AWARD WINNERS & POSTER COMPETITION WINNERS CONTINUED

2007

Tracy S. Wang — New Haven, Connecticut "How Many Endocrine Surgeons Do We Need?"

David Yu Greenblatt — Madison, Wisconsin
"Valproic Acid Activates Notch1 Signaling and Inhibits Growth in Medullary Thyroid Cancer Cells"

2008

Elizabeth G. Grubbs — Houston, Texas
"Preoperative Vitamin D (VITD) Replacement Therapy in Primary Hyperparathyroidism (PHPT): Safe But Beneficial?"

Linwah Yip — Pittsburgh, Pennsylvania
"Loss of Heterozygosity of Selected Tumor Suppressor Genes in Parathyroid Carcinoma"

POSTER: Pierre Leyre — Poiters, France
"Does the Risk of Compressive Hematoma After Thyroidectomy Authorize One-Day Surgery?"

2009

Insoo Suh — San Francisco, California
"Candidate Germline Alterations Predisposing to Familial Nonmedullary Thyroid Cancer Map to Distinct Loci on Chromosomes 1 and 6"

Susan C. Pitt — Madison, Wisconsin
"Tertiary Hyperparathyroidism: Is Less Than a Subtotal Resection Ever Appropriate? A Study of Long-term Outcomes"

POSTER: Matthew Nehs — Boston, Massachusetts
"Inhibition of B-RAFV600 Oncoprotein Prevents Cell Cycle Progression and Invasion In Vitro and Reduces Tumor Growth and Metastasis in an In Vivo Orthotopic Model of Thyroid Cancer"

POSTER: Bian Wu — Los Angeles, California
"Utilization of Parathyroidectomy in the Elderly: A Population-BasedStudy"

RESIDENT/FELLOW RESEARCH AWARD WINNERS & POSTER COMPETITION WINNERS CONTINUED

2010

David T. Hughes — Ann Arbor, Michigan
"Routine Central Lymph Node Dissection For Papillary Thyroid Cancer"

Matthew A. Nehs — Boston, Massachusetts
"Thyroidectomy With Neoadjuvant Plx4720 Extends Survival And Decreases Tumor Burden In An Orthotopic Mouse Model Of Anaplastic Thyroid Cancer"

POSTER: Aarti Mathur — Bethesda, Maryland
"Adrenal Venous Sampling in Primary Hyperaldosteronism: Standardizing A Gold Standard"

2011

Paxton V. Dickson — Houston, Texas
"Achieving Eugastrinemia in MEN1 Patients: Both Duodenal Inspection and Formal Lymph Node Dissection are Important"

Matthew Nehs — Boston, Massachusetts
"Necroptosis is a Novel Mechanism of Radiation-Induced Cell Death in Anaplastic Thyroid Cancer and Adrenocortical Cancer"

POSTER: Luc G.T. Moris — New York, New York
"Rising Incidence of Second Primary Cancer in Low-Risk Patients Receiving Radioactive Iodine Therapy"

2012

Ashley K. Cayo — Milwaukee, Wisconsin
"Predicting the Need for Calcium and Calcitriol Supplementation After Total Thyroidectomy: Results of a Prospective, Randomized Study"

Thomas J. Quinn — Bronx, New York
"Pasireotide (Som230) Is Effective for the Treatment of Pancreatic Neuroendocrine Tumors in a Multiple Endocrine Neoplasia Type 1 Conditional Knockout Mouse Model"

POSTER: Kevin Shepet — Madison, Wisconsin
"Parathyroid Cryopreservation Following Parathyroidectomy: A Worthwhile Practice?"

RESIDENT/FELLOW RESEARCH AWARD WINNERS & POSTER COMPETITION WINNERS CONTINUED

2013

Kai-Pun Wong — Hong Kong
"A Prospective Evaluation of Surgeon-Performed Transcutaneous Laryngeal Ultrasonography in Assessing Vocal Cord Function Before and After Thyroidectomy"

Scott K. Sherman — Iowa City, Iowa
"Gastric Inhibitory Polypeptide Receptor: A Future Alternative to Somatostatin Type 2 Receptor Imaging and Treatment in Neuroendocrine Tumors?"

POSTER: Sara Murray — Madison, Wisconsin
"Timing of Symptom Improvement After Parathyroidectomy"

2014

Heather Wachtel — Philadelphia, Pennsylvania
"Long-term Blood Pressure Control in Patients Undergoing Adrenalectomy for Primary Hyperaldosteronism"

Jessica Maxwell — Iowa City, Iowa
"A Practical Method to Determine the Site of Unknown Primary in Metastatic Neuroendocrine Tumors"

POSTER: Ben James — Chicago, Illinois
"A Novel Ultra-Rapid PTH Assay to Distinguish Parathyroid from Non-Parathyroid Tissue"

2015

Diana I. Ortiz – Medical College of Wisconsin "Cosyntropin Stimulation Testing On Postoperative Day 1 Allows for Selective Glucocorticoid Replacement Therapy in Patients Undergoing Adrenalectomy for Hypercortisolism: Results of a Novel, Multidisciplinary-Derived Institutional Protocolb"

Melanie A. McWade – Vanderbilt University
"Fluorescence Detection of the Parathyroid Gland: Realizing the Potential for Intraoperative Guidance"

POSTER: Idit Dotan – McGill University Health Center
"Bio-Conjugated Nanotechnology to Target Papillary Thyroid Cancer in Vitro"

POSTER: Uma Rajhbeharrysingh – Oregon Health and Science University
"Ionized Calcium And The Utility Of Maxpth To Evaluate Gastric Bypass Patients and Others With Non-Renal Secondary Hyperparathyroidism"

RESIDENT/FELLOW RESEARCH AWARD WINNERS & POSTER COMPETITION WINNERS CONTINUED

2016

Bruna Babic – National Institute of Health, National Cancer Institute
"Pediatric Patients with Pheochromocytoma and Paragangliomas Should Have Routine Preoperative Genetic Testing for Common Susceptibility Genes and Imaging to Detect Extra-Adrenal and Metastatic Tumors"

Peter T. White – University of Michigan
"A Novel Heat Shock Protein 90 Inhibitor Overcomes Receptor Tyrosine Kinase Resistance in Differentiated Thyroid Cancer"

POSTER: Selena Brouwer – University Medical Center Urecht
"Intratumoral Heterogeneity of Microrna Expression is a Pervasive Feature in Papillary Thyroid Carcinoma"

POSTER: Wouter Kluijfhout – University of California San Francisco
"CEA Should Not Routinely be Used for Detection of a First Recurrence in Patients With MTC"

2017

Kendall J Keck – University of Iowa Carver College of Medicine
"Gene expression changes in small bowel neuroendocrine tumors associated with progression to metastases"

Omair Shariq – Mayo Clinic
"Contralateral suppression of aldosterone at adrenal venous Sampling predicts hyperkalemia following adrenalectomy for primary Aldosteronism"

POSTER: Priya Dedhia – University of Michigan
"Human intestinal tissue generates functional insulin producing cells"

POSTER: Heather Wachtel – Massachusetts General Hospital
"A multi-institutional analysis of adrenalectomy for secondary malignancy"

2017-2018 NEW MEMBERS

ACTIVE MEMBERS

Cameron Adkisson, MD
Scott Albert, MD
Emery Chen, MD
Robin Cisco, MD
Shamly Dhiman, MD
Peter DiPasco, MD
Gustavo Fernandez-Ranvier, MD
Carolyn Garner, MD
Cara Govednik, MD
Katherine Heiden, MD
Ashley Hodes, MD
William King Jr., MD
Jennifer Kuo, MD
Leon Kushnir, MD
Dana Lin, MD
Catherine Madorin, MD
Aarti Mathur, MD
Travis McKenzie, MD
Jorge Montalvo-Hernandez, MD
Tricia Moo-Young, MD
Sapna Nagar, MD
Matthew Nehs, MD
Paul Park, MD
Danielle Press, MD
Hadley Ritter, MD
Christina Shaw, MD
Lawrence Shirley, MD
Meredith Sorensen, MD
Insoo Suh, MD
Sarah Treter, MD
Brian Untch, MD
Thomas Wang, MD
Laura Wharry, MD

CORRESPONDING MEMBERS

Angkoon Anuwong, MD
Rajeshbhai Patel, MD

AFFILIATE PROVIDER MEMBER

Todd Chennell, NP

2017-2018 NEW MEMBERS CONTINUED

CANDIDATE MEMBERS

Eden Amdemichael, MD
Courtney Balentine, MD
Natalie Calcatera, MD
Tyler Chan, MD
Patricia Cronin, MD
Mashaal Dhir, MD
Babak Givi, MD
Scott Grant, MD
Timo Hakkarainen, MD
Farah Karipineni, MD
Mamoona Khokhar, MD
Agathoklis Konstantinidis, MD
Brenessa Lindeman, MD
Roy Lirov, MD
Rosebel Monteiro, MD
Emily Murphy, MD
Pavel Nockel, MD
Reese Randle, MD
Henry Reinhart, MD
Holly Rochefort, MD
Minerva Romero Arenas, MD
J. Bart Rose, MD
Carolyn Seib, MD
Michael Corey Sullivan, MD
Andrew Swearingen, MD
Heather Wachtel, MD
Lucas Watkins, MD
Feibi Zheng, MD

RESIDENT/FELLOW MEMBERS

Anna Aronova, MD
Iuliana Bobanga, MD
Jessica Buicko, MD
Rebekah Campbell, MD
James Davis, MD
Neeta Erinjeri, MD
Brendan M. Finnerty, MD
Sarah Fisher, MD
Meghan Garstka, MD
Clint Gates, MD
Vincent Gemma, MD
Amanda Graff-Baker, MD
Moska Hamidi, MD
Ana K. Islam, MD
Jessica Johnson, MD
Amna Khokar, MD
Eric Kuo, MD
Denise Lee, MD
Elaine Lee, MD
Frances T. Lee, MD
Reema Mallick, MD
Melissa Mao, MD
Andrea Marcadis, MD
Ioanna Mazotas, MD
Kelvin Memeh, MD
Jane Mills, MD
Maureen Moore, MD
Rosemary Morgan, MD
TK Pandian, MD
Suraj Panjwani, MD
Mara Piltin, MD
Veljko Strajina, MD
Tanaz Vaghaiwalla, MD
Sean Wrenn, MD
Huan Yan, MD
Jonathan Zagzag, MD

CONTRIBUTORS TO THE AAES FOUNDATION

Contributions to the AAES Foundation help enrich and extend the horizons of endocrine surgery. You gift helps support operations including activities related to education and research of endocrine surgical diseases. The AAES Foundation recognizes **cumulative lifetime contributions** beginning at the Friend level of $500 or less. Donors who have either pledged to donate or have already donated $10,000 to the AAES Foundation will be deemed Norman Thompson Fellows. As of March 14, 2018, the following individuals and organizations have made contributions to the AAES Foundation.

Norman Thompson Fellows ($10,000 +)
Peter Angelos
Sally E. Carty
John A. Chabot
Polly Cheung
Peter F. Czako
Gerard M. Doherty
Douglas B. Evans
Thomas J. Fahey, III
LoGerfo Family
Paul G. Gauger
Richard A. Hodin
William B. Inabnet, III
Amanda Laird
Steven K. Libutti
Frank LoGerfo
Jack M. Monchik
Janice L. Pasieka
Nancy D. Perrier
Gregory W. Randolph
Allan Siperstein
Sonia L. Sugg & Joel Shilyansky
Geoffrey B. Thompson
Norman W. Thompson
Michelle Conlon & Robert Thompson
Robert Udelsman
Tracy Wang
Stuart D. Wilson
Michael W. Yeh
Martha A. Zeiger
University of Michigan Norman Thompson Fellows in Endocrine Surgery

Platinum Supporter ($7,500 – $9,999)
Zane Tankel

Gold Supporters ($5,000 – $7,499)
James LoGerfo
Christopher R. McHenry
Mrs. Terry Seidler
David Terris

Silver Supporters ($2,500 – $4,999)
David Djojodihardjo
Scott Gallagher
Bradford K. Mitchell
Pon Satitpunwaycha
Carmen Solorzano

Bronze Supporters ($1,000 – $2,499)
Shaghayegh Aliabadi-Wahle
Janan A. Alkilidar
Thomas Allen Broadie
James Broome
Herbert Chen
Orlo H. Clark
Michael J. Demeure
Thomas J. Fahey III
Melanie Goldfarb
Clive S. Grant
Richard J. Harding
Jay Kenneth Harness
William M. Hopkins
David Hughes
George L . Irvin, III
Barbara K. Kinder
John I. Lew
Jonathan S. Lokey
Dougald Charles MacGillivray
Aarti Mathur
David McAneny
Kresimire Milas
Barbra S. Miller
Sareh Parangi
Richard A. Prinz
Amy R. Quillo
Melanie L. Richards
Michael Roe
Brian Saunders
Ashok R. Shaha
Falah Shamsa
Rebecca S. Sippel
James W. Suliburk
Colin G. Thomas, Jr
Jonathan A. van Heerden
James J. Vopal
Ronald D. Wenger
Scott M. Wilhelm
The Supreme Triumph of the Surgeon's Art

Contributors ($500 – $999)
Dennistoun K. Brown
Samuel P. Bugis
Blake Cady
Bradford Carter
Gary C. Clark
Mark S. Cohen
Travis Cotton
Steven A. De Jong
Quan-Yang Duh
David R. Farley
Douglas L. Fraker
Randall D. Gaz
John Bright Hanks

CONTRIBUTORS TO THE AAES FOUNDATION CONTINUED

Keith S. Heller
Marybeth Hughes
James Lee
Jeffrey E. Lee
Chung-Yau Lo
Christina L. Maser
Peter J. Mazzaglia
Adrienne L. Melck
Alberto S. Molinari
Shiro Noguchi
Patricia J. Numann
Takao Obara
Randall Paul Owen
Subhash Patel
Jason Prescott
Irving B. Rosen
Frederic N. Sebag
Alexander L. Shifrin
Dietmar Simon
Renu Sinha
Philip Smith
Samuel K. Snyder
Meredith Sorensen
Antonia E. Stephen
Cord Sturgeon
Beth H. Sutton
Doug R. Trostle
Kristin E. Wagner
Ronald J. Weigel
David J. Winchester

Friends (< $500)
Christa Abraham
Göran Akerström
David A. Albertson
Menelaos A. Aliapoulios
John D. Allendorf
Shalini Arora
Frederico Aun
Keith Baldwin
Naira Baregamian
Todd Beyer
Michael Bouvet
John W. Bowlin
Laurent Brunaud
L. Michael Brunt
Bruce H. Campbell
Tobias Carling
Denise Carneiro-Pla
Carrie Carsello
Ashley Cayo
Jovenel Cherenfant
Nancy Cho
Lindsey Cieslak
Carol Clark
Orlo H. Clark
Katheryn Coan
Nicholas P. Coe
Herbert E. Cohn
Colleen Coleman
Thomas Colin
John Cooper
Alan P. B. Dackiw
Lawrence A. Danto
Ruth A. Decker
Shamly Venus Dhiman
Mete Duren
Benzon Dy
Christopher Ellison
Rafael Enrique Fajardo-Cevallos
Youben Fan
Josefina Farra
William B. Farrar
Kirk B. Faust
Gennaro Favia
Erin A. Felger
Abbey Fingeret
Jessica Folek
Cory L. Foster
Roger S. Foster, Jr
Allan J. Fredland
William Freedman
Melanie Friedlander
Andrea Frilling
Heath Giles
Jessica Gosnell
Raymon Grogan
Amelia Grover
Elizabeth Grubbs
Linda Hageman
Philip Haigh
Avital Harari
Adrian Harvey
Ian D. Hay
Miguel F. Herrera
Yatsuka Hibi
Mark C. Horattas
Ted H. Humble
Masatoshi Iihara
Masayuki Imamura
Philip H. G. Ituarte
Gilchrist Jackson
Richard L. Jamison
Adam Kabaker
Emad Kandil
Edwin L. Kaplan
Philippe Rene Kauffmann
Electron Kebebew
Rachel Kelz
Kara Kort-Glowaki
Vikram D. Krishnamurthy
John Kukora
Jennifer Kuo
Leon Kushnir
Andrey Kvachenyuk
Geeta Lal
Miriam Lango
Brenessa Lindeman
Dimitrios A. Linos
Carrie C. Lubitz
Lloyd Mack
Anne T. Mancino
Michael R. Marohn
Haggi Mazeh
Kelly L. McCoy
Julie F. McGill
Travis McKenzie
Michael McLeod
William Mendez
Paolo Miccoli
Stacey Milan
Linda Miller
Eric Mirallié
Elliot Mitmaker
Akira Miyauchi
Jacob Moalem
Alberto Molinari
Jorge Montalvo-Hernandez
Tricia Mooyoung
Vinod Narra
Leigh A. Neumayer
Bruno Niederle
Navin Niles
Rick Nishimura
Ronald H. Nishiyama

CONTRIBUTORS TO THE AAES FOUNDATION CONTINUED

Jim Norman
Fiemu E. Nwariaku
Jennifer B. Ogilvie
John E. Olson, Jr
Adwoa S. Opoku-Boateng
Edward Paloyan
Judith Park
Kepal N. Patel
Ivan R. Paunovic
Giao Phan
Roy Phitayakorn
Susan Pitt
Walter E. Pofahl
Douglas E. Politz
John R. Porterfield
Doris A. Quintana
Christopher D. Raeburn
Reese Randle
Rachel Raphael
Andrew B. Rhodes
John A. Ridge
Stephen Rodgers
Sanziana A. Roman
Anatoly Filippovich Romanchishen
Jonathan Romanowsky
Minerva Romero Arenas
Irving B. Rosen
Rashmi Roy
Daniel Ruan
M. Bernadette Ryan
J. M. Sanchez-Blanco
Nis Schmidt
Rick J. Schmidt
David Schneider
Beth Schrope
Carolyn Seib
Melwyn I. Sequeira
Jyotirmay Sharma
Mauricio Sierra Salazar
Britt Skogseid
Rachel Slotcavage
Gardner Smith
William H. Snyder, III
Julie Ann Sosa
Kathryn Spanknebel
Insoo Suh
Mark Sywak
Gary B. Talpos
Aida Taye
Serder Tevfik Tezelman
Anna Marie Tosco
Sarah D. Treter
Joel Turner
Menno Vrienns
Martin K. Walz
Collin J. Weber
Kaare Weber
Glenn Williams
Robert Wilmoth
Tina Yen
M. J. Yeung
John H. Yim
Linwah Yip
Kelvin C. Yu
Kyle Zanocco
Rasa Zarnegar
Kevin Zirkle
Washington University School of Medicine
West Bloomfield General Surgery Team

Donations may be made online at www.aaesfoundation.org

PAST MEETINGS

1980 **Ann Arbor, Michigan**
Local Arrangements Chair: Norman W. Thompson

1981 **Washington, DC**
Local Arrangements Chair: Glenn Geelhoed

1982 **Houston, Texas**
Local Arrangements Chair: Robert C. Hickey

1983 **San Francisco, California**
Local Arrangements Chair: Orlo Clark

1984 **Kansas City, Kansas**
Local Arrangements Chair: Stanley R. Friesen

1985 **Toronto, Ontario, Canada**
Local Arrangements Chair: Irving Rosen

1986 **Rochester, Minnesota**
Local Arrangements Chair: Jon A. van Heerden

1987 **Chicago, Illinois**
Local Arrangements Chair: Edwin L. Kaplan

1988 **Boston, Massachusetts**
Local Arrangements Chair: Blake Cady

1989 **Chapel Hill, North Carolina**
Local Arrangements Chair: Robert D. Croom

1990 **Cleveland, Ohio**
Local Arrangements Chair: Caldwell B. Esselstyn

1991 **San Jose, California**
Local Arrangements Chair: Maria Allo

1992 **Miami, Florida**
Local Arrangements Chair: George L. Irvin, III

1993 **Williamsburg, Virginia**
Local Arrangements Chair: H. Heber Newsome

1994 **Detroit, Michigan**
Local Arrangements Chair: Gary B. Talpos

1995 **Philadelphia, Pennsylvania**
Local Arrangements Chair: John Kukora

PAST MEETINGS CONTINUED

1996 **Napa, California**
Local Arrangements Chair: Quan-Yang Duh

1997 **Baltimore, Maryland**
Local Arrangements Chair: Robert Udelsman

1998 **Orlando, Florida**
Local Arrangements Chair: Peter J. Fabri

1999 **New Haven, Connecticut**
Local Arrangements Chair: Barbara Kinder

2000 **Joint Meeting: London, United Kingdom/Lille, France**
Local Arrangements Chair: Jack Monchik

2001 **Atlanta, Georgia**
Local Arrangements Chair: Collin Weber

2002 **Banff, Alberta, Canada**
Local Arrangements Chair: Janice L. Pasieka

2003 **San Diego, California**
Local Arrangements Chairs: Jay K. Harness & John Kukora

2004 **Charlottesville, Virginia**
Local Arrangements Chair: John B. Hanks

2005 **Cancun, Mexico**
Local Arrangements Chair: Miguel F. Herrera

2006 **New York, New York**
Local Arrangements Chair: Ashok R. Shaha

2007 **Tucson, Arizona**
Local Arrangements Chair: Michael J. Demeure

2008 **Monterey, California**
Local Arrangements Chair: Quan-Yang Duh

2009 **Madison, Wisconsin**
Local Arrangements Chair: Herbert Chen

2010 **Pittsburgh, Pennsylvania**
Local Arrangements Chair: Sally E. Carty

2011 **Houston, Texas**
Local Arrangements Chair: Nancy D. Perrier

2012 **Iowa City, Iowa**
Local Arrangements Chair: Ronald Weigel

PAST MEETINGS CONTINUED

2013 **Chicago, Illinois**
Local Arrangements Chair: Peter Angelos

2014 **Boston, Massachusetts**
Local Arrangements Chair: Richard A. Hodin

2015 **Nashville, Tennessee**
Local Arrangements Chair: Carmen Solorzano

2016 **Baltimore, Maryland**
Local Arrangements Chair: John A. Olson, Jr.

2017 **Orlando, Florida**
Local Arrangements Chair: Mira Milas

SPECIAL SESSIONS

ADVANCED ENDOCRINE SURGERY COURSE

SATURDAY, MAY 5, 2018 8:00 AM – 4:30 PM
JB Duke Hotel – Executive Classroom
*Separate registration required for this Course

NEW IN 2018 - Take your skills to the next level and help enhance your clinical practice of endocrine surgery. This Course will review current standards in management of complex endocrine diseases, while engaging on a personal level with nationally recognized authorities in the field. A multi-disciplinary panel of experts will highlight the nuances of complex decision making. Panelists will be unaware of the real-life clinical scenarios presented which creates a more practical approach and lends itself well to learning objectives of practicing surgeons with a special interest in thyroid, parathyroid and adrenal disease.

LUNCH SESSION: THE CHANGING FACE OF THYROID CANCER MANAGEMENT FOR SURGEONS: REAL-LIFE APPLICATIONS OF THE NEW ATA GUIDELINES

Educational grant support provided by Sanofi Genzyme

SUNDAY, MAY 6, 2018 12:30 PM – 1:30 PM
JB Duke Hotel – Ballroom (space limited to the first 250 attendees)

This session will be a case-based approach to educate attendees of the American Association of Endocrine Surgeons (AAES) about important changes in the American Thyroid Association (ATA) Guidelines and how they are pertinent to surgeons in their everyday practice.

LUNCH SESSION: THE BUSINESS OF ENDOCRINE SURGERY

MONDAY, MAY 7, 2018 12:00 PM – 1:00 PM
President's Ballroom

This session will focus on coding and billing in endocrine surgery. The session will be useful to surgeons across the spectrum of work experience and will present the basics of coding and billing, how a surgeon gets paid for any work that they do. The billing cycle will be presented, the process that occurs after one chooses their codes. Speakers will delve into the more intricate parts of office-based coding and how to get the most from E&M coding. Finally, difficult scenarios in operative coding will be discussed and including how to code to best represent the work that is done without overstating what was done.

SPECIAL SESSIONS

BREAKFAST SESSION: TRANSORAL ENDOSCOPIC ENDOCRINE SURGERY IN THE U.S.: LESSONS, TIPS, AND FUTURE DIRECTIONS

Educational grant support provided by Medtronic

TUESDAY, MAY 8, 2018 7:00 AM – 8:00 AM
President's Ballroom

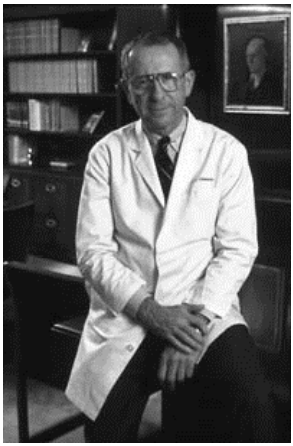
This session will provide an overview, history, and technical details of transoral endoscopic thyroid and parathyroid surgery. Panelists will discuss the purported advantages and disadvantages, as well as the evolving indications and contraindications, of the transoral approach. They will provide an update on the initial experiences in North America, including the unique issues and challenges in this patient population. In addition, panelists will discuss the role of devices and technological adjuncts in the transoral technique, and discuss the logistical and ethical implications of starting a transoral program at an individual institution as well as broadening dissemination nationally

HISTORICAL LECTURER

William Stewart Halsted; Our Surgical Heritage (Also an Endocrine Surgeon!)

John Cameron, MD
John Hopkins Hospital

TUESDAY, MAY 8, 2018 8:00 AM – 8:45 AM
Presidents Ballroom



Dr. John L. Cameron is the Alfred Blalock Distinguished Service Professor of Surgery at The Johns Hopkins University School of Medicine and has had a long and distinguished career in alimentary tract surgery and specifically in pancreatic cancer. He has won worldwide acclaim for mastering the Whipple procedure. At the beginning of his career, the mortality rate from the Whipple procedure was nearly 30 percent. He has worked to lower that to 1-2 percent at Johns Hopkins. He has operated on more patients with pancreatic cancer and done more Whipple resections than any other surgeon in the world.

He has been a leader in the surgical profession, serving as president of the American College of Surgeons, the Society for Surgery of the Alimentary Tract, the Southern Surgical Association, the Society of Clinical Surgery, the Society of Surgical Chairs, the Halsted Society and the American Surgical Association. He served as chief of surgery for The Johns Hopkins Hospital for nineteen years.

Dr. Cameron obtained his undergraduate degree from Harvard University in 1958, and his medical degree from The Johns Hopkins University School of Medicine in 1962. All of his training in General and Thoracic Surgery was obtained at The Johns Hopkins Hospital, where he has spent the entirety of his distinguished career in patient care and surgical training. He has trained more surgeons who have gone on to achieve leadership positions in American Surgery than any other chair in the country. He has been married to his wife Doris for fifty-seven years. They have four children, one is a school teacher and three work in the medical sciences.

HISTORICAL LECTURERS AT RECENT MEETING

2009 **Edwin L. Kaplan, MD**
University of Chicago
Radiation Induced Thyroid Cancer – A Chicago Experience

2010 **Norman W. Thompson, MD**
University of Michigan
The Time Was Right

2011 **Jon A. van Heerden, MD**
Medical University of South Carolina
Pheochromocytoma Resection: Now and Then

2012 **Murray F. Brennan, MD**
Memorial Sloan-Kettering Cancer Center
Re-Operative Parathyroid Surgery Circa 1975

2013 **Orlo H. Clark, MD**
University of California, San Francisco
Recognition of Endocrine Glands and Abnormalities by Artists and Surgeons

Wen T. Shen, MD MA
University of California, San Francisco
From 'Kindred Spirits' to the Social Network

2014 **Patricia J. Numann, MD**
SUNY Upstate Medical University
Ode to an Indian Rhinoceros

2015 **Robert Beazley, MD**
Boston University School of Medicine
The Glands of Owen...Who Was Owen?

2016 **Samuel A. Wells, Jr., MD**
National Cancer Institute
The Diagnosis and Treatment of Thyroid Cancer: A Historical Perspective

2017 **David L. Nahrwold, MD**
Northwestern University
Surgery, Surgeons and their College

ORLO & CAROL CLARK DISTINGUISHED LECTURER IN ENDOCRINE SURGERY

"Breakthrough to Brave"

Julie Freischlag, MD FRCS Ed (Hon)
Wake Forest University

MONDAY, MAY 7, 2018 8:00 AM – 8:45 AM
Presidents Ballroom

Dr. Freischlag joined Wake Forest Baptist Medical Center in April 2017 as Chief Executive Officer. As CEO, she has the overall responsibility for the Medical Center's clinical, academic and innovation enterprises and its annual operating budget of $2.5B. On July 1, 2017, Dr. Freischlag became the Interim Dean of Wake Forest School of Medicine.

For more than 15 years, she has led education and training programs at top medical schools in her role as professor and chair of surgery and vascular surgery departments. Dr. Freischlag also has more than 30 years of experience leading patient-care services as chief of surgery or vascular surgery at nationally ranked hospitals. She served as professor, chair of the surgery department and surgeon-in-chief at Johns Hopkins Medical Institutions. She led initiatives to expand research, add specialty clinical services, improve patient-centered care and patient safety, redesign the surgical training program and enhance academic career paths for faculty.

Her national leadership includes serving as a former governor and secretary of the Board of Governors and a regent and past chair of the Board of Regents of the American College of Surgeons. She is the past president of the Society for Vascular Surgery and the Society for Vascular Surgery Foundation, and past president of the Association of VA Surgeons and the Society of Surgical Chairs. Dr. Freischlag was the editor of JAMA Surgery for ten years (2005-2014) and is a member of the editorial boards of the Annals of Vascular Surgery, Journal of the American College of Surgeons, and British Journal of Surgery.

Dr. Freischlag has received numerous teaching awards, an achievement award from the Department of Veterans Affairs, and was elected to the National Academy of Medicine in 2015.

PRESIDENT'S INVITED LECTURERS AT RECENT MEETINGS

1991 **Gregory B. Bulkley, MD**
Johns Hopkins University, Baltimore, Maryland
Endothelial Xanthine Oxidase: a Radical Transducer of Signals and Injury

1992 **Donald Coffey, PhD**
Bethesda, Maryland
New Concepts Concerning Cancer

1993 **John L. Doppman, MD**
National Institutes of Health, Bethesda, Maryland
Recent Advances in Endocrinologic Imaging

1994 **Gordon J. Strewler, MD**
San Francisco, California
The Parathyroid Hormone Related Protein: Clinical and Basic Studies of a Polyfunctional Protein

1995 **Ivor M.D. Jackson, MD**
Providence, Rhode Island
Regulation of TSH Secretion: Implications for Disorders of the Thyroid Function

1996 **Victor E. Gould, MD**
Rush-Presbyterian-Medical Center, Chicago, Illinois
The Diffuse Neuroendocrine System: Evolution of the Concept and Impact on Surgery

1997 **Bertil Hamberger, MD, PhD**
Karolinska Institute, Stockholm, Sweden
The Nobel Prize

1998 **Susan Leeman, PhD**
Boston University, Boston, Massachusetts
The NeuroPeptides: Substance P and Neurotensin

1999 **James Hurley, MD**
Cornell University, New York, New York
Post-Operative Management of Differentiated Thyroid Cancer

2000 **James Shapiro, MD**
University of Alberta, Edmonton, Alberta
Pancreatic Islet Cell Transplantation

PRESIDENT'S INVITED LECTURERS AT RECENT MEETINGS CONTINUED

2001 **Andrew F. Stewart, MD**
University of Pittsburgh, Pittsburgh, Pennsylvania
Parathyroid Hormone-Related Protein: From Hypercalcemia of Malignancy to Gene Therapy from Diabetes

2002 **William F. Young Jr., MD**
Mayo Clinic, Rochester, Minnesota
Adrenal-Dependent Hypertension: Diagnostic Testing Insights

2003 **Sissy M. Jhiang, MD**
The Ohio State University, Columbus, Ohio
Lessons From Thyroid Cancer: Genetics and Gene Therapy

2004 **Edward R. Laws Jr, MD**
University of Virginia, Charlottesville, Virginia
The Diagnosis and Management of Cushing's Disease

2005 **David Duick, MD**
Phoenix, Arizona
Thyroid Nodules and Mild Primary Hyperparathyroidism: Examples of Clinical Perplexities or Unresolvable Conundrums

2006 **Michael Bliss, PhD**
University of Toronto, Ontario, Canada
Harvey Cushing and Endo-Criminology

2007 **Virginia A. Livolsi, MD**
University of Pennsylvania, Philadelphia, Pennsylvania
Thyroid Nodule FNA and Frozen Section: Partners or Adversaries

2008 **F. John Service, MD, PhD**
Mayo Clinic, Rochester, Minnesota
Hypoglycemia in Adults – 80th Anniversary of Hyperinsulinism

2009 **Jeffrey M. Trent, PhD**
Translation Genomics Research Institute, Phoenix, Arizona Integrating Genetics, *Genomics, and Biology Towards a More Personalized Medicine*

2010 **Alexander J.B. McEwan, MB**
University of Alberta, Edmonton, Alberta, Canada
The State of the Art of Radionucleotide Imaging and Therapy in Patients with Neuroendocrine Tumors

PRESIDENT'S INVITED LECTURERS AT RECENT MEETINGS CONTINUED

2011 **Allan H. (Bud) Selig**
9th Commissioner of Major League Baseball
Major League Baseball – 2011 Economic and Health Related Issues

2012 **Atul A. Gawande, MD, MPH**
Brigham and Women's Hospital
Strategies for Improving Surgical Performance

2013 **Anders O.J. Bergenfelz, MD, PhD**
Lund University Hospital
Quality Control in Clinical Practice and Postgraduate Education in Endocrine Surgery

2014 **Yuri E. Nikiforov, MD, PhD**
University of Pittsburgh School of Medicine
Progress in Genomic Markers for Thyroid Cancer: How Does if Affect Patient Management?

2015 **Gary Hammer, MD, PhD**
University of Michigan
Translating Adrenal Stem Cells: Implications for Adrenal Disease

2016 **Steven A. Rosenberg, MD, PhD**
National Cancer Institute and George Washington University
The Curative Potential of T-cell Transfer Immunotherapy for Patients with Metastatic Cancer

2017 **Jack A. Gilbert, PhD**
University of Chicago
Thyroid Cancer and the Microbiome

CONFERENCE INFORMATION

ACCREDITATION

PartnerCME
JOINT PROVIDERSHIP PROGRAM
ACS DIVISION OF EDUCATION

ACCME
ACCREDITED WITH COMMENDATION

AMERICAN COLLEGE OF SURGEONS
DIVISION OF EDUCATION

LEARNING OBJECTIVES

This activity is designed for all endocrine surgeons seeking the latest developments in endocrine surgical technique and its related research. The intent of the program is to improve the quality of patient care and improve overall patient safety. Audience participation and interaction will be encouraged. The content and format of the program have been determined based on evaluations and suggestions of attendees of previous programs.

At the completion of this activity, attendees will be able to:

1. Participate in discussions and explain current developments in the science and clinical practice of endocrine surgery.
2. Explain practical new approaches and solutions to relevant concepts and problems in endocrine surgical care.
3. Apply additional working knowledge to assist them with their existing and growing endocrine practice.
4. Possess new information and recent developments as they relate to recently established guidelines and procedures.
5. Explain the new designation of Noninvasive Follicular Tumor with Papillary-like nuclear Features (NIFTP) and what it means for the management care plan of this subtype of thyroid neoplastic disease.

CONTINUING MEDICAL EDUCATION CREDIT INFORMATION

Accreditation

This activity has been planned and implemented in accordance with the Essential Areas and Policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of the American College of Surgeons and American Association of Endocrine Surgeons. The American College of Surgeons is accredited by the ACCME to provide continuing medical education for physicians.

AMA PRA Category 1 Credits™

The American College of Surgeons designates this live activity for a maximum of **26.25** *AMA PRA Category 1 Credits™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Of the *AMA PRA Category 1 Credits™* listed above, a maximum of **8.50** credits meet the requirements for Self-Assessment.

AMERICAN COLLEGE OF SURGEONS
Inspiring Quality:
Highest Standards, Better Outcomes
100+years

AMERICAN COLLEGE OF SURGEONS
DIVISION OF EDUCATION
Accredited with Commendation by the Accreditation Council for Continuing Medical Education

ACCREDITATION CONTINUED

CME CERTIFICATES AND EVALUATION FORMS

You may complete your attendance verification, meeting evaluation and Self-Assessment posttest online. You will receive your electronic CME certificate after completing the evaluation and posttests. Your final CME hours will be submitted to the ACS. Members of the ACS will have their credits posted to the ACS website around 30 days post-activity.

The website to claim your CME credits will be emailed to all attendees.

The American Board of Surgery requirement for fulfillment of MOC Part 2 is the completion of a minimum of 90 hours of *AMA PRA Category 1 Credit™* over a three-year cycle. At least 60 of the 90 hours must include a self-assessment activity—a written Q&A exercise (paper or online) that assesses the surgeon's understanding of the material presented during the CME program. A score of 75% or higher must be attained on the self-assessment exercise. Multiple attempts are permitted.

SATURDAY, MAY 5, 2018	**CME**	**SA**
ADVANCED ENDOCRINE SURGERY COURSE	8.50	5.50
Daily Total	**8.50**	**5.50**
SUNDAY, MAY 6, 2018		
POSTER WALK AROUND	1.50	0
OPENING SESSION	0.75	0
SCIENTIFIC SESSION I	1.25	1.25
LUNCH SESSION	1.00	0
SCIENTIFIC SESSION II	1.00	1.00
SCIENTIFIC SESSION III	1.25	1.25
Daily Total	**6.75**	**3.50**
MONDAY, MAY 7, 2018		
ORLO & CAROL CLARK DISTINGUISHED LECTURE	0.75	0
SCIENTIFIC SESSION IV	1.25	1.25
PRESIDENTIAL ADDRESS	1.00	0
LUNCH SESSION	1.00	0
SCIENTIFIC SESSION V	1.00	1.00
INTERESTING CASES	1.50	0
Daily Total	**6.50**	**2.25**
TUESDAY, MAY 8, 2018		
BREAKFAST SESSION	1.00	0
HISTORICAL LECTURE	0.75	0
SCIENTIFIC SESSION VI	1.25	1.25
SCIENTIFIC SESSION VII	1.50	1.50
Daily Total	**4.50**	**2.75**
MEETING TOTAL	**26.25**	**14.00**

DISCLOSURE INFORMATION

In accordance with the ACCME Accreditation Criteria, the American College of Surgeons, as the accredited provider of this activity, must ensure that anyone in a position to control the content of the educational activity has disclosed all relevant financial relationships with any commercial interest. Therefore, it is mandatory that both the program planning committee and speakers complete disclosure forms. Members of the program committee were required to disclose **all** financial relationships and speakers were required to disclose any financial relationship **as it pertains to the content of the presentations**. The ACCME defines a 'commercial interest' as "any entity producing, marketing, re-selling, or distributing health care goods or services consumed by, or used on, patients". It does not consider providers of clinical service directly to patients to be commercial interests. The ACCME considers "relevant" financial relationships as financial transactions (in any amount) that may create a conflict of interest and occur within the 12 months preceding the time that the individual is being asked to assume a role controlling content of the educational activity.

ACS is also required, through our joint providership partners, to manage any reported conflict and eliminate the potential for bias during the activity. All program committee members and speakers were contacted, and the conflicts listed below have been managed to our satisfaction. However, if you perceive a bias during a session, please report the circumstances on the session evaluation form.

Please note we have advised the speakers that it is their responsibility to disclose at the start of their presentation if they will be describing 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 or unapproved usage.

The requirement for disclosure is not intended to imply any impropriety of such relationships, but simply to identify such relationships through full disclosure and to allow the audience to form its own judgments regarding the presentation.

Speakers / Moderators / Discussants	Nothing to Disclose	Disclosure		
		Company	Role	Received
Sara Ahmadi	X			
Martin Almquist		Medtronic IPSEN	Speaker Research partner	Consulting fee Research funding
Salmon Alsafran	X			
Peter Angelos	X			
Ammar Asban	X			
Milad Behbahaninia	X			
Cassandre Benay	X			
David Bimston	X			

Speakers / Moderators / Discussants	Nothing to Disclose	Disclosure		
		Company	Role	Received
Gary Bloom	X			
James Broome	X			
Talia Burneikis	X			
Glenda Callendar	X			
John Cameron	X			
Tobias Carling	X			
Danilea Carmona-Matos	X			
Denise Carnero-Pla	X			
Bradford Carter		Genomic Health	Consultant	Honoraria
Herbert Chen	X			
Nathalie Chereau	X			
Mary Condron	X			
Tom Connally		Veracyte Norman Regional Hospital	Speaker Bureau Employed Surgeon	Honoraria Salary
James Davis	X			
Stephanie Davis	X			
Laura De Marinis	X			
Beatriz de Rienzo-Madero	X			
Karen Devon	X			
Raoul Droeser	X			
Quan-Yang Duh	X			
Dina Elaraj	X			
Mustapha El Lakis	X			
Brendan Finnerty	X			
Sarah Fisher	X			
Julie Freischlag	X			
Jason Glenn	X			
Claire Graves	X			
Katherine Gray	X			
Patience Green	X			
Raymon Grogan	X			
Elizabeth Grubbs	X			
Bryan Haugen		Genzyme Eisai	Speaker Consultant	Honoraria Consulting Fee
David Hughes	X			
Kareen Ibraheem	X			
William B. Inabnet III	X			
Benjamin James	X			
Pascal Jonker	X			
Emad Kandil	X			
Poongkodi Karunakaran	X			

Speakers / Moderators / Discussants	Nothing to Disclose	Disclosure		
		Company	Role	Received
Hadiza Kazaure	X			
Colleen Kiernan	X			
Hoon Yub Kim	X			
Lawrence Kim	X			
Emin Kose	X			
Lindsay Kuo	X			
Brian Lang	X			
Cortney Lee	X			
Denise Lee	X			
Janet Li	X			
Jessica Liu	X			
Natalie Luehmann	X			
Rajshri Mainthia	X			
Reema Mallick	X			
Andrea Marcadis	X			
Christina Maser	X			
Gabriele Materazzi	X			
Alexandria McDow	X			
Julie McGill	X			
Catherine McManus	X			
William Mendez	X			
Fabrice Menegaux	X			
Janeil Mitchell	X			
Akira Miyauchi	X			
Jacob Moalem	X			
Edwina Moore	X			
Tyler Mouw	X			
Sarah Oltmann	X			
Janice Pasieka	X			
Kepal Patel		Veracyte	Consultant	Honoraria
Jennifer Perkins		Sanofi Genzyme	Speaker	Honoraria
Nancy Perrier	X			
John Phay	X			
Alenander Razavi	X			
Jennifer Rosen	X			
Alex Rosenberg	X			
Jon Russell	X			
Zeyad Sahli	X			
Vivek Sant	X			
Aaron Scott	X			
Palaniappan Sethu	X			
Ashok Shaha	X			
Wen Shen	X			
Allan Siperstein	X			

Speakers / Moderators / Discussants	Nothing to Disclose	Disclosure		
		Company	Role	Received
Carmen Solorzano	X			
Malcolm Squires	X			
Shamira Sridharan	X			
Michael Starks	X			
Antonia Stephen	X			
Veljko Strajina	X			
Sonia Sugg	X			
Insoo Suh		Medtronic Prescient Surgical	Consultant Co-Founder, consultant	Consultant fee Ownership interest, consultant fee
Stephanie Talutis	X			
Giju Thomas	X			
John Tierney	X			
Ralph Tufano		Hemostatix Medtronic	Consultant Consultant	Consulting Fee Consulting Fee
Hunter Underwood	X			
Kimberly Vanderveen		Sanofi Medtronic MDReview Rose Medical Center	Speaker Consultant Peer Review Medical Director	Honoraria Consulting Fees Consulting Fees Director Wages
Willemijn van der Plas		Johnson & Johnson	Speaker	Honorarium
Wessel Vorselaars	X			
Heather Wachtel	X			
Susan Wcislak	X			
Jason Whitt	X			
Huan Yan	X			
Michael Yeh	X			
Linwah Yip	X			
Nick Zaborek	X			
Martha Zeiger	X			

Planning Committee	Nothing to Disclose	Disclosure		
		Company	Role	Received
Ian Ganly	X			
Paul Gauger		Medtronic	Consultant	Consulting Fees
Avital Harari	X			
David Hughes	X			
Emad Kandil		Genzyme Shire	Speaker Speaker	Honorarium Honorarium
Rachel Kelz	X			
Geeta Lal	X			
Haggi Mazeh	X			
Peter Joseph Mazzaglia	X			
John Phay	X			
David Schneider	X			
Wen Shen	X			
Joyce Shin	X			
Rebecca Sippel	X			
Scott Wilhelm	X			
Martha Zeiger	X			

HOTEL INFORMATION

HOTEL INFORMATION

WASHINGTON DUKE INN & GOLF CLUB (Main Hotel)
3001 Cameron Boulevard, Durham, NC 27705
T: 919-490-0999
W: www.washingtondukeinn.com

JB DUKE HOTEL (Secondary Hotel)
230 Science Drive, Durham, NC 27708
T: 919-660-6400
W: www.jbdukehotel.com

AIRPORT INFORMATION

The Washington Duke Inn is located 20 minutes from the Raleigh-Durham International Airport (RDU). https://www.rdu.com

TRANSPORTATION FROM THE AIRPORT

The Washington Duke Inn and the JB Duke Hotel do NOT provide airport shuttles.

Taxi Service: A one-way taxi ride from the airport to the Washington Duke Inn will cost approximately $45

Uber/Lyft Service: $20 one-way

CONTACTS

Sanziana Roman, MD, Local Arrangements Co-Chair
E: Sanziana.roman@ucsf.edu

Julie Ann Sosa, MD, MA, Local Arrangements Co-Chair
E: Julie.sosa@ucsf.edu

AMERICAN ASSOCIATION OF ENDOCRINE SURGEONS
201 East Main Street, Suite 1405, Lexington, KY 40507
T: 859-402-9810 F: 859-514-9166 E: info@endocrinesurgery.org
W: www.endocrinesurgery.org

AGENDA

AGENDA

FRIDAY, MAY 4, 2018

6:30 am – 7:00 am *Ambassador Duke Gallery*

Endocrine Surgery University Registration

7:00 am — 5:45 pm *Ambassador Duke*

Endocrine Surgery University

An educational activity for AAES Endocrine Surgery Fellows

COURSE DIRECTOR

Mira M. Milas, MD - Banner Health University Medical Center Phoenix

COURSE FACULTY/PANELISTS

- Michael Campbell, MD - University of California Davis
- James Lee, MD - Columbia University Medical Center
- Chris McHenry, MD - MetroHealth Medical Center
- Rodney Pommier, MD - Oregon Health and Science University
- Randall Scheri, MD - Duke University School of Medicine
- Wen T. Shen, MD MA - University of California-San Francisco
- Rebecca Sippel, MD - University of Wisconsin
- Michael Starks, MD - Penobscot Surgical Care, PA
- Kristin Wagner, MD - Surgical Specialists of Charlotte
- Tracy Wang, MD, MPH - Medical College of Wisconsin
- Martha Zeiger, MD - UVA School of Medicine

6:30 pm — 8:30 pm *Ambassador Duke*

Endocrine Surgery University Dinner

Invitation Only

AGENDA CONTINUED

SATURDAY, MAY 5, 2018

6:30 am – 7:00 am *Ambassador Duke Gallery*
Endocrine Surgery University Registration

7:00 am — 12:00 pm *Ambassador Duke*
Endocrine Surgery University, continued

8:00 am — 4:30 pm *JB Duke Hotel - Executive Classroom*
ADVANCED ENDOCRINE SURGERY COURSE
*Separate registration required

COURSE DIRECTORS
Shaghayegh Aliabadi, MD - The Oregon Clinic
Erin Felger, MD - Washington Hospital Center

COURSE MODERATORS

- Dina Elaraj, MD – Northwestern University
- Kepal Patel, MD – New York University Langone Medical Center
- Jenifer Rosen, MD – Washington Hospital Center
- Alan Siperstein, MD – Cleveland Clinic

COURSE PANELISTS

- Peter Angelos, MD, PhD – University of Chicago
- Nancy Perrier, MD – MD Anderson Cancer Center
- Denise Carnero-Pla, MD – Medical University of South Carolina
- Kaare Weber, MD – WPHPA Surgical Specialists
- Sara Ahmadi, MD – Duke University School of Medicine
- Janice Pasieka, MD – University of Calgary
- Herb Chen, MD – University of Alabama at Birmingham School of Medicine
- Michael Yeh, MD – University of California Los Angeles
- Julie McGill, MD – Atlanta Endocrine Surgery
- Ralph Tufano, MD – John Hopkins University School of Medicine
- Larry Kim, MD – University of North Carolina
- David Bimston, MD – Memorial Center for Integrative Endocrine Surgery
- Jennifer Perkins, MD - Duke University School of Medicine
- Quan-Yang Duh, MD – University of California San Francisco
- Electron Kebebew, MD – National Institutes of Health
- James Broome, MD – St. Thomas Endocrine Surgery Specialists
- Kim Vanderveen, MD – Denver Center for Endocrine Surgery, P.C.

AGENDA CONTINUED

SATURDAY, MAY 5, 2018

1:00 pm – 6:00 pm — *Washington Duke Inn Golf Club*
AAES Golf Tournament
Additional registration fee applies

2:00 pm — 6:00 pm — *Ambler Stadium*
AAES Tennis Tournament
Additional registration fee applies

2:00 pm — 7:00 pm — *President's Ballroom Pre-Function*
Registration Open

2:00 pm — 6:00 pm — *Duke University Room*
AAES Council Meeting

6:30 pm — 8:30 pm — *NanaSteak Restaurant*
Executive Council Dinner
Invitation Only

9:00 pm — 11:00 pm — *Tyler's Restaurant & Tap Room*
Young Surgeons' Social — *324 Blackwell St, Durham, NC*

All young members of the AAES (Resident/Fellow and Candidate members) and those still young at heart are welcome to join in for an evening of comradery, pool and shuffleboard before the Annual Meeting kicks off on Sunday. Tyler's is a short cab ride away. Transportation not provided.

AGENDA CONTINUED

SUNDAY, MAY 6, 2018

7:00 am — 4:00 pm *President's Ballroom Pre-Function*
Registration Open

7:00 am — 8:30 am *Al Buehler Cross County Public Trail*
5K Fun Run *Meet in the lobby of the Washington Duke Inn*
Additional registration fee applies.
On-site registrations will be accepted Sunday morning before the event begins.

7:00 am — 8:00 am *Duke University Room*
Accreditation Committee Meeting

7:30 am — 8:30 am *Sanford Boardroom*
Research Committee Meeting

8:00 am — 9:00 am *Duke University Room*
Fellowship Committee Meeting

8:30 am — 10:00 am *Forest Room*
Poster Walk Around and Poster Judging
Poster Chair: Geeta Lal, MD

9:00 am — 10:00 am *Duke University Room*
Affiliate Provider Meeting

10:00 am — 10:45 am *President's Ballroom*
AAES Opening Session, Dr. Martha Zeiger

10:45 am — 12:00 pm *President's Ballroom*
SCIENTIFIC SESSION I: Papers 1-5
MODERATORS: Wen Shen, MD - *University of California San Francisco*, and Glenda Callendar, MD – *Yale University*

12:00 pm — 2:00 pm President's Terrace & Gallery; Vista Restaurant
Lunch Break (lunch provided)

AGENDA CONTINUED

SUNDAY, MAY 6, 2018

12:30 pm — 1:30 pm *JB Duke Hotel - Ballroom*

LUNCH SESSION at the JB Duke Hotel (optional)

"The Changing Face of Thyroid Cancer Management for Surgeons: Real-Life Applications of the New ATA Guidelines"

Educational grant support provided by Sanofi Genzyme

Limited to the first 250 attendees!

MODERATORS: Antonia Stephen - Massachusetts General Hospital, and David T. Hughes - University of Michigan Health System

PANELISTS: Bryan Haugen - University of Colorado; Libby Grubbs - MD Anderson; Julie Ann Sosa – *University of California San Francisco*; Peter Sadow - Massachusetts General Hospital; and Gary Bloom - ThyCa: Thyroid Cancer Survivors' Association, Inc.

2:00 pm — 3:00 pm *President's Ballroom*

SCIENTIFIC SESSION II: Papers 6-9

MODERATORS: Sonia Sugg, MD – *University of Iowa Hospitals & Clinics*, and Jacob Moalem, MD – *University of Rochester, Strong Memorial Hospital*

3:00 pm — 3:30 pm *Ambassador & Forest Rooms*

Break, Exhibits, & Poster Viewing

3:30 pm — 4:45 pm *President's Ballroom*

SCIENTIFIC SESSION III: Papers 10-14

MODERATORS: Emad Kandil, MD – *Tulane School of Medicine*, and William Mendez, MD – *University of Puerto Rico*

6:00 pm — 8:00 pm *Cameron Stadium*

AAES President's Reception *Hall of Fame and Hall of Honor*

Join colleagues and friends for the signature kick-off reception to the AAES Annual Meeting. Cameron Stadium is a short ½ mile (14 minute) walk from the Washington Duke Inn. Drink tickets and hors d'oeuvres will be provided.

AGENDA CONTINUED

MONDAY, MAY 7, 2018

6:30 am — 7:00 pm *President's Ballroom Pre-Function*
Registration Open

7:00 am — 8:00 am *Matlock Room*
Education Committee Meeting

7:00 am — 8:00 am *Biddle Room*
CESQIP Committee Meeting

7:00 am — 8:00 am *Holloway Room*
IT Committee Meeting

7:00 am — 8:00 am *Ambassador & Forest Rooms*
Continental Breakfast in Exhibit Hall

7:00 am — 8:00 am *Duke University Room*
New Member Breakfast
Invitation Only

8:00 am — 8:45 am *President's Ballroom*
Orlo & Carol Clark Distinguished Lecturer in Endocrine Surgery: "Breakthrough to Brave"
SPEAKER: Julie Freischlag, MD FRCS Ed (Hon) **-** *Wake Forest University*

8:45 am — 10:00 am *President's Ballroom*
SCIENTIFIC SESSION IV: Papers 15-19
MODERATORS: Nancy Perrier, MD – *MD Anderson Cancer Center*, and Karen Devon, MD – *University of Toronto*

10:00 am — 10:30 am *Ambassador & Forest Rooms*
Breaks, Exhibits, & Poster Viewing

10:30 am — 11:30 am *President's Ballroom*
PRESIDENTIAL ADDRESS: "The Magic of Endocrine Surgery. Our Origins, Our Legacy, Our Future"
SPEAKER: Martha Zeiger, MD – *University of Virginia School of Medicine*

11:30 am — 1:30 pm President's Terrace & Gallery; Vista Restaurant
Lunch Break (Lunch provided)

AGENDA CONTINUED

MONDAY, MAY 7, 2018

12:00 pm — 1:00 pm *President's Ballroom*

LUNCH SESSION (optional)

"The Business of Endocrine Surgery"

MODERATORS: Michael Starks – Penobscot Surgical Care, PA, and Kimberly Vanderveen – Denver Center for Endocrine Surgery, P.C.

SPEAKERS: Kimberly Vanderveen – Denver Center for Endocrine Surgery, P.C.; Tom Connally – Norman Regional Hospital; Denise Carneiro-Pla – Medical University of South Carolina; and Allan Siperstein – Cleveland Clinic

1:30 pm — 2:30 pm *President's Ballroom*

SCIENTIFIC SESSION V: Papers 20-23

MODERATORS: John Phay, MD – *Ohio State Medical Center*, and Linwah Yip, MD – *University of Pittsburgh Medical Center*

2:30 pm — 2:45 pm *Ambassador & Forest Rooms*

Breaks, Exhibits, & Poster Viewing

2:45 pm — 4:15 pm *President's Ballroom*

Interesting Cases

MODERATOR: Carmen Solorzano, MD – Vanderbilt University Medical Center

PANELISTS: Janice Pasieka – University of Calgary; Douglas Evans – Medical College of Wisconsin; and Quan-Yang Duh – University of California San Francisco

4:30 pm — 5:30 pm *President's Ballroom*

AAES Business Meeting

**Only Active, Allied Specialist and Senior Members need attend*

7:00 pm — 8:00 pm *President's Gallery & Terrace*

Gala Reception

8:00 pm — 10:30 pm *President's Ballroom*

Gala Dinner

Gala Dinner included with registration; ticket required for guests

The AAES Gala Dinner has assigned seating. Please come by the Registration Desk and sign up for your seat by Monday at 1:30pm.

AGENDA CONTINUED

TUESDAY, MAY 8, 2018

7:00 am — 8:00 am *President's Ballroom Pre-Function*
Registration Open

7:00 am — 8:00 am *Ambassador & Forest Rooms*
Main Breakfast in Exhibit Space

7:00 am — 8:00 am *President's Ballroom*
BREAKFAST SESSION (optional)
"Transoral Endoscopic Endocrine Surgery in the U.S.: Lessons, Tips, Future Directions"
Educational grant support provided by Medtronic

FACULTY: Tobias Carling – Yale University; Raymon H. Grogan – Baylor College of Medicine; Insoo Suh – University of California San Francisco; and William B. Inabnet, III - Icahn School of Medicine at Mount Sinai

7:00 am — 8:00 am *Biddle Room*
Community Based Surgeons Committee Meeting

8:00 am — 8:45 am *President's Ballroom*
HISTORICAL LECTURER
"William Stewart Halsted; Our Surgical Heritage (Also an Endocrine Surgeon!)"
SPEAKER: John Cameron, MD **-** *John Hopkins Hospital*

8:45 am — 10:00 am *President's Ballroom*
SCIENTIFIC SESSION VI: Papers 24-28
MODERATORS: Herb Chen, MD - *University of Alabama at Birmingham,*
and Sarah Oltmann, MD – *University of Texas Southwestern*

10:00 am — 10:30 am *Ambassador & Forest Rooms*
Break, Exhibits, & Poster Viewing

10:30 am — 12:00 pm *President's Ballroom*
SCIENTIFIC SESSION VII: Papers 29-34
MODERATORS: Bradford Carter, MD – *Bryn Mawr College,*
and Christina Maser, MD – *California State University, Fresno*

12:00 pm
Meeting Adjourn

SCIENTIFIC PROGRAM

♦ Denotes Resident/Fellow Research Award Competition Paper

NOTE: Author listed in **BOLD** is the presenting author

The Scientific Program includes all sessions that are eligible for CME credit. Credit amounts for each session are listed on page 37.

SCIENTIFIC PROGRAM

SUNDAY, MAY 6, 2018

8:30 am — 10:00 am *Forest Room*

Poster Walk Around & Poster Judging

10:00 am — 10:45 am *President's Ballroom*

AAES Opening Session

Welcome & Memoriam – Martha Zeiger, MD

Welcome to Durham – Sanziana Roman, MD and Julie Ann Sosa, MD, MA

Introduction of New Members

Introduction to 2017 Paul LoGerfo Award Presentations – Kepal Patel, MD
Xavier Keutgen, MD – Rush University Medical Center
Raymon Grogan, MD – Baylor College of Medicine

Introduction to 2017 ThyCa: Thyroid Cancer Survivors' Association Award for Thyroid Cancer Research – Kepal Patel, MD
Melissa Wilson, MD – NYU Langone Medical Center

10:45 am — 12:00 pm *President's Ballroom*

SCIENTIFIC SESSION I: Papers 1-5

MODERATORS: Wen Shen, MD - *University of California San Francisco*, and Glenda Callendar, MD – *Yale University*

10:45 am – 11:00 am

♦ **01.** A TALE OF TWO CITIES: INCREASED RAI DOSE IMPROVES RECURRENCE RATES IN ATA HIGH RISK DIFFERENTIATED THYROID CANCER

Katherine D. Gray[1], Sahar Bannani[2], Cecile Caillard[2], Sonia Amanat[1], Pavel Romanov[1], Timothy M Ullmann[1], Laurent Brunaud[3], Toni Beninato[1], Thomas J. Fahey, III[1], Eric Mirallie[2], Rasa Zarnegar[1]

[1]New York Presbyterian Hospital, Weill Cornell Medicine, [2]Hotel-Dieu Hospital - CHU Nantes, [3]University of Lorraine - CHRU Nancy

11:00 am – 11:15 am

♦ **02.** DO PATIENTS WITH FAMILIAL NON-MEDULLARY THYROID CANCER PRESENT WITH MORE AGGRESSIVE DISEASE? IMPLICATIONS FOR INITIAL SURGICAL TREATMENT.
Mustapha El Lakis[1], Andreas Giannakou[1], Pavel Nockel[1], Douglas Wiseman[1], Sudheer Gara[1], Dhaval Patel[1], Joanna Klubo-Gwiezdzinska[2], Naris Nilubol[1], Electron Kebebew[1]
[1]Endocrine Oncology Branch, National Cancer Institute, [2]National Institute of Diabetes and Digestive and Kidney Diseases

11:15 am – 11:30 am

♦ **03.** INTER-INSTITUTIONAL VARIATION IN THE PREDICTIVE VALUE OF THYROSEQ V2 FOR THYROID NODULES
Andrea R. Marcadis[1], Allen S. Ho[2], Jennifer L. Marti[3], Justin Tepe[1], Christina E. Swartzwelder[1], Serena Byrd[1], Brian R. Untch[1], Ashok R. Shaha[1], Bin Xu[4], Oscar Lin[4], Ronald A. Ghossein[4], Richard J. Wong[1], Luc G.T. Morris[1]
[1]Head and Neck Surgery, Memorial Sloan Kettering Cancer Center, [2]Surgery, Cedars-Sinai Medical Center, [3]Surgery, New York Presbyterian/Weill Cornell Medical Center, [4]Pathology, Memorial Sloan Kettering Cancer Center

11:30 am – 11:45 am

♦ **04.** POSTOPERATIVE HEMATOMA EVACUATION AFTER THYROID AND PARATHYROID SURGERY: AN ANALYSIS OF THE CESQIP DATABASE
Stephanie D Talutis[1], Sowmya R Rao[1], Frederick T Drake[1], David McAneny[1]
[1]General Surgery, Boston Medical Center

11:45 am – 12:00 pm

♦ **05.** TREATMENT OF LATERAL NECK PAPILLARY THYROID CARCINOMA RECURRENCE AFTER COMPARTMENT-ORIENTED LATERAL NECK DISSECTION
Veljko Strajina[1], Zahraa Al-Hilli[1], Benzon M Dy[1], Mabel Ryder[1], Geoffrey B Thompson[1], David R Farley[1], Travis J McKenzie[1], Melanie L Lyden[1]
[1]Mayo Clinic, Rochester, MN

12:00 pm — 2:00 pm President's Terrace & Gallery; Vista Restaurant
Lunch Break (Lunch provided)

SUNDAY, MAY 6, 2018

12:00 pm — 1:30 pm *JB Duke Hotel – Ballroom*

LUNCH SESSION at the JB Duke Hotel (optional)

"The Changing Face of Thyroid Cancer Management for Surgeons: Real-Life Applications of the New ATA Guidelines"

Educational grant support provided by Sanofi Genzyme

Limited to the first 250 attendees!

MODERATORS: Antonia Stephen - Massachusetts General Hospital, and David T. Hughes - University of Michigan Health System

PANELISTS: Bryan Haugen - University of Colorado; Libby Grubbs - MD Anderson; Julie Ann Sosa – University of California San Francisco; Peter Sadow - Massachusetts General Hospital; and Gary Bloom - ThyCa: Thyroid Cancer Survivors' Association, Inc.

2:00 pm — 3:00 pm *President's Ballroom*

SCIENTIFIC SESSION II: Papers 6-9

MODERATORS: Sonia Sugg, MD – *University of Iowa Hospitals & Clinics*, and Jacob Moalem, MD – *University of Rochester, Strong Memorial Hospital*

2:00 pm – 2:15 pm

♦ **06.** END-ORGAN EFFECTS OF PRIMARY HYPERPARATHYROIDISM: A POPULATION-BASED STUDY

Yasmine Assadipour[1], **Hui Zhou[2]**, Eric J Kuo[1], Philip I Haigh[3], Annette L Adams[4], Michael W Yeh[1]

[1]Surgery, UCLA, [2]Division of Epidemiology, Kaiser Permanente, [3]Oncologic and Endocrine Surgery, Kaiser Permanente, [4]Kaiser Permanente

2:15 pm – 2:30 pm

♦ **07.** THE DEVIL IS IN THE DETAILS: ASSESSING TREATMENT AND OUTCOMES OF 6795 PATIENTS UNDERGOING REMEDIAL PARATHYROIDECTOMY IN CESQIP

Hadiza S Kazaure[1], Samantha M Thomas[1], Michael T Stang[1], Randall P Scheri[1], Sanziana A Roman[2], Julie Ann Sosa[2]

[1]University of California San Francisco

2:30 pm – 2:45 pm

♦ **08.** HIGH PREVALENCE OF CHRONIC KIDNEY DISEASE IN PATIENTS WITH MULTIPLE ENDOCRINE NEOPLASIA TYPE 1 AND IMPROVED KIDNEY FUNCTION AFTER PARATHYROIDECTOMY

Patience Green[1], Jonathan Zagzag[2], Dhavel Patel[3], Lee S. Weinstein[4], William Simonds[4], Stephen Marx[4], Electron Kebebew[1,5], Nancy Perrier[2], Naris Nilubol[1]
[1]Endocrine Oncology Branch, National Cancer Institute, [2]Department of Surgical Oncology, The University of Texas-MD Anderson Cancer Center, [3]Endocrine Oncology Branch, Endocrine Oncology Branch, National Cancer Institute, [4]Metabolic Diseases Branch, National Institute of Diabetes and Digestive and Kidney Diseases, [5]Department of Surgery, The George Washington University, School of Medicine and Health Science

2:45 pm – 3:00 pm

♦ **09.** BONE MINERAL DENSITY CHANGES AFTER CURATIVE PARATHYROIDECTOMY: AN ANALYSIS OF PATIENTS WITH PRIMARY HYPERPARATHYROIDISM ACCORDING TO BIOCHEMICAL PROFILES

Denise T Lee[1], Marcella D Walker[2], John A Chabot[1], James A Lee[1], Jennifer H Kuo[1]
[1]Surgery, New York Presbyterian Hospital/Columbia University Medical Center, [2]Medicine, New York Presbyterian Hospital/Columbia University Medical Center

3:00 pm — 3:30 pm *Ambassador & Forest Rooms*
Break, Exhibits, & Poster Viewing

3:30 pm — 4:45 pm *President's Ballroom*
SCIENTIFIC SESSION III: Papers 10-14
MODERATORS: Emad Kandil, MD – *Tulane School of Medicine*, and William Mendez, MD – *University of Puerto Rico*

3:30 pm – 3:45 pm

♦ **10.** CHARACTERIZATION OF SOMATOSTATIN RECEPTORS (SSTRS) EXPRESSION AND ANTI-PROLIFERATIVE EFFECT OF SOMATOSTATIN ANALOGUES IN AGGRESSIVE THYROID CANCERS.

Danilea M Carmona-Matos[1], Samuel Jang[1], Baraa Hijaz[1], Alexander W Chang[1], Ricardo V Lloyd[2], Herbert Chen[1], Renata Jaskula-Sztul[1]
[1]Surgery, University of Alabama at Birmingham, [2]Pathology, University of Wisconsin School of Medicine and Public health

3:45 pm – 4:00 pm

♦ **11.** EPIGENETIC CHROMATIN CONFORMATION CHANGES IN PERIPHERAL BLOOD CAN DETECT THYROID CANCER
Huan Yan[1], Ewan Hunter[2], Alexandre Akoulitchev[2], David J Winchester[1], Tricia Moo-Young[1], Richard Prinz[1]
[1]Surgical Oncology, NorthShore University HealthSystem, [2]Oxford Biodynamics

4:00 pm – 4:15 pm

♦ **12.** PROSPECTIVE STUDY OF THE PATHOPHYSIOLOGY OF CARCINOID CRISIS
Mary E. Condron[1], Nora Jameson[1], **Kristen E. Limbach[1]**, Ann E. Bingham[1], Valerie A. Sera[1], Ryan B. Anderson[1], Katie J. Schenning[1], Shaun Yockelson[1], Izumi Harukuni[1], Ed A. Kahl[1], Elizabeth Dewey[1], SuEllen J. Pommier[1], Rodney F. Pommier[1]
[1]Oregon Health & Science University

4:15 pm – 4:30 pm

♦ **13.** 68GALLIUM DOTATATE PET CT CHANGES MANAGEMENT IN A MAJORITY OF PATIENTS WITH NEUROENDOCRINE TUMORS
John F Tierney[1], Cory A Kosche[1], Jennifer Poirier[1], Sam G Pappas[1], Erik Schadde[1], Xavier M Keutgen[1]
[1]Surgery, Rush University Medical Center

4:30 pm – 4:45 pm

♦ **14.** EFFECTIVE CYTOREDUCTION CAN BE ACHIEVED IN PATIENTS WITH NUMEROUS NEUROENDOCRINE TUMOR LIVER METASTASES
Aaron T. Scott[1], Patrick Breheny[2], Kendall J. Keck[1], Andrew M. Bellizzi[3], Joseph S. Dillon[4], Thomas M. O'Dorisio[4], James R. Howe[1]
[1]Department of Surgery, University of Iowa Carver College of Medicine, [2]Department of Biostatistics, University of Iowa College of Public Health, [3]Department of Pathology, University of Iowa Carver College of Medicine, [4]Department of Internal Medicine, University of Iowa Carver College of Medicine

MONDAY, MAY 7, 2018

8:00 am — 8:45 am *President's Ballroom*

Orlo & Carol Clark Distinguished Lecturer in Endocrine Surgery: "Breakthrough to Brave"

SPEAKER: Julie Freischlag, MD - Wake Forest Baptist Medical Center

8:45 am — 10:00 am *President's Ballroom*

SCIENTIFIC SESSION IV: Papers 15-19

MODERATORS: Nancy Perrier, MD – *MD Anderson Cancer Center*, and Karen Devon, MD – *University of Toronto*

8:45 am – 9:00 am

♦ **15.** NIFT-P: ARE THEY BENIGN RESULTS OF A MULTI-INSTITUTIONAL STUDY.

Nathalie Chereau[1], Tristan Greilsamer[2], Eric Mirallie[2], Samira Sadowski[3], Marc Pusztaszeri[3], Frederic Triponez[3], Gregory Baud[4], Francois Pattou[4], Niki Christou[5], Muriel Mathonnet[5], Laurent Brunaud[6], Pierre Goudet[7], Carole Guerin[8], Frederic Sebag[8], Giancula Donatini[9], Jean-Louis Kraimps[9], Frederique Tissier[10], Laurence Leenhardt[10], Fabrice Menegaux[10]

[1]Hopital PITIE Salpetriere, [2]CHU Nantes, [3]CHU Genève, [4]CHU Lilles, [5]CHU Limoges, [6]CHU Nancy, [7]CHU Dijon, [8]CHU Marseille, [9]CHU Poitiers, [10]CHU Pitié Salpetrière

9:00 am – 9:15 am

♦ **16.** THE ASSOCIATION OF THE ULTRASONOGRAPHY TIRADS CLASSIFICATION SYSTEM AND PATHOLOGY IN INDETERMINATE THYROID NODULES

Zeyad T Sahli[1], Farah Karipineni[1], Jen-Fan Hang[1], Aarti Mathur[1], Jason D Prescott[1], Sheila Sheth[1], Syed Z Ali[1], Martha A Zeiger[2]

[1]Johns Hopkins, [2]University of Virginia

9:15 am – 9:30 am

♦ **17.** TREATMENT STRATEGY OF END-STAGE RENAL DISEASE RELATED HYPERPARATHYROIDISM BEFORE, DURING AND AFTER THE ERA OF CALCIMIMETICS

Willemijn Y. van der Plas[1], Anton F. Engelsman[2], Marille Umakanthan[3], Amanda Mather[3], Stan B. Sidhu[2], Leigh H. Delbridge[2], Mark S. Sywak[2], Schelto Kruijff[1]

[1]Department of Surgery, University Medical Center Groningen, [2]Department of Endocrine Surgery, Royal North Shore Hospital, [3]Department of Nephrology, Royal North Shore Hospital

MONDAY, MAY 7, 2018

9:30 am – 9:45 am

♦ **18.** PARATHYROIDECTOMY VERSUS CINACALCET IN THE MANAGEMENT OF TERTIARY HYPERPARATHYROIDISM: SURGERY IMPROVES TRANSPLANT ALLOGRAFT SURVIVAL
Brendan M Finnerty[1], Tyler W Chan[1], Gregory Jones[1], Tarek Khader[1], Maureen Moore[1], Toni Beninato[1], Anthony C Watkins[1], Rasa Zarnegar[1], Thomas J Fahey III[1]
[1]Surgery, New York Presbyterian Hospital - Weill Cornell

9:45 am – 10:00 am

♦ **19.** PREOPERATIVE CALCITRIOL REDUCES POSTOPERATIVE INTRAVENOUS CALCIUM REQUIREMENTS AND LENGTH OF STAY IN PARATHYROIDECTOMY FOR RENAL-ORIGIN HYPERPARATHYROIDISM
Salman K Alsafran[1], Scott K Sherman[1], Fadi S Dahdaleh[1], Brian Ruhle[1], Edwin Kaplan[1], Peter Angelos[1], Raymon H Grogan[1]
[1]Endocrine Surgery Research Program, University of Chicago

10:00 am — 10:30 am *Ambassador & Forest Rooms*
Breaks, Exhibits, & Poster Viewing

10:30 am — 11:30 am *President's Ballroom*
PRESIDENTIAL ADDRESS: "The Magic of Endocrine Surgery. Our Origins, Our Legacy, Our Future"
SPEAKER: Martha Zeiger, MD – *University of Virginia School of Medicine*

11:30 am — 1:30 pm President's Terrace & Gallery; Vista Restaurant
Lunch Break (Lunch provided)

12:00 pm — 1:00 pm *President's Ballroom*
LUNCH SESSION (optional)
"The Business of Endocrine Surgery"

MODERATORS: Michael Starks – Penobscot Surgical Care, PA, Kimberly Vanderveen – Denver Center for Endocrine Surgery, P.C.

SPEAKERS: Kimberly Vanderveen – Denver Center for Endocrine Surgery, P.C., Tom Connally – Norman Regional Hospital, Denise Carneiro-Pla – Medical University of South Carolina, Allan Siperstein – Cleveland Clinic

1:30 pm — 2:30 pm *President's Ballroom*
SCIENTIFIC SESSION V: Papers 20-23
MODERATORS: John Phay, MD – *Ohio State Medical Center*, and Linwah Yip, MD – *University of Pittsburgh Medical Center*

MONDAY, MAY 7, 2018

1:30 pm – 1:45 pm

♦ **20.** VALIDATION OF A NOVEL PATIENT-REPORTED OUTCOMES MEASURE FOR PARATHYROID AND THYROID DISEASE (PROMPT)
Talia Burneikis[1], Jennifer Colvin[1], Judy Jin[1], Eren Berber[1], Vikram Krishnamurthy[1], Joyce Shin[1], Allan Siperstein[1]
[1]The Cleveland Clinic

1:45 pm – 2:00 pm

♦ 21. UNRECOGNIZED PRIMARY ALDOSTERONISM IN HYPERTENSIVE PATIENTS WITH HYPOKALEMIA OR SLEEP APNEA
Brian C Ruhle[1], Salman Alsafran[1], Peter Angelos[1], Edwin Kaplan[1], Raymon Grogan[1]
[1]University of Chicago Medicine

2:00 pm – 2:15 pm

♦ **22.** EXPRESSION OF PROGRAMMED DEATH LIGAND-1 AND 2 IN ADRENOCORTICAL CANCER TISSUES: AN EXPLORATORY STUDY
John F Tierney[1], Alyx Vogyl[1], Irene M Min[2], Jennifer Poirier[1], Brendan Finnerty[2], Rasa Zarnegar[2], Theresa Scognamiglio[3], Paolo Gattuso[4], Ritu Ghai[4], Thomas J Fahey[2], Xavier M Keutgen[1]
[1]Surgery, Rush University Medical Center, [2]Surgery, Weill Cornell Medical College, [3]Pathology, Weill Cornell Medical College, [4]Pathology, Rush University Medical Center

2:15 pm – 2:30 pm

♦ **23.** LONGITUDINAL PATTERNS OF RECURRENCE IN PATIENTS WITH ADRENOCORTICAL CARCINOMA
Jason Glenn[1], Tobias Else[2], David Hughes[1], Mark Cohen[1], Paul Gauger[1], Gary Hammer[2], Barbra Miller[1]
[1]Endocrine Surgery, University of Michigan, [2]Endocrinology, University of Michigan

2:30 pm — 2:45 pm *Ambassador & Forest Rooms*
Breaks, Exhibits, & Poster Viewing

2:45 pm — 4:15 pm *President's Ballroom*
Interesting Cases
MODERATOR: Carmen Solorzano, MD – Vanderbilt University Medical Center

PANELISTS: Janice Pasieka – University of Calgary; Douglas Evans – Medical College of Wisconsin; and Quan-Yang Duh – University of California San Francisco

TUESDAY, MAY 8, 2018

7:00 am — 8:00 am *President's Ballroom*

BREAKFAST SESSION (optional)

"Transoral Endoscopic Endocrine Surgery in the U.S.: Lessons, Tips, Future Directions"

Educational grant support provided by Medtronic

FACULTY: Tobias Carling – Yale University; Raymon H. Grogan – Baylor College of Medicine; Insoo Suh – University of California San Francisco; and William B. Inabnet, III - Icahn School of Medicine at Mount Sinai

8:00 am — 8:45 am *President's Ballroom*

HISTORICAL LECTURER

"William Stewart Halsted; Our Surgical Heritage (Also an Endocrine Surgeon!)"

SPEAKER: John Cameron, MD - *John Hopkins Hospital*

8:45 am — 10:00 am *President's Ballroom*

SCIENTIFIC SESSION VI: Papers 24-28

MODERATORS: Herb Chen, MD - *University of Alabama at Birmingham,* and Sarah Oltmann, MD – *University of Texas Southwestern*

8:45 am – 9:00 am

24. A PROPENSITY-MATCHED ANALYSIS OF CLINICAL OUTCOMES BETWEEN OPEN THYROID LOBECTOMY AND HIGH INTENSITY FOCUSED ULTRASOUND (HIFU) ABLATION IN THE TREATMENT OF BENIGN THYROID NODULES

Brian H Lang[1], Carlos Wong[2], Yu Cho Woo[3], Keith Chiu[4]

[1]Surgery, University of Hong Kong, [2]Community Medicine, University of Hong Kong, [3]Medicine, University of Hong Kong, [4]Radiology, University of Hong Kong

9:00 am – 9:15 am

25. STAGE MIGRATION WITH THE NEW STAGING SYSTEM [8TH EDITION] FOR DIFFERENTIATED THYROID CANCER

Ashok R. Shaha[1], Jocelyn C Migliacci[1], Iain J Nixon[1], Laura Y Wang [1], Richard J Wong[1], Luc G.T. Morris[1], Snehal G Patel[1], Jatin P Shah[1], R. Michael Tuttle[1], Ian Ganly[1]

[1]Memorial Sloan Kettering Cancer Center

9:15 am – 9:30 am

26. THE OPTIMAL LEVOTHYROXINE DOSING SCHEME AFTER THYROIDECTOMY: A COMPREHENSIVE COMPARISON AND EVALUATION

Nick Zaborek[1], Andy Cheng[1], Joseph Imbus[1], Kristin L. Long[1], Susan C. Pitt[1], Rebecca S. Sippel[1], David F. Schneider[1]

[1]Department of Surgery, University of Wisconsin School of Medicine and Public Health

TUESDAY, MAY 8, 2018

9:30 am – 9:45 am

27. UNILATERAL BENIGN MULTINODULAR GOITER VS SOLITARY NODULE: CONTRALATERAL RECURRENCE RATES AFTER LOBECTOMY

Beatriz de Rienzo-Madero[1], John Sabra[1], Elise Gand[1], Gianluca Donatini[1], Jean-Louis Kraimps[1]

[1]Endocrine Surgery, CHU Poitiers

9:45 am – 10:00 am

28. NATURAL HISTORY OF PAPILLARY THYROID MICROCARCINOMA: KINETIC ANALYSES ON THE TUMOR VOLUME DURING ACTIVE SURVEILLANCE AND BEFORE PRESENTATION

Akira Miyauchi[1], Takumi Kudo[2], Yasuhiro Ito[1], Hitomi Oda[1], Masatoshi Yamamoto[1], Hisanori Sasai[3], Takuya Higashiyama[1], Mitsuhiro Fukushima[1], Hiroo Masuoka[1], Minoru Kihara[1], Akihiro Miya[1]

[1]Department of Surgery, Kuma Hospital, [2]Department of Internal Medicine, Kuma Hospital, [3]Department of Head and Neck Surgery, Kuma Hospital

10:00 am — 10:30 am *Ambassador & Forest Rooms*

Break, Exhibits, & Poster Viewing

10:30 am — 12:00 pm *President's Ballroom*

SCIENTIFIC SESSION VII: Papers 29-34

MODERATORS: Bradford Carter, MD – *Bryn Mawr College,* and Christina Maser, MD – *California State University, Fresno*

10:30 am – 10:45 am

29. PRIMARY HYPERALDOSTERONISM WITH NON-LOCALIZING IMAGING

Heather Wachtel[1], Sonia Bhandari[1], Robert E Roses[1], Debbie L Cohen[2], Scott O Trerotola[3], Douglas L Fraker[1]

[1]Dept. of Surgery, Hospital of the University of Pennsylvania, [2]Dept. of Medicine, Div. of Renal, Electrolytes and Hypertension, Hospital of the University of Pennsylvania, [3]Dept. of Radiology, Div. of Vascular and Interventional Radiology, Hospital of the University of Pennsylvania

10:45 am – 11:00 am

30. OVER EXPRESSION OF CELL-CYCLE DEPENDENT PROTEINS ASSOCIATED WITH LOWER SURVIVAL IN ADRENOCORTICAL CARCINOMA PATIENTS

Chitra Subramanian[1], Thomas J Giordano[2], Mark S Cohen[3]

[1]General Surgery, University of Michigan, [2]Pathology, University of Michigan, [3]General Surgery and Pharmaceutical sciences, University of Michigan

SCIENTIFIC PROGRAM CONTINUED

TUESDAY, MAY 8, 2018

11:00 am – 11:15 am

31. GROWING HUMAN PARATHYROIDS IN A MICROPHYSIOLOGICAL SYSTEM: A NOVEL APPROACH TO UNDERSTANDING AND DEVELOPING NEW TREATMENTS FOR HYPERPARATHYROIDISM

Palaniappan Sethu[1], Thomas A Haglund[1], Aaron J Rodgers[1], Herbert Chen[2], John Porterfield[1], Courtney J Balentine[1]

[1]UAB, [2]Surgery, UAB

11:15 am – 11:30 am

32. THE EFFECT OF TOTAL THYROIDECTOMY ON THE RECOVERY OF BONE MINERAL DENSITY IN SUBJECTS WITH HYPERTHYROIDISM

Poongkodi Karunakaran[1,2], Premkumar Asokumar[3], Kamaleshwaran Koramadai Karuppusamy[4], Rajasekaran Chockalingam[5], Vijay Sadasivam[6], Chandrasekaran Maharajan[7]

[1]Endocrine Surgery, Government Mohan Kumaramangalam Medical College, Salem, [2]Endocrine Surgery, SKS Hospital, [3]Diabetes, Endocrinology and Metabolism, SKS Hospital, [4]Nuclear Medicine and PET/CT, Kovai Medical Centre and Hospital, [5]General Surgery, Government Mohan Kumaramangalam Medical College and Hospital, [6]Radiology, SKS Hospital, [7]Endocrine Surgery, Madras Medical College, Chennai

11:30 am – 11:45 am

33. TOTAL VS SUBTOTAL PARATHYROIDECTOMY FOR SECONDARY HYPERPARATHYROIDISM

Martin Almquist[1], Elin Isaksson[1], Kerstin Ivarsson[2], Shahriar Akaberi[3], Andreas Muth[4], Karl-Göran Prutz[5], Naomi Clyne[3], Gunnar Sterner[3]

[1]Dept. of Surgery, Skåne University Hospital, [2]Skåne University Hospital, [3]Dept. of Nephrology, Skåne University Hospital, [4]Dept. of Surgery, Sahlgrenska University Hospital, [5]Dept. of Internal Medicine, Section of Nephrology, Helsingborg Hospital

11:45 am – 12:00 pm

34. INNOVATIVE SURGICAL GUIDANCE FOR LABEL-FREE REAL-TIME PARATHYROID IDENTIFICATION.

Giju Thomas[1,2], Melanie A McWade[1,2], John Q Nguyen[1,2], Melinda E Sanders[3], Naira Baregamian[4], Carmen C Solorzano[4], Anita Mahadevan-Jansen[1,2]

[1]Vanderbilt Biophotonics Center, Vanderbilt University, [2]Department of Biomedical Engineering, Vanderbilt University, [3]Department of Pathology, Microbiology and Immunology, Vanderbilt University Medical Center, [4]Division of Surgical Oncology and Endocrine Surgery, Vanderbilt University Medical Center

12:00 pm

Meeting Adjourn

ABSTRACTS

♦ *Denotes Resident/Fellow Research Award Competition Paper*

*NOTE: Author listed in **BOLD** is the presenting author*

ABSTRACTS

♦ 01. A TALE OF TWO CITIES: INCREASED RAI DOSE IMPROVES RECURRENCE RATES IN ATA HIGH RISK DIFFERENTIATED THYROID CANCER

Katherine D. Gray[1], Sahar Bannani[2], Cecile Caillard[2], Sonia Amanat[1], Pavel Romanov[1], Timothy M Ullmann[1], Laurent Brunaud[3], Toni Beninato[1], Thomas J. Fahey, III[1], Eric Mirallie[2], Rasa Zarnegar[1]
[1]New York Presbyterian Hospital, Weill Cornell Medicine, [2]Hotel-Dieu Hospital - CHU Nantes, [3]University of Lorraine - CHRU Nancy

Background: Radioactive iodine (RAI) is commonly used as adjuvant therapy for differentiated thyroid cancer (DTC) with risk factors for residual disease. We aimed to compare the outcomes of patients with ATA high risk DTC in two centers with differing RAI-dosing algorithms.

Methods: The treatment of >1500 patients with DTC at a high volume center in the United States and an unaffiliated high volume center in France between 2004-2014 was reviewed. Patients underwent post hoc stratification using the 2015 ATA guidelines, and only adult patients considered high risk for recurrence were included. Tumors with poorly-differentiated histology were excluded. The final cohort for analysis comprised 183 patients who received either intermediate dose (n=117, median 100 mCi, IQR 100 – 100 mCi) or high dose (n=66, median 150 mCi, IQR 149 – 158 mCi) RAI. Propensity score estimation with nearest neighbor matching was performed to control for baseline characteristics.

Results: Ninety-seven percent of French patients received intermediate dose RAI versus 40% of American patients ($p<0.001$). In the propensity matched cohort, patients in the intermediate and high dose groups had equivalent rates of gross extra-thyroidal extension (71% versus 71%, p=1.00), positive margins (55% versus 55%, p=1.00), lymph node metastases ³ 3 cm (9% versus 9%, p = 1.00), extra-nodal extension (32% versus 33%, p=0.85), and distant metastases (2% versus 5%, p=0.31). In the overall cohort, 87% of patients underwent central neck dissection with no difference in the number of lymph nodes examined between groups (p=0.14).

Mean follow-up was 4.9 versus 5.6 years (p=0.31). The overall recurrence rate was higher in the intermediate dose group than the high dose group, 36% versus 20% (p=0.03). Although the majority of recurrences in both groups occurred in cervical lymph nodes, the rate of lymph node metastases was higher in the intermediate dose group (31% versus 13%, p=0.01). There were no differences in the number of local recurrences (p=0.22) or distant metastases (p=0.25).

Conclusions: Although retrospective, our data suggests that high dose RAI (150 mCi) provides improved oncologic control when compared to intermediate dose RAI (100 mCi) and should be considered for patients with high risk DTC.

ABSTRACTS

♦ 02. DO PATIENTS WITH FAMILIAL NON-MEDULLARY THYROID CANCER PRESENT WITH MORE AGGRESSIVE DISEASE? IMPLICATIONS FOR INITIAL SURGICAL TREATMENT.

Mustapha El Lakis[1], Andreas Giannakou[1], Pavel Nockel[1], Douglas Wiseman[1], Sudheer Gara[1], Dhaval Patel[1], Joanna Klubo-Gwiezdzinska[2], Naris Nilubol[1], Electron Kebebew[1]
[1]Endocrine Oncology Branch, National Cancer Institute, [2]National Institute of Diabetes and Digestive and Kidney Diseases

Background: Familial non-medullary thyroid cancer (FNMTC) accounts for 5% of thyroid cancers. It is defined clinically as the presence of two or more first-degree family members with non-medullary thyroid cancer (NMTC). There have been conflicting reports on whether FNMTC is more aggressive than sporadic NMTC. These conflicting reports may be due to study design issues, incomplete FNMTC status ascertainment and study sample size. The aim of this study was to determine if the clinical and pathologic characteristics of patients with FNMTC was different than sporadic NMTC.

Methods: We compared the clinical and pathologic characteristics of patients with FNMTC (papillary thyroid cancer and it subtypes) to the cohort of 53,571 patients with sporadic papillary thyroid cancer and it subtypes from surveillance, Epidemiology, and End Results (SEER) database.

Results: Seventy-eight patients with FNMTC from 32 different kindred were compared to the SEER cohort. Patients with FMNTC presented at a younger age (p=0.04), with higher rate T1 disease (p=0.019), lymph node metastasis (p=0.002), and classic variant of papillary thyroid cancer on histology (p<0.001). We stratified FNMTC patients by the number of affected members per family. Those with 2 affected members had similar age at presentation, gender distribution, TNM stage and prevalence of extra thyroidal extension compared to patients with sporadic PTC. Whereas patients with ≥ 3 affected family members presented at a younger age (p=0.046), had lower female-to-male ratio (p=0.04) and had higher rate of lymph node metastasis (p=0009). Out of 78 FNMTC patients, 19 were diagnosed by screening. Lymph node metastasis was more prevalent in patients diagnosed with FNMTC at their initial presentation (p=0.003), compared to those diagnosed during screening (p=0.58).

Conclusions: Patients with FNMTC have higher rate of lymph node metastasis. This suggests that the surgical treatment should be more aggressive in patients who presently clinically and who have 3 or more first-degree relatives affected.

ABSTRACTS

♦ 03. INTER-INSTITUTIONAL VARIATION IN THE PREDICTIVE VALUE OF THYROSEQ V2 FOR THYROID NODULES

Andrea R. Marcadis[1], Allen S. Ho[2], Jennifer L. Marti[3], Justin Tepe[1], Christina E. Swartzwelder[1], Serena Byrd[1], Brian R. Untch[1], Ashok R. Shaha[1], Bin Xu[4], Oscar Lin[4], Ronald A. Ghossein[4], Richard J. Wong[1], Luc G.T. Morris[1]
[1]Head and Neck Surgery, Memorial Sloan Kettering Cancer Center, [2]Surgery, Cedars-Sinai Medical Center, [3]Surgery, New York Presbyterian/Weill Cornell Medical Center, [4]Pathology, Memorial Sloan Kettering Cancer Center

Background: The Thyroseq v2 next-generation sequencing assay (Thyroseq) estimates the risk of cancer in indeterminate thyroid nodules (ITN). The accuracy of molecular diagnostic tests can vary based on differing prevalence of disease and pathologic interpretation. We evaluated the overall and mutation-specific accuracy of Thyroseq in predicting malignancy in ITN at 4 institutions with differing prevalence of malignancy.

Methods: We analyzed data from 273 Bethesda III/IV ITN evaluated with Thyroseq and surgically resected at 4 institutions. These included 98 ITN with re-review of matching surgical pathology at a tertiary referral cancer center, ITN treated at a multicenter healthcare system (n=60), academic medical center (n=13), and comprehensive cancer center (n=102). A result was considered "Thyroseq-positive" if alterations with malignancy probability > 30% were reported. The positive (PPV) and negative predictive values (NPV) of Thyroseq results, and distribution of final pathology were analyzed. Measured PPV and NPV were compared to values predicted by Bayes Theorem based on prevalence of malignancy and quoted test sensitivity/specificity. Values were alternatively calculated with NIFTP considered benign or malignant. Additional analyses of RAS-mutated nodules included KRAS, NRAS and HRAS hotspot mutations.

Results: Across 4 institutions (n=273 ITN), the overall PPV was 33% (range 22-41%), and NPV 93% (89-100%). Considering NIFTP reclassification, if NIFTPs were still considered positive results, rates would have been PPV 54% (27-79%) and NPV 85% (78-100%). Actual PPV and NPV values correlated with predictions based on institutional prevalence of malignancy (r^2=.87), although PPVs were universally lower than expected. Among 91 RAS-mutated nodules, the risk of malignancy was more variable (26%, range 10-36%), and the distribution of benign diagnoses varied markedly across institutions (adenomas 7-85%, NIFTP 5-42%).

Conclusions: The performance of Thyroseq varies across practice settings, largely attributable to differing prevalence of malignancy. In settings with low malignancy prevalence, NPV is >95% and PPV 20-30%. In settings with higher malignancy prevalence, NPV is closer to 90% and PPV 35-40%. Additionally, there is likely institutional variability in pathologic interpretation, most apparent in classification of NIFTPs. It is critical that users of molecular assays understand these characteristics in their practice setting when evaluating patients with ITN for surgery.

ABSTRACTS

♦ 04. POSTOPERATIVE HEMATOMA EVACUATION AFTER THYROID AND PARATHYROID SURGERY: AN ANALYSIS OF THE CESQIP DATABASE

Stephanie D Talutis[1], Sowmya R Rao[1], Frederick T Drake[1], David McAneny[1]
[1]*General Surgery, Boston Medical Center*

Background: Although rare, complications after thyroidectomy and parathyroidectomy are highly morbid. A particularly feared complication is a postoperative hematoma (PH) that threatens the airway. The aim of this study is to determine factors associated with PH.

Methods: Patients undergoing thyroidectomy and/or parathyroidectomy were evaluated for PH using the Collaborative Endocrine Surgery Quality Improvement Program (CESQIP) Database. Bivariate analysis was conducted using Chi-squared test. Odds ratios (OR) and 95% confidence intervals (CI) were obtained from multivariable logistic regression to assess the relationship of operative variables with PH, with significance defined as a two-sided $p<0.05$.

Results: Among 19,356 patients, 11,688 (60.4%) underwent thyroidectomy, 6,763 (34.9%) underwent parathyroidectomy, and 905 (4.7%) underwent concurrent thyroidectomy and parathyroidectomy. PH occurred in 118 patients (0.6%). PH rates were increased in patients who underwent combined thyroidectomy/parathyroidectomy (1.2%) versus those undergoing thyroidectomy (0.7%) and parathyroidectomy (0.3%) ($p<0.001$). The rate of PH was higher among men (1.0% vs 0.5%, $p<0.001$) but was not influenced by BMI >40 ($p=0.635$), prior anterior neck surgery ($p=0.245$), reoperative thyroidectomy ($p=0.391$), or reoperative parathyroidectomy ($p=0.160$). Patients with PH had longer operative times ($p<0.001$). Patients undergoing bilateral parathyroid exploration or operations for ectopic parathyroid glands were also more likely to experience PH ($p=0.013$).

Multivariable logistic regression determined PH was influenced by operation type (thyroidectomy OR 2.0 CI [1.2, 3.3] and combined thyroidectomy/parathyroidectomy OR 3.6 CI [1.7, 7.4], $p=0.0021$, relative to parathyroidectomy), male sex (OR 2.0, CI [1.4, 3.0], $p=0.0003$), and operative time (1-2 hours: OR 2.2 CI [1.1, 4.4], and time >2 hours: OR 3.1 CI[1.5, 6.3], $p=0.0061$, relative to operative time <1 hour). However PH was unaffected by prior anterior neck surgery (OR 1.4 CI [0.8, 2.2], $p=0.2140$).

Patients with PH also experienced higher rates of complications: 13.6% experienced subsequent intubation, 8.8% tracheostomy, 3.4% vocal cord dysfunction, 18.6% ED visits, and 22.9% readmission within 30 days. Mortality was low in the overall cohort (0.08%). None of the patients with PH died.

Conclusions: Large databases, such as CESQIP's, are useful to evaluate rare complications following thyroid and parathyroid operations. PH hazards are increased in those undergoing thyroidectomy +/- concurrent parathyroidectomy, male gender, and longer operative times.

ABSTRACTS

♦ 05. TREATMENT OF LATERAL NECK PAPILLARY THYROID CARCINOMA RECURRENCE AFTER COMPARTMENT-ORIENTED LATERAL NECK DISSECTION

Veljko Strajina[1], Zahraa Al-Hilli[1], Benzon M Dy[1], Mabel Ryder[1], Geoffrey B Thompson[1], David R Farley[1], Travis J McKenzie[1], Melanie L Lyden[1]
[1]Mayo Clinic, Rochester, MN

Background: Lateral neck nodal metastases are relatively common among patients with papillary thyroid carcinoma (PTC). Recurrence rates following lateral neck dissection for PTC range from 18 to 30%. There is paucity of data regarding optimal treatment options and outcomes for recurrent disease following lateral neck dissection in patients with PTC.

Methods: Recurrences following lateral neck dissection for metastatic PTC were recorded. Treatment modalities included either reoperation or ultrasound-guided ethanol ablation (ETOH). Patient and recurrence characteristics were recorded and correlated with treatment outcomes; groups with either ETOH or surgical reoperation as the primary treatment modality for first time recurrences following lateral neck dissection for PTC were compared.

Results: Sixty-seven first time recurrences were identified in 64 patients following lateral neck dissection. The recurrences were treated between 2001 and 2017. Follow up data were available for 54 patients with 57 recurrences. ETOH was the initial treatment strategy in 37 recurrences (55%, follow up available for 32 patients) and upfront surgery was performed in 30 recurrences (45%, follow up available for 25 patients). Baseline characteristics were different between patients who were initially treated with ETOH vs. surgery: the largest lymph node (LN) diameter (mean 13 vs. 18 mm, p<.001), the mean number of metastatic LNs identified on US (1.3 vs 1.9, p=.04) and the presence of distant metastases (19% vs 32%, p=.3). Four patients who were initially treated with ETOH (13%) subsequently underwent surgery and 3 operated patients (12%) subsequently had ETOH (p=.92). Overall, using the combination of surgery and ETOH resulted in lateral neck recurrence control in 84% of recurrences. Each modality alone achieved comparable rates of disease control on last follow up (74 % for ETOH and 76% for surgery, p=.88), with median lateral neck progression-free interval of 4.8 years (range 0.35-13 years). Mean number of reinterventions was also comparable between groups (1.8 for ETOH, 1.6 surgery p=0.6).

Conclusions: Lateral neck recurrence in PTC may be difficult to control. Both alcohol ablation and surgery can achieve disease control in the majority of appropriately selected patients. Although the baseline characteristics of patients were different, treatment outcomes of these two modalities appear to be comparable.

ABSTRACTS

♦ 06. END-ORGAN EFFECTS OF PRIMARY HYPERPARATHYROIDISM: A POPULATION-BASED STUDY

Yasmine Assadipour[1], **Hui Zhou[2]**, Eric J Kuo[1], Philip I Haigh[3], Annette L Adams[4], Michael W Yeh[1]
[1]Surgery, UCLA, [2]Division of Epidemiology, Kaiser Permanente, [3]Oncologic and Endocrine Surgery, Kaiser Permanente, [4]Kaiser Permanente

Background: Patients with primary hyperparathyroidism (PHPT) are at risk for skeletal and renal end-organ damage. We aimed to characterize the frequency and timing of clinical progression in PHPT, and to assess for a correlation between clinical progression and biochemical disease severity.

Methods: We studied patients with biochemically confirmed PHPT within a vertically integrated health system from 1995 to 2014. After quantifying the frequency of pre-existing osteoporosis, nephrolithiasis, and hypercalciuria, we evaluated the cumulative new incidence of these conditions and decline in renal function (advancement of chronic kidney disease stage) for 5 years after the diagnosis of PHPT. The biochemical severity of PHPT was defined by degree of hypercalcemia (severe >11.5 mg/dL, moderate 11.1-11.5 mg/dL, mild 10.5-11.0 mg/dL,) and the presence of classic (parathyroid hormone [PTH] >65 pg/mL) or non-classic (PTH 21-65 pg/mL) PHPT. A Cox proportional hazards model was used to evaluate biochemical severity as a predictor of clinical progression.

Results: The cohort comprised 12,800 patients, of whom 4,103 (32%) had pre-existing end-organ effects (osteoporosis, 22%; nephrolithiasis, 10%; hypercalciuria, 4%). Of the 8,697 remaining patients, 2,368 (27%) clinically progressed over a median of 2.1 years. The rates of clinical progression in classic and non-classic PHPT were 35% and 22%, respectively. The most common initial sign of end-organ damage was decline in renal function (13%), followed by osteoporosis (10%), nephrolithiasis (3%), and hypercalciuria (1%). After adjustment for age, sex, and race/ethnicity, the risk of clinical progression in patients with classic PHPT was similar regardless of the degree of hypercalcemia (severe, hazard ratio [HR] 0.96, 95% confidence interval [CI] 0.80-1.16; moderate, HR 1.03, 95% CI 0.91-1.17; mild=reference). The risk of clinical progression was decreased in patients with non-classic PHPT in comparison to classic PHPT, and again the degree of hypercalcemia did not influence outcome (severe, HR 0.58, 95% CI 0.46-0.76; moderate, HR 0.61, 95% CI 0.52-0.72; mild, HR 0.61, 95% CI 0.56-0.68).

Conclusions: End-organ manifestations of PHPT develop prior to biochemical diagnosis or within 5 years in the majority of patients. Adverse skeletal and renal effects occurred more frequently in patients with classic PHPT versus non-classic PHPT, regardless of severity of hypercalcemia.

ABSTRACTS

♦ 07. THE DEVIL IS IN THE DETAILS: ASSESSING TREATMENT AND OUTCOMES OF 6795 PATIENTS UNDERGOING REMEDIAL PARATHYROIDECTOMY IN CESQIP

Hadiza S Kazaure[1], Samantha M Thomas[1], Michael T Stang[1], Randall P Scheri[1], Sanziana A Roman[2], Julie Ann Sosa[2]
[1]University of California San Francisco

Background: Remedial parathyroidectomy (R-PTx) is more technically challenging than initial parathyroidectomy (I-PTx). There are scarce data describing the characteristics and outcomes of patients undergoing R-PTx at a multi-institutional level.

Methods: Using data captured in the Collaborative Endocrine Surgery Quality Improvement Program (CESQIP, 2014-17), demographic and clinical characteristics of patients undergoing R-PTx vs. I-PTx were compared, including diagnosis (any hyperparathyroidism), imaging, intraoperative parathyroid hormone (IoPTH) and nerve monitoring (IoNM). Outcomes at ≥6-months were measured, including vocal cord dysfunction, hypoparathyroidism, and failure to cure. Differences between R-PTx vs. I-PTx patients were examined using bivariate methods; multivariate regression was used to estimate the independent effect of R-PTx vs. I-PTx on failure to cure.

Results: There were 6795 cases. A total of 367 (5.4%) underwent R-PTx. Patients undergoing R-PTx more often had non-sporadic primary hyperparathyroidism than those undergoing I-PTx (18.8% vs. 8.1% respectively, p<0.001). A single localization study was done in 24.8% vs. 26.9% of R-PTx vs. I-PTx (p=0.37). Patients undergoing RTx had higher rates of preoperative laryngoscopy (45.5% vs. 6.2%, p<0.001) and IoNM (57.5% vs 34.5%, p<0.001) than those undergoing I-PTx. More patients undergoing R-PTx failed to have a 50% drop in IoPTH than those undergoing I-PTx (20.2% vs. 13.7%, p<0.001). Among 1157 patients with ≥6-months follow-up, none of the R-PTx vs. three I-PTx patients (0.3%) had vocal cord dysfunction. Hypocalcemia (10.5% vs. 2.3%, p=0.001) and failure to cure (21.1% vs. 4.1%, p<0.001) were more likely after R-PTx than I-PTx. When stratified by diagnosis, patients undergoing R-PTx had higher failure to cure rates than I-PTx patients (sporadic primary hyperparathyroidism: 21.3% vs. 3.8%, p<0.001; secondary/tertiary/familial hyperparathyroidism: 20.0% vs. 9.4% p=0.214). After adjustment, having a single localization study (adjusted odds ratio [AOR] 2.23, p=0.02), concurrent thymectomy (AOR 2.54, p=0.03), R-PTx (AOR 6.58, p<0.001), and <50% drop in IoPTH (AOR 19.41, p<0.001) were associated with failure to cure.

Conclusions: This is the first multi-institutional examination of outcomes from experienced surgeons in CESQIP. While nerve injury rates are low after R-PTX, high rates of hypocalcemia and failure to cure at ≥6-months suggest the potential need for increased preoperative localization to refine remedial surgical management of patients with hyperparathyroidism.

ABSTRACTS

♦ 08. HIGH PREVALENCE OF CHRONIC KIDNEY DISEASE IN PATIENTS WITH MULTIPLE ENDOCRINE NEOPLASIA TYPE 1 AND IMPROVED KIDNEY FUNCTION AFTER PARATHYROIDECTOMY

Patience Green[1], Jonathan Zagzag[2], Dhavel Patel[3], Lee S. Weinstein[4], William Simonds[4], Stephen Marx[4], Electron Kebebew[1,5], Nancy Perrier[2], Naris Nilubol[1]
[1]Endocrine Oncology Branch, National Cancer Institute, [2]Department of Surgical Oncology, The University of Texas-MD Anderson Cancer Center, [3]Endocrine Oncology Branch, Endocrine Oncology Branch, National Cancer Institute, [4]Metabolic Diseases Branch, National Institute of Diabetes and Digestive and Kidney Diseases, [5]Department of Surgery, The George Washington University, School of Medicine and Health Science

Background: Patients with multiple endocrine neoplasia type 1 syndrome (MEN1) frequently have prolonged mild primary hyperparathyroidism (pHPT) before developing metabolic complications. Because chronic kidney disease (CKD) is an important comorbidity associated with pHPT, the aim of this study was to evaluate the prevalence of CKD and the effect of parathyroidectomy on kidney function in patients with MEN1-associated pHPT.

Methods: We performed a retrospective analysis of 112 patients with MEN1 associated pHPT who had at least one operation at two tertiary referral centers. The preoperative and postoperative estimated glomerular filtration rates (eGFR), calculated by the Modification of Diet in Renal Disease Study equation, were compared. The prevalence of CKD stage 3 or worse (eGFR >60 ml/min/1.73m2) in this cohort was compared to the rates in the US population reported by the Centers for Disease Control and Prevention.

Results: The median age at the time of surgery was 40.8 years (range: 13-77 years). Ninety-nine patients had biochemical remission. Of 112 patients, 34 (30.4%) had at least 1 risk factor associated with CKD. The rate of stage 3 or worse CKD in patients with MEN1-associated pHPT was higher than the rate observed in the US population at the ages of 20-39 and 40-59, 4.6% (n=2/44) vs. 0.39% (n=18/4565), P=0.015 and 10.0% (n=4/40) vs. 2.31% (n=89/3848), P =0.015, respectively. We observed significantly improved eGFR in those with CKD stage 3 or worse postoperatively (45.2 vs. 51.3, P=0.048) and a trend towards improved eGFR in patients who had at least 1 risk factor for CKD (83.3 vs. 89.1 ml/min/1.73 m2, P =0.18). 41.2 % (n=42/102) of patients had kidney stones and/or nephrocalcinosis. A successful parathyroidectomy significantly lowered and normalized all 24-hour urine calcium excretion (mean of 306 mg/24 hours to 177 mg/24-hour, P <0.01).

Conclusions: Patients with MEN1-associated pHPT have a higher rate of stage 3 or worse CKD as compared to the US population. Parathyroidectomy improves kidney function in patients with MEN1-associated pHPT and CKD stage 3 or worse. Thus, eGFR < 60ml/min is an indication for parathyroidectomy in patients with MEN1-associated pHPT.

ABSTRACTS

♦ 09. BONE MINERAL DENSITY CHANGES AFTER CURATIVE PARATHYROIDECTOMY: AN ANALYSIS OF PATIENTS WITH PRIMARY HYPERPARATHYROIDISM ACCORDING TO BIOCHEMICAL PROFILES

Denise T Lee[1], Marcella D Walker[2], John A Chabot[1], James A Lee[1], Jennifer H Kuo[1]
[1]Surgery, New York Presbyterian Hospital/Columbia University Medical Center, [2]Medicine, New York Presbyterian Hospital/Columbia University Medical Center

Background: Primary hyperparathyroidism (PHPT) is associated with low bone mineral density (BMD) and an increased risk of fragility fractures. Current guidelines suggest parathyroidectomy (PTX) for PHPT patients with osteoporosis as BMD improves after PTX. The effect of PTX on BMD in those with the typical PHPT biochemical profile (high serum calcium, high iPTH) has been well studied. There is little data about BMD changes in those with milder biochemical forms of PHPT: normocalcemic (high PTH, normal calcium) and normohormonal (high calcium, normal PTH) profiles.

Methods: We performed a retrospective cohort analysis of patients with pre- and post-PTX dual-energy X-ray absorptiometry (DXA) who underwent curative PTX for PHPT at a single academic center between 2004-2012. Patients were stratified by biochemical status. Within-person changes in BMD pre- and post-PTX were analyzed using linear mixed models.

Results: 92 PHPT patients (age 63±12, 84% female) with pre- (median time 4.2 months) and post-PTX (13.4 months) DXA were included (typical, N=57; normocalcemic, N=24; normohormonal, N=11). In the typical, normocalcemic and normohormonal groups, mean calcium levels were 11.1±0.7, 9.8±0.3 and 10.8±0.2 mg/dL, and PTH were 156±75, 107±43 and 52±14pg/mL, respectively. BMD increased post-PTX in the whole cohort at the lumbar spine (LS: +2.5%, $p<0.01$), femoral neck (FN: +2.1%, $p<0.01$), total hip (TH: +1.9%, $p<0.01$) and 1/3-radius (-0.9%, $p<0.05$). Comparing BMD changes by profile, BMD increased (all $p<0.01$) in those with the typical profile at the LS (3.2%), TH (2.9%) and FN (2.9%) but declined at the 1/3-radius (-1.5%). In the normocalcemic group, BMD declined at the FN (-3.5%, $p<0.05$) and TH (-3.1%, $p<0.01$) but did not change at the LS or 1/3-radius. In the normohormonal group, BMD did not change at any site. Comparing between groups, the only statistically significant change in BMD over time was between the normocalcemic and typical groups at the LS ($p=0.048$).

Conclusions: Our results indicate BMD improves after PTX in patients with the typical biochemical profile of PHPT. The skeletal benefit of PTX was attenuated in those with milder biochemical profiles. These results suggest that skeletal changes after PTX may depend on biochemical profile.

ABSTRACTS

♦ 10. CHARACTERIZATION OF SOMATOSTATIN RECEPTORS (SSTRS) EXPRESSION AND ANTI-PROLIFERATIVE EFFECT OF SOMATOSTATIN ANALOGUES IN AGGRESSIVE THYROID CANCERS.

Danilea M Carmona-Matos[1], Samuel Jang[1], Baraa Hijaz[1], Alexander W Chang[1], Ricardo V Lloyd[2], Herbert Chen[1], Renata Jaskula-Sztul[1]
[1]Surgery, University of Alabama at Birmingham, [2]Pathology, University of Wisconsin School of Medicine and Public health

Background: Somatostatin (SST) is an inhibitory peptide with ubiquitous presentation in human tissues that exerts its action by binding to somatostatin receptors (SSTR) 1-5. Several human carcinomas have demonstrated distinct expression of SSTRs and provided diagnostic imaging and therapeutic potential with radiolabeled SST analogs. The purpose of this study is to characterize SSTR expression in aggressive thyroid cancers and assess the anti-proliferative effects of somatostatin analogues.

Methods: Proteins from aggressive anaplastic (Hth7 and 8505c) and follicular (FTC236) thyroid cancer cells were isolated and analyzed for basal expression of SSTR1-5 using capillary immunoblotting system followed by densitometry analysis. The basal mRNA expression levels of SSTR1-5 were measured by quantitative real-time PCR (qRT-PCR). All cell lines were treated for two days with one of three SST analogues: octreotide (OCT), pasireotide (SOM230), and KE108. The anti-proliferative effect and IC50 values were determined using the 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) assay. Expression of SSTR2 was examined in human thyroid tissue microarrays.

Results: Capillary immunoblotting analysis demonstrated that all thyroid cancer cell lines expressed SSTR1, SSTR2, SSTR3, and SSTR5 in varying degrees. SSTR3 demonstrated the highest expression among all cell lines while none of them expressed SSTR4. qRT-PCR analysis confirmed the correlation between mRNA expression for SSTR2 and SSTR3 with these proteins. In human primary thyroid samples, SSTR2 was absent in 10 normal thyroid tissues but present in 3 aggressive human thyroid cancers. MTT assay showed that KE108, a pan-somatostatin receptor agonist, demonstrated an IC_{50} of 24 uM for 8505c and 100uM for Hth7 and FTC236 cells. SOM230, an SSTR5, SSTR3 and SSTR2 agonist, demonstrated an IC_{50} of 50uM for FTC236 and 75 uM for 8505c and Hth7 cells. However, OCT, a SSTR2 agonist, did not inhibit the proliferation of any cell line below the concentration of 250 uM.

Conclusions: Aggressive anaplastic and follicular thyroid cancer cell lines and human tumors express somatostatin receptors. SST analogs KE108 and SOM230 exhibited the best anti-proliferative activity among these dedifferentiated thyroid cancer cell lines. Our results suggest that somatostatin receptor subtypes (SSTR1-SSTR3 and SSSTR5) are relevant and promising therapeutic targets for aggressive thyroid cancers.

ABSTRACTS

♦ 11. EPIGENETIC CHROMATIN CONFORMATION CHANGES IN PERIPHERAL BLOOD CAN DETECT THYROID CANCER

Huan Yan[1], Ewan Hunter[2], Alexandre Akoulitchev[2], David J Winchester[1], Tricia Moo-Young[1], Richard Prinz[1]
[1]Surgical Oncology, NorthShore University HealthSystem, [2]Oxford Biodynamics

Background: Fine needle aspiration (FNA) has been the traditional method for diagnosing cancer in thyroid nodules. However it is an invasive procedure. The analysis of epigenetic chromatin conformation changes in blood can detect markers of malignancy, such as melanoma, and offers an alternative method of diagnosing thyroid cancer. The purpose of this study is to evaluate an EpiSwitch™ assay of epigenetic markers that can be used to diagnose thyroid cancer in blood samples.

Methods: From August 2014 to December 2016, adult patients with thyroid nodules having thyroidectomy were recruited. Blood samples were collected prior to surgery, and patients were divided into three equal groups based on FNA cytology: benign, malignant, AUS/FLUS. Final pathologic diagnosis was made from the thyroid specimens. The 0.5mL sample of peripheral blood from each patient was analyzed using the epigenetic EpiSwitch™ assay and the results were compared to the surgical pathology findings to determine assay performance.

Results: Fifty-eight patients were recruited for the study: 20 in benign, 20 in malignant, and 18 in AUS/FLUS cytology. The three groups were similar in age, size of nodule, and gender. Average patient age was 51 years, and 39 (67%) of the patients were female. Six (out of 14 total) epigenetic markers were found from initial analysis of the malignant and benign FNA groups. A total of 26 (44.8%) patients had thyroid cancer in their surgical specimens. The assay was able to correctly identify 23 of the 26 malignant nodules, showing sensitivity of 88.5% and specificity of 69.0%. Positive predictive value for the assay was 71.9% while negative predictive value was 87.0%. In the FLUS group, the assay correctly identified malignancy in 2 patients with follicular carcinoma and 1 incidental papillary carcinoma that was not biopsied.

Conclusions: A blood assay using epigenetic markers has a relatively high sensitivity in detecting cancer in thyroid nodules. The assay provides an additional method for diagnosing thyroid cancer.

ABSTRACTS

♦ 12. PROSPECTIVE STUDY OF THE PATHOPHYSIOLOGY OF CARCINOID CRISIS

Mary E. Condron[1], Nora Jameson[1], **Kristen E. Limbach[1]**, Ann E. Bingham[1], Valerie A. Sera[1], Ryan B. Anderson[1], Katie J. Schenning[1], Shaun Yockelson[1], Izumi Harukuni[1], Ed A. Kahl[1], Elizabeth Dewey[1], SuEllen J. Pommier[1], Rodney F. Pommier[1]
[1]Oregon Health & Science University

Background: Carcinoid tumors secrete an array of vasoactive hormones including serotonin, histamine, tachykinins, and bradykinin. Sudden massive release of these hormones is postulated to cause intraoperative carcinoid crisis, which is characterized by abrupt hemodynamic instability that can result in cardiovascular collapse and death. The pathophysiology underlying crisis is unknown, and the traditional preventive measure of prophylactic octreotide has been recently shown to be ineffective. Optimal treatment and prevention will require improved understanding of the pathophysiology and responsible hormones.

Methods: Carcinoid patients with liver metastases undergoing elective abdominal operations at a high-volume institution from 2015-2017 were prospectively studied using intraoperative transesophageal echocardiography (TEE) and pulmonary artery catheterization. Patients with carcinoid heart disease were excluded. All patients received continuous octreotide infusion at 500 ug/h. TEE videography, hemodynamic data and blood samples were obtained for all patients before incision and during closing, with additional measurements during crises, if they occurred. Serotonin, histamine, kallikrein, and bradykinin levels from blood samples were analyzed by ELISA.

Results: Of the 46 patients studied, 16 had intraoperative hypotensive crises. Pre-incisional serotonin levels were significantly higher in patients who had crises (1063.6 ng/mL vs 452.6 ng/mL, p=0.0064) and were predictive of crisis on a multivariate logistic regression model. The pre-incisional hormone profiles were otherwise diverse. Cardiac function on TEE during crises was normal, but intracardiac hypovolemia was consistently observed. Mean pulmonary artery pressure significantly decreased during crises (p=0.025). Pre-incisional serotonin levels correlated with mid-crisis cardiac index (r=0.73, p=0.017) and cardiac output (r=0.61, p=0.040) on linear regression. Mid-crisis serotonin levels also correlated positively with mid-crisis cardiac index (r=0.61, p=0.017) and cardiac output (r=0.59, p=0.021) and negatively with mid-crisis systemic vascular resistance (r=-0.58, p=0.023). However, there were no significant increases of serotonin, histamine, kallikrein, or bradykinin levels during crises.

Conclusions: The pathophysiology of intraoperative carcinoid crisis is consistent with distributive shock without cardiac dysfunction. Carcinoid tumor hormonal secretion varies widely. Increased pre-incisional serotonin levels correlate with crisis and hemodynamic parameters during crisis. Significant increases of serotonin, histamine, kallikrein, or bradykinin during crisis were not observed, making it unlikely that any of these hormones are directly responsible for precipitating crisis.

ABSTRACTS

♦ 13. 68GALLIUM DOTATATE PET CT CHANGES MANAGEMENT IN A MAJORITY OF PATIENTS WITH NEUROENDOCRINE TUMORS

John F Tierney[1], Cory A Kosche[1], Jennifer Poirier[1], Sam G Pappas[1], Erik Schadde[1], Xavier M Keutgen[1]
[1]Surgery, Rush University Medical Center

Background: ^{68}GaDOTATATE PET CT detects neuroendocrine tumors (NET) by binding to somatostatin receptors on well differentiated NETs. It has shown superior accuracy in detecting NETs over previously used imaging modalities and was recently approved by the FDA and included in the NCCN Guidelines. It remains unclear, however, which patients benefit most from this imaging modality. We therefore reviewed our initial experience with ^{68}GaDOTATATE PET CT to evaluate its usefulness in diagnosing, staging, and surveilling NETs at a tertiary academic medical center.

Methods: Records of patients who underwent ^{68}GaDOTATATE PET CT from March 2017 to September 2017 were prospectively evaluated. The primary endpoint was to determine if ^{68}GaDOTATATE PET CT changes treatment in patients with NETs when compared to cross-sectional imaging or ^{111}In-pentreotide single-photon emission CT. Descriptive statistics and Fisher exact tests were conducted.

Results: 41 consecutive patients were included. 32 patients (78%) had a biopsy-proven NET at the time of imaging. The remaining 9 patients (22%) had either symptoms (2 patients), positive biochemistry (2 patients) or both (5 patients), suggestive of a NET with negative cross-sectional imaging and no tissue diagnosis. The most common indication for ^{68}GaDOTATATE PET CT was tumor staging (54%). ^{68}GaDOTATATE PET CT changed management in 26 patients (63%); 22 of whom had an inter-modality change (switch from medical to surgical/interventional therapy or vice-versa). Additional lesions were detected in 20 patients (49%); previously suspicious lesions were not avid in 6 patients (15%). One of four unknown primary tumors (25%) was localized with ^{68}GaDOTATATE PET CT. None of the scans performed for diagnostic purposes were positive. Patients with liver metastases had a higher likelihood of having a change in management after ^{68}GaDOTATATE PET CT was performed. ($p = 0.05$).

Conclusions: Performing ^{68}GaDOTATATE PET CT should be considered for staging and surveillance of NETs in addition to cross sectional imaging, since it frequently changes management. This imaging modality was not useful for detecting NETs in symptomatic or biochemically positive patients with previous negative cross-sectional imaging.

ABSTRACTS

♦ 14. EFFECTIVE CYTOREDUCTION CAN BE ACHIEVED IN PATIENTS WITH NUMEROUS NEUROENDOCRINE TUMOR LIVER METASTASES

Aaron T. Scott[1], Patrick Breheny[2], Kendall J. Keck[1], Andrew M. Bellizzi[3], Joseph S. Dillon[4], Thomas M. O'Dorisio[4], James R. Howe[1]
[1]Department of Surgery, University of Iowa Carver College of Medicine, [2]Department of Biostatistics, University of Iowa College of Public Health, [3]Department of Pathology, University of Iowa Carver College of Medicine, [4]Department of Internal Medicine, University of Iowa Carver College of Medicine

Background: Cytoreductive surgery for neuroendocrine tumor liver metastases (NETLMs) improves survival and symptomatic control, however, patients often present with numerous, bilobar metastases and are therefore not considered for surgery. Acceptance of a lower target for cytoreduction (≥70% vs. ≥90%) and use of parenchymal sparing techniques has expanded the number of surgical candidates, but the feasibility of achieving adequate cytoreduction in patients with many NETLMs remains uncertain. We set out to compare patient outcomes based upon the number of lesions treated to better define the safety and efficacy of cytoreductive surgery for numerous NETLMs.

Methods: A single institutional surgical database of 391 patients having surgery for gastroenteropancreatic neuroendocrine tumors (GEPNETs) was reviewed and patients undergoing hepatic cytoreductive procedures identified. Pre and postoperative images were reviewed to determine the number of NETLMs, liver tumor burden, and percent tumor debulked. Biochemical response (>50% reduction in elevated hormone levels) and complications were compared between groups. Overall (OS) and progression-free survival (PFS) were compared using the number of lesions treated, percent tumor debulked, and additional clinicopathologic characteristics.

Results: A total of 182 patients undergoing 186 hepatic cytoreductive procedures, including ablations, enucleations and resections for NETLMs were identified. The median number of liver lesions treated was 7 with a range of 1-67. Surgeries were stratified into three groups according to the number of metastases treated: 1-5 (n=74), 6-10 (n=53), and >10 (n=59). Median OS and PFS were 80.4 and 22.9 months, respectively, and were not significantly different between these groups, nor were grade III/IV complications (13.9%), the frequency of ≥70% cytoreduction (76%) or the proportion with biochemical response (69.5%). Patients with 70-90% cytoreduction had similar OS to those with >90% (median 134 months vs. not reached, p=0.639), with both groups showing significantly improved survival relative to those with <70% cytoreduction (median 38 months, p<0.002).

Conclusions: In patients with GEPNETs and NETLMs, ≥70% cytoreduction was associated with improved OS and PFS, and was reliably achieved with similar complication rates in patients undergoing cytoreduction of 1-5, 6-10, or >10 lesions. These data support an aggressive approach to patients with numerous NETLMs to achieve ≥70% cytoreduction.

ABSTRACTS

♦ 15. NIFT-P: ARE THEY « BENIGN »? RESULTS OF A MULTI-INSTITUTIONAL STUDY.

Nathalie Chereau[1], Tristan Greilsamer[2], Eric Mirallie[2], Samira Sadowski[3], Marc Pusztaszeri[3], Frederic Triponez[3], Gregory Baud[4], Francois Pattou[4], Niki Christou[5], Muriel Mathonnet[5], Laurent Brunaud[6], Pierre Goudet[7], Carole Guerin[8], Frederic Sebag[8], Giancula Donatini[9], Jean-Louis Kraimps[9], Frederique Tissier[10], Laurence Leenhardt[10], Fabrice Menegaux[10]

[1]Hopital PITIE Salpetriere, [2]CHU Nantes, [3]CHU Genève, [4]CHU Lilles, [5]CHU Limoges, [6]CHU Nancy, [7]CHU Dijon, [8]CHU Marseille, [9]CHU Poitiers, [10]CHU Pitié Salpetrière

Background: The noninvasive encapsulated follicular variant of papillary thyroid carcinoma (EFV-PTC), has recently been reclassified under the terminology of "noninvasive follicular thyroid neoplasm with papillary-like nuclear features" (NIFTP) on the basis of a highly indolent behaviour, a proposal from an international group of experienced thyroid pathologists. To date, there has not been a large, multicentric evaluation of this reclassification as a benign condition. The goal of this retrospective observational study from 9 surgical departments highly-specialized in endocrine surgery over a 10-year period was to validate this reclassification.

Methods: From 2005 to 2015, we retrospectively reviewed all potential cases for NIFT-P (>10 mm) among identified EFVPTC on the basis of pathology reports. Every report was double-checked by two pathologists (a local and another from the working group) specialized in thyroid diseases. Patients were submitted to carcinologic treatment as recommended at the time of management following standardized procedures, with thyroidectomy, sometimes followed by radioiodine therapy. The primary outcome measures were the occurrence of lymph node (LN) metastasis, or a postoperative event (persistence or recurrence of the disease).

Results: From 6,100 PTC, we found 363 patients with a NIFT-P (6%), 274 females (75%) and 89 males, ranging from 15 to 86 years (median 50 years). A total thyroidectomy was performed in 345 cases (95%), including 133 patients (37%) with a LN dissection, and 296 (82%) who had radioiodine treatment. The NIFT-P had a median size of 25 mm (range, 11-90 mm), 14 were multifocal and 7 bilateral. Sixty-five patients had an associated papillary microcarcinoma (micro-PTC). One patient with an associated micro-PTC of 6 mm had a micro-LN metastasis in the central compartment. With a median 4.8-year follow-up, only one patient developed a tumor recurrence 6 years after initial treatment, but he had also an associated micro-PTC (5 mm). All NIFT-P patients without micro-PTC were without evidence of disease during the follow-up.

Conclusions: We found that NIFT-P show a benign behaviour. However, identification of an associated micro-PTC should be carefully evaluated since it could be a factor of LN metastasis and/or recurrence. This support conservative surgery alone although further prospective studies are needed to confirm this result.

ABSTRACTS

♦ 16. THE ASSOCIATION OF THE ULTRASONOGRAPHY TIRADS CLASSIFICATION SYSTEM AND PATHOLOGY IN INDETERMINATE THYROID NODULES

Zeyad T Sahli[1], Farah Karipineni[1], Jen-Fan Hang[1], Aarti Mathur[1], Jason D Prescott[1], Sheila Sheth[1], Syed Z Ali[1], Martha A Zeiger[2]
[1]Johns Hopkins, [2]University of Virginia

Background: Among cytologically indeterminate thyroid nodules, Afirma has a high sensitivity (92%), low positive predictive value (PPV) (47%), and a benign surgical pathology in more than half of those identified as Afirma 'suspicious'. In 2015, the Thyroid Imaging Reporting and Data System (TIRADS), was proposed by the American College of Radiology (ACR) to determine when to perform FNA or recommend active surveillance of suspicious nodules. Given the high proportion of cytologically indeterminate, Afirma 'suspicious' benign thyroid nodules, our study sought to determine the utility of TIRADS in these subset of patients by examining how it altered the surgical intervention in such patients.

Methods: We retrospectively queried cytopathology archives for thyroid FNA specimens obtained between February 2012 and September 2016 with 1) an indeterminate diagnosis, 2) ultrasound (US) imaging, and 3) Afirma GEC suspicious result. Patients who either did not undergo surgery or did not have ultrasound done at our institution were excluded. We collected and recorded the following: patient demographics, history of Hashimoto's disease or previous neck surgery, cytology and pathology reports, clinic and operative notes, US reports, and Afirma results.

Results: Our cohort consisted of 133 nodules among 131 patients who underwent thyroid surgery for cytologically indeterminate, Afirma suspicious nodules. The mean thyroid nodule size was 2.3 cm, ranging from 0.5 cm to 8.0 cm. 9 (6.8%) nodules were assigned TR2 'not suspicious'; 25 (18.8%), TR3 'mildly suspicious'; 81 (60.9%), TR4 'moderately suspicious'; and 18 (13.5%), TR5 'highly suspicious'. No thyroid nodules were assigned a TR1 or 'benign' classification. The majority of nodules (85, 63.9%) had benign pathology. If one were to apply TIRADS criteria only, 46 nodules (34.6%) would not have had further evaluation, of which, 14 (30.4%) were malignant. However, 32 patients with benign nodules would have been spared unnecessary surgery. Among our cohort, the sensitivity, specificity, PPV, and negative predictive value of TIRADS was 71.4%, 38.1%, 40.2%, and 69.6%, respectively.

Conclusions: Among cytologically indeterminate and Afirma suspicious nodules, TIRADS was not a reliable indicator of the need for further evaluation. Additional prospective studies are needed to validate these findings.

ABSTRACTS

♦ 17. TREATMENT STRATEGY OF END-STAGE RENAL DISEASE RELATED HYPERPARATHYROIDISM BEFORE, DURING AND AFTER THE ERA OF CALCIMIMETICS

Willemijn Y. van der Plas[1], Anton F. Engelsman[2], Marille Umakanthan[3], Amanda Mather[3], Stan B. Sidhu[2], Leigh H. Delbridge[2], Mark S. Sywak[2], Schelto Kruijff[1]
[1]Department of Surgery, University Medical Center Groningen, [2]Department of Endocrine Surgery, Royal North Shore Hospital, [3]Department of Nephrology, Royal North Shore Hospital

Background: Hyperparathyroidism (HPT) is a common consequence in patients with end-stage renal disease (ESRD). Since the introduction of calcimimetics in 2004, the treatment strategy of ESRD-related HPT has shifted from a surgical towards a more pharmacological approach. Calcimimetics are no longer on the Australian Pharmaceutical Benefits Scheme (PBS) since 2015. We aim to investigate the impact of the successive changes of availability of calcimimetics and treatment strategy on the Australian ESRD-related HPT population.

Methods: A retrospective review of prospectively collected data was performed. Patients were divided into three groups according to the date of their parathyroidectomy (PTx): Group A, before the introduction of calcimimetics (1998 – 2006); Group B, during the era of calcimimetics (2007 – 2014); and Group C (2015 – 2017), after PBS removal of calcimimetics. Primary outcome was time from start dialysis to PTx. Regression analysis was used to examine trends in number of performed parathyroidectomies over time, shown as 95% confidence interval (CI) with R-squared and p-value. Secondary outcomes were baseline characteristics and biochemical measurements.

Results: In total, 195 parathyroidectomies were performed between 1998 – 2017. Baseline characteristics including age, sex, BMI, ASA classification and type of dialysis did not differ significantly between the groups. Patients of Group A were referred for surgery after a median of 69 (33–123) months, of Group B after 67 (31–110) months and of Group C after 44 (23–102) months, p=0.55). PTx rates increased over the full study period (CI 0.09–1.13, R^2=0.27, p=0.02). A decreasing trend in PTx rates was seen during the era of cinacalcet compared to before 2007 (p=0.08). Also, median preoperative PTH levels increased significantly over the years (842 [418–1553] vs. 1040 [564–1810] vs. 1350 [1037–1923] pg/mL, for Groups A, B and C respectively [p<0.01]). Preoperative serum corrected calcium, phosphate and alkaline phosphatase levels were not significantly different between the groups and ameliorated all significantly postoperatively.

Conclusions: Over the past 20 years, PTx rates seem to have changed according to the availability of cinacalcet. Despite the use of calcimimetics, this treatment strategy change has been associated with increased preoperative PTH levels, likely reflecting delayed surgery and increased disease severity.

ABSTRACTS

♦ 18. PARATHYROIDECTOMY VERSUS CINACALCET IN THE MANAGEMENT OF TERTIARY HYPERPARATHYROIDISM: SURGERY IMPROVES TRANSPLANT ALLOGRAFT SURVIVAL

Brendan M Finnerty[1], Tyler W Chan[1], Gregory Jones[1], Tarek Khader[1], Maureen Moore[1], Toni Beninato[1], Anthony C Watkins[1], Rasa Zarnegar[1], Thomas J Fahey III[1]
[1]Surgery, New York Presbyterian Hospital - Weill Cornell

Background: Expectant management with long-term cinacalcet therapy remains a common treatment modality for tertiary hyperparathyroidism despite studies suggesting improved normalization of calcium and parathyroid hormone (PTH) levels after sub-total parathyroidectomy. Transplant allograft function in patients who are maintained on cinacalcet therapy versus undergoing parathyroidectomy remains unclear.

Methods: Patients with tertiary hyperparathyroidism were retrospectively reviewed at a single institution from 2002-2017. Demographics, co-morbidities, biochemical data, transplantation variables, transplant allograft failure (estimated glomerular filtration rate < 30), and resolution of hyperparathyroidism were analyzed in patients managed by parathyroidectomy versus observation with cinacalcet therapy. Multivariable analyses are reported in odds ratios (OR) with 95% confidence intervals (95%-CI).

Results: 133 patients were included (33 parathyroidectomy and 100 cinacalcet) with a median transplant allograft survival of 5.9 years [interquartile range (IQR) 4.0-9.0]. Parathyroidectomy was performed at a median of 24 months [IQR 11-61] post-transplantation. Median duration of cinacalcet therapy in the cinacalcet cohort was 51 months [IQR 26-81]. There were no differences in age, sex, BMI, co-morbidities, pre-transplant dialysis duration, cadaveric donor utilization, or rates of delayed allograft function between cohorts; however, more patients were on cinacalcet pre-transplant in the cinacalcet cohort (42% vs. 12%, p<0.001). Normalization of PTH occurred in more patients undergoing parathyroidectomy compared to cinacalcet therapy (67% vs. 15%, p<0.001). In the parathyroidectomy cohort, transplant allograft failure rates were lower (9% vs. 33%, p=0.007), with no difference in years of post-transplant follow-up (7.0 [IQR 4.2-9.3] vs 7.0 [IQR 5.0-10.2], p=0.719). On multivariable analysis, parathyroidectomy was inversely associated with transplant allograft failure (OR 0.28, 95%-CI 0.09-0.86, p=0.027); there were no other associated factors. Patients in the cinacalcet cohort who suffered eventual allograft failure notably had a higher median PTH (pg/mL) at one-year post-transplant (median 348 [IQR 204-493] vs. 195 [IQR 147-297], p=0.025).

Conclusions: Patients who undergo parathyroidectomy for tertiary hyperparathyroidism have lower rates of transplant allograft failure as compared to those maintained on cinacalcet. Allograft failure in patients who are maintained on cinacalcet therapy is associated with higher PTH elevations at one-year post-transplant. Patients with inadequate PTH control on cinacalcet at one-year post-transplant should be considered for parathyroidectomy to prevent potential allograft failure.

ABSTRACTS

♦ 19. PREOPERATIVE CALCITRIOL REDUCES POSTOPERATIVE INTRAVENOUS CALCIUM REQUIREMENTS AND LENGTH OF STAY IN PARATHYROIDECTOMY FOR RENAL-ORIGIN HYPERPARATHYROIDISM

Salman K Alsafran[1], Scott K Sherman[1], Fadi S Dahdaleh[1], Brian Ruhle[1], Edwin Kaplan[1], Peter Angelos[1], Raymon H Grogan[1]
[1]Endocrine Surgery Research Program, University of Chicago

Background: Patients undergoing parathyroidectomy for renal-origin hyperparathyroidism (PTXRO) frequently require postoperative intravenous calcium treatment (Postop-IVCa). Calcitriol is commonly given postoperatively to treat hypocalcemia in these patients, but its effect is typically delayed by 48-72 hours. To avoid this delay, our group began in 2011 to prescribe loading doses of preoperative calcitriol (PC) in PTXRO patients. This study sought to retrospectively test the hypothesis that PC would reduce the need for Postop-IVCa.

Methods: Patients at a single institution undergoing PTXRO in 2004-2016 were reviewed and patients receiving PC were compared to those who did not receive PC (NPC). The PC loading dose was 0.5mcg twice daily for 5 days before surgery. All patients underwent subtotal-parathyroidectomy and received postoperative oral calcitriol and calcium carbonate. Postop-IVCa was given for symptoms of hypocalcemia, calcium <7.0mg/dL, or surgeon preference. The primary endpoint was the need for Postop-IVCa. Fisher-exact test compared proportions. Wilcoxon-test compared continuous data. Multivariable logistic regression adjusted for confounders.

Results: Included were 81 PTXRO patients (40 PC, 41 NPC), of which 77 (95%) were treated for secondary and 4 (5%) for tertiary hyperparathyroidism. PC use increased over time (0% 2004-2010, 69% 2011-2016). There were no significant differences between the PC and NPC groups in median age (45 vs. 47 years), preoperative serum calcium (9.4 vs. 9.3mg/dL), vitamin-D (21.0 vs. 16.0ng/mL), or PTH levels (1655 vs. 1914 pg/mL, $p>0.05$ for all). A significantly smaller proportion of PC patients required Postop-IVCa relative to the NPC group (34% vs. 90%, $p<0.001$). Median hospital length of stay (LOS) was significantly shorter for the PC vs NPC group (2.0 vs. 4.0 days, $p<0.001$). Factors associated with increased Postop-IVCa requirement on univariate analysis included NPC, low preoperative calcium, and high preoperative PTH. After multivariable adjustment for these factors, PC remained independently associated with reduced Postop-IVCa (OR 0.02, 95% CI 0.002-0.10, $p<0.001$).

Conclusions: A short preoperative course of oral calcitriol reduced the absolute risk of Postop-IVCa by 56% and hospital LOS by 50% in PTXRO patients. Due to these results, we believe PC should be standard of care for PTXRO. Further randomized studies are warranted to corroborate these findings.

ABSTRACTS

♦ 20. VALIDATION OF A NOVEL PATIENT-REPORTED OUTCOMES MEASURE FOR PARATHYROID AND THYROID DISEASE (PROMPT)

Talia Burneikis[1], Jennifer Colvin[1], Judy Jin[1], Eren Berber[1], Vikram Krishnamurthy[1], Joyce Shin[1], Allan Siperstein[1]
[1]The Cleveland Clinic

Background: Patient-Reported Outcomes Measures (PROMs) are increasingly used to assess disease severity and response to surgery. These clinical tools are being used to assess the value of care provided from the patient's perspective and are increasingly tied to reimbursement. Rigorous methods now exist to construct and assess the validity of PROMs. Although tools to assess hyperthyroidism exist, PROMs using modern methodology are lacking to assess symptoms of thyroid enlargement and hyperparathyroidism, two conditions where the presence of preoperative symptoms and response to surgery is often questioned.

Methods: A questionnaire reviewing common symptoms was developed from literature review and expert opinion. Pre- and post-operative patients were assessed. Internal validity and initial responsiveness to surgery were evaluated.

Results: PROMPT consists of 30 items to avoid survey fatigue. Ten questions assess the construct of compressive symptoms due to thyroid enlargement. Twenty questions assess the construct of hyperparathyroidism, including the domains of fatigue, sleep, mood, mental clarity, and body aches. The measure was field-tested over 8 months, and 247 surveys were evaluated. When separated by constructs (compressive symptoms and hyperparathyroid symptoms), each showed high internal consistency (Crohnbach's alpha 0.86, and 0.95 respectively). Questions were then scored by construct (scale 0-100), with higher scores corresponding to increased symptom severity. Preoperatively, goiter patients demonstrated significantly higher compressive symptom scores when compared to other thyroid patients and hyperparathyroid patients (mean 50.0 vs. 40.6 vs. 30.0; p=0.0375 goiter vs. other thyroid, and p=0.0002 goiter vs. hyperparathyroid). Two-weeks after surgery, there was a statistically significant improvement in scores amongst hyperparathyroid patients (mean decrease of 8.4 points, p=0.0064, n=16 in matched pairs analysis).

Conclusions: To the best of our knowledge, PROMPT represents the first measure for symptomatic goiters, and the first validated measure for hyperparathyroidism. We have demonstrated internal validity using modern psychometric evaluation. Analysis suggests that, preoperatively, PROMPT differentiates symptomatic goiter patients from other thyroid and hyperparathyroid patients. Additionally PROMPT demonstrates symptom improvement after parathyroid surgery.

ABSTRACTS

♦ 21. UNRECOGNIZED PRIMARY ALDOSTERONISM IN HYPERTENSIVE PATIENTS WITH HYPOKALEMIA OR SLEEP APNEA

Brian C Ruhle[1], Salman Alsafran[1], Peter Angelos[1], Edwin Kaplan[1], Raymon Grogan[1]
[1]*University of Chicago Medicine*

Background: Primary aldosteronism (PA) is the most common form of secondary hypertension, and is estimated to account for at least 10% of complicated hypertension. Delays or failures to diagnosis PA cause significant morbidity. Updated clinical practice guidelines recommend case detection of PA in all patients with hypertension and spontaneous or diuretic induced hypokalemia, and those with hypertension and obstructive sleep apnea (OSA). We hypothesized that many patients with indications for screening for PA are unrecognized.

Methods: Electronic health record (EHR) data on patients from a tertiary referral center between 2001 to 2017 were reviewed. Inclusion criteria for this study cohort were high blood pressure based on ICD and CPT codes and hypokalemia from either ICD codes, laboratory values (potassium < 3.5) or need for potassium supplementation or ICD codes for OSA. Exclusion criteria were age less than 18 years. Patients were checked for documentation of serum aldosterone and/or renin activity, diagnosis of PA, and whether they underwent adrenalectomy.

Results: A total of 125,511 patients had a diagnosis of hypertension with 43,467 patients also having either hypokalemia or OSA. In this patient cohort, 26,571 (61.1%) were female and 26,049 (59.9%) were Black/African Americans. Only 496 (1.1%) patients had an aldosterone and/or renin level measured. Of patients that were screened, 57 (11.5%) were diagnosed with PA and 21 (4.2%) underwent unilateral adrenalectomy. Neither gender ($p = 0.18$) nor race ($p = 0.72$) were significantly different between patients who were and were not screened. In a multivariable logistic regression analysis, significant predictors for screening were younger age at first encounter ($p < 0.005$), and increased clinical visits ($p < 0.005$). The type of encounter (outpatient, inpatient, or ED) was not predictive of screening.

Conclusions: We found that 99% of patients who should have been screened for PA by national guidelines never underwent screening. Further, of those that were screened and diagnosed with PA, most never underwent an operation which may be contributed by patients not being referred to a surgeon. Improved education and incorporation of EHR alerts prompting further evaluation of select patients with hypertension could raise physician awareness about PA and improve patient outcomes.

ABSTRACTS

♦ 22. EXPRESSION OF PROGRAMMED DEATH LIGAND-1 AND 2 IN ADRENOCORTICAL CANCER TISSUES: AN EXPLORATORY STUDY

John F Tierney[1], Alyx Vogyl[1], Irene M Min[2], Jennifer Poirier[1], Brendan Finnerty[2], Rasa Zarnegar[2], Theresa Scognamiglio[3], Paolo Gattuso[4], Ritu Ghai[4], Thomas J Fahey[2], Xavier M Keutgen[1]
[1]Surgery, Rush University Medical Center, [2]Surgery, Weill Cornell Medical College, [3]Pathology, Weill Cornell Medical College, [4]Pathology, Rush University Medical Center

Background: The interaction between programmed death-1 (PD-1), expressed on T-cells, and its two ligands, PD-L1 and PD-L2, expressed on tumor cells, facilitates escape from immune detection. Inhibition of PD-L1 and PD-L2 has been successfully used for treatment of multiple advanced cancers. Adrenocortical carcinomas (ACC) have a poor prognosis and ineffective systemic treatment options. In this study, we investigated PD-L1 and PD-L2 expression in ACC in order to determine the potential usefulness of checkpoint inhibitors in these tumors.

Methods: 59 tissue samples from patients with ACC, indeterminate adrenocortical tumors (ACT), adrenal adenomas (AA), and normal adrenal tissue (NA) were identified from two institutional biorepositories. Immunohistochemistry (IHC) was performed on FFPE slides for PD-L1, PD-L2, and CD8 using commercially available monoclonal antibodies. All samples were reviewed blindly by a pathologist and scored for cytoplasmic and/or membranous staining according to the percent of positive cells and intensity. An IRS score was calculated and considered positive if ≥ 6 (≥ 50% of positive cells and ≥ 2+ staining intensity). Tumor characteristics (size, distant metastases, functionality) were obtained and correlated to PD-L expression. Descriptive statistics and Mann-Whitney tests were performed.

Results: 14 ACC samples, 3 ACTs, and 3 AAs were analyzed initially. No samples stained positive for PD-L1, but 2 ACC (14%) and 1 ACT (33%) sample stained positive for PD-L2. An independent validation cohort comprising 22 ACC, 8 AA, and 9 NA samples confirmed strong PD-L2 staining in 6 ACC cases (27%) versus strong PD-L1 staining in only one ACC sample (4%) (p=0.04). 23 of 34 ACC (67%) were either focally or diffusely positive for tumor infiltrating lymphocytes by CD8 staining. There was no significant correlation between PDL-2 and CD8 expression (p=0.36). There was also no significant correlation between PD-L2 or CD8 expression and tumor characteristics (p=0.3).

Conclusions: Programmed Death Ligand-2 (PD-L2), but not PD-L1, is highly expressed in up to a quarter of ACC samples and the utility of checkpoint inhibitors such as Pembrolizumab could therefore be evaluated as a novel therapeutic target for those patients. Further studies, including a larger sample size, are needed to analyze PD-L2 expression and survival in ACC.

ABSTRACTS

♦ 23. LONGITUDINAL PATTERNS OF RECURRENCE IN PATIENTS WITH ADRENOCORTICAL CARCINOMA

Jason Glenn[1], Tobias Else[2], David Hughes[1], Mark Cohen[1], Paul Gauger[1], Gary Hammer[2], Barbra Miller[1]
[1]Endocrine Surgery, University of Michigan, [2]Endocrinology, University of Michigan

Background: Disease recurrence after curative surgical resection of adrenocortical carcinoma (ACC) is common. Patterns and prognosticimplications of recurrent disease are poorly understood. We hypothesize that patterns of diseaserecurrence will prognosticate disease course and survival.

Methods: A retrospective review was conducted of 577 patientswith ACC evaluated at a single tertiary care center; clinicopathological andfollow-up data were collected longitudinally. Univariate and multivariate regression models determined associationsfor primary outcome measures.

Results: Review of longitudinal data from 175 patients withStage I-III ACC, who underwent initial resection with curative intent,identified 133 (76%) patients with disease recurrence [66% female, median age47 (18-80)]. Median disease-free interval was 11 months (0.1-210). Firstrecurrences limited to a single site (80%) were most commonly tumor bed (24%), pulmonary(18%), or peritoneal (16%). Fifty-nine patients underwent either one (38), two(14), or ≥ three (7) reoperations: 45/59 recurred after first reoperation and21/45 underwent second reoperation; 17/21 again recurred and 7/17 underwent additionalreoperation(s). Overall, 34% of recurrences after reoperation involved the samesite/organ as first recurrence. Median progression-free survival was 11 months (0.2-97)after first reoperation and 14 months (0.8-90) after second reoperation. Patientswith peritoneal or other "unspecified" distant recurrences had the shortest progression-freesurvival after first reoperation. Median length of follow-up was 34 months(3.3-295). Median overall survival after first recurrence was 17 months(1.3-153).

Higher stage at diagnosis was predictive of pulmonary($p<0.01$) recurrence; high tumor grade was predictive of pulmonary ($p<0.01$)and peritoneal ($p=0.02$) recurrence; lymphovascular invasion was predictive ofintra-hepatic ($p=0.05$) recurrence. Intra-hepatic recurrence was associated withlonger disease-free interval ($p=0.03$). Pulmonary ($p<0.01$) and multi-site($p=0.02$) recurrences were associated with further recurrence after reoperation.Initial tumor size ≤ 8 cm ($p=0.03$) and curative intent of reoperation ($p=0.05$)were predictive of longer progression-free survival. Increased risk of death wasassociated with high tumor grade ($p<0.01$), disease-free interval <12months ($p<0.01$), multi-site recurrence ($p=0.03$), and no reoperation($p<0.01$). Lymphovascular invasion predicted shortened overall survival($p<0.01$).

Conclusions: Knowledge of patterns of ACC recurrence, combined with other common prognostic indicators, may lead to improved prediction of disease course and refine selection of treatment, particularly reoperation.

ABSTRACTS

24. A PROPENSITY-MATCHED ANALYSIS OF CLINICAL OUTCOMES BETWEEN OPEN THYROID LOBECTOMY AND HIGH INTENSITY FOCUSED ULTRASOUND (HIFU) ABLATION IN THE TREATMENT OF BENIGN THYROID NODULES

Brian H Lang[1], Carlos Wong[2], Yu Cho Woo[3], Keith Chiu[4]
[1]Surgery, University of Hong Kong, [2]Community Medicine, University of Hong Kong, [3]Medicine, University of Hong Kong, [4]Radiology, University of Hong Kong

Background: Benign thyroid nodules are common and although most remain unchanged over time, some do cause local symptoms necessitating surgical resection. High intensity focused ultrasound (HIFU) ablation is a promising non-surgical technique that is effective in not only causing significant nodule shrinkage but also alleviating nodule-related symptoms. However, its treatment-related clinical outcomes have rarely been directly compared to those in the open thyroid lobectomy.

Methods: From 2015 to 2017, any patients with a cytologically-confirmed benign thyroid nodule within one unilateral lobe that was either causing local symptoms or growing in size were offered surgical resection (i.e. an open thyroid lobectomy). Those who were not willing to undergo surgical resection were offered single-session HIFU ablation as an alternative. Clinical outcomes including treatment morbidities, hospital stay, days-to-resume normal work duties, direct procedural cost and voice quality by acoustic voice analysis were compared between the two groups. Propensity score-matching (with age and sex as co-variates) was performed to minimize potential biases.

Results: During this period, 97 consecutive patients underwent HIFU (HIFU group) and 88 patients underwent open thyroid lobectomy (Surgery group). After propensity score matching (1:1 ratio), outcomes of 77 patients in the HIFU group were compared to 77 patients in the Surgery group. In the HIFU group, the 6-month mean nodule shrinkage was 66.72 ± 34.27 % and the overall symptom score significantly improved from baseline (p<0.001). The overall treatment-related morbidity rate was not significantly different between the HIFU and Surgery groups (6.5% vs. 6.5%, p=1.000). However, the hospital stay and the number of days-to-resume normal work duties were significantly shorter in the HIFU group (0.0 day vs. 1.1 days, p<0.001 and 1.0 day vs. 6.6 days, p<0.001, respectively). Also the procedural cost was significantly less in the HIFU group (USD 1928.02 vs. USD 5141.39, p<0.001) and despite the similar voice quality on acoustic voice analysis at baseline, the Surgery group suffered significantly poorer pitch level at 1-week after treatment than the HIFU group (187.57 ± 47.29 Hz vs. 208.71 ± 49.70 Hz, p=0.011).

Conclusions: HIFU ablation treatment is an effective alternative with several distinct advantages over the standard open lobectomy in symptomatic benign thyroid nodules.

ABSTRACTS

25. STAGE MIGRATION WITH THE NEW STAGING SYSTEM [8TH EDITION] FOR DIFFERENTIATED THYROID CANCER

Ashok R. Shaha[1], Jocelyn C Migliacci[1], Iain J Nixon[1], Laura Y Wang [1], Richard J Wong[1], Luc G.T. Morris[1], Snehal G Patel[1], Jatin P Shah[1], R. Michael Tuttle[1], Ian Ganly[1]
[1]Memorial Sloan Kettering Cancer Center

Background: The stage grouping in thyroid carcinoma is important for decision making. However, in thyroid cancer, many patients with stage III and IV have overall survival of 90%. In other tumors, stage I and II are considered early, while stage III and IV are considered advanced cancer. With extensive review of the data from around the world, the stage grouping is revised in the 8th edition, and the age cut-off is now used as 55. This will have a major impact on the stage migration, and it is anticipated that many patients will be down staged.

Methods: We reviewed our large database to analyze the impact of the new staging system. Our database included 3,650 patients with detailed information of their prognostic factors. There were 994 males (27%) and 2,656 females (73%); the median age was 46. The age range extended from 4 to 94 years. The interquartile range was from 26 to 58 years. We staged these patients based on both the 7th and 8th edition, where the major changes were cut off age of 55 years, new definition of T3 and T4, and nodal staging.

Results: Of 3,650 patients, 1,057 (29%) were downstaged. 104 patients (10%) were downstaged from stage IV to I, 109 (10%) down staged from stage IV to stage II, and 68 (6%) to stage III. 218 patients (21%) were downstaged from stage III to I, and 347 (37%) downstaged from stage III to stage II. 211 (20%) were downstaged from stage II to I. Clearly, this downstaging of 29% patients will have a direct impact on the discussion about their long-term survival and more importantly on adjuvant therapy. The overall, disease-specific and relapse-free survival was analyzed by both staging systems and showed a more appropriate correlation and better stratification with 8th staging system.

Conclusions: With the new staging system, 29% patients were downstaged, while interestingly amongst the downstaged patients 26% were downstaged from stage IV to I, II and III. The new staging system adheres more appropriately to the biology of thyroid cancer and will have a rational impact on the management of thyroid cancer.

ABSTRACTS

26. THE OPTIMAL LEVOTHYROXINE DOSING SCHEME AFTER THYROIDECTOMY: A COMPREHENSIVE COMPARISON AND EVALUATION

Nick Zaborek[1], Andy Cheng[1], Joseph Imbus[1], Kristin L. Long[1], Susan C. Pitt[1], Rebecca S. Sippel[1], David F. Schneider[1]
[1]Department of Surgery, University of Wisconsin School of Medicine and Public Health

Background: Patients often struggle to attain euthyroidism after thyroidectomy, and multiple dosing schemes have been proposed to supplant the standard weight-based approach for initial levothyroxine (LT4) dosing. The objectives of this study were to review the literature for existing LT4 dosing schemes and compare estimation accuracies with novel schemes developed with machine learning techniques.

Methods: This study retrospectively analyzed 598 patients from a single institution who attained euthyroidism with LT4 therapy between 2007 and 2017 after undergoing total or completion thyroidectomy for benign disease. We evaluated several machine learning algorithms for estimating euthyroid dose. Three reviewers independently reviewed articles from PubMed, Cochrane, Scopus, and Web of Science in a scoping review to identify existing LT4 replacement dosing schemes. Using repeated 10-fold cross-validation, we evaluated the accuracy of each dosing scheme by calculating the proportion of patients whose predicted dose was within 12.5 mcg/day of their actual euthyroid dose.

Results: Of the 264 articles reviewed, 9 articles proposed LT4 dosing schemes. Ultimately 7 articles proposed schemes that could be implemented retrospectively. After testing various machine learning algorithms to predict LT4 dose, a novel Poisson regression model proved most accurate, correctly predicting 64.8% of doses. Incorporating 7 clinical variables (BMI, weight, age, sex, preoperative TSH, iron supplement use, and multivitamin/mineral use), Poisson regression was significantly more accurate than the best existing dosing scheme in the literature (a BMI adjusted weight-based scheme) that correctly predicted 60.9% of doses (p=0.031). Weight-based LT4 dosing (1.6 mcg/kg/day) correctly predicted 51.3% of doses, and the least effective dosing scheme proposed in the literature (an age adjusted weight-based scheme) correctly predicted 40.1% of doses. Compared to existing schemes, Poisson regression had the lowest rate of dosing errors greater than 25 mcg/day at 19.1%. Examining extremes of patient weight, Poisson regression yielded the highest predictive accuracy within each BMI tertile (lower: 73.3%, middle: 63.6%, upper: 59.7%).

Conclusions: Using readily available variables, a novel Poisson regression dosing scheme outperforms other machine learning algorithms and all existing dosing schemes in calculating LT4 dose. Implementing Poisson regression into electronic medical systems to automatically calculate LT4 dose could potentially reduce morbidity associated with LT4 replacement after thyroidectomy.

ABSTRACTS

27. UNILATERAL BENIGN MULTINODULAR GOITER VS SOLITARY NODULE: CONTRALATERAL RECURRENCE RATES AFTER LOBECTOMY

Beatriz de Rienzo-Madero[1], John Sabra[1], Elise Gand[1], Gianluca Donatini[1], Jean-Louis Kraimps[1]
[1]Endocrine Surgery, CHU Poitiers

Background: There are few long-term studies defining the appropriate extent of thyroid surgery and rate of recurrent nodular disease for unilateral multinodular goiter (MNG). The aim of the study was to evaluate the rate and time to recurrence of patients with MNG who underwent a lobectomy, as compared to that of patients with a benign solitary nodule (SN).

Methods: We conducted a retrospective study of a prospectively maintained database of all consecutive patients who underwent lobectomy for MNG or SN from 1991 to 2017 at our institution. We analyzed age, sex, final histopathology, recurrence rates and time to recurrence. Recurrence was defined as a clinically significant recurrence requiring surgical intervention: nodule greater than 3 cm, multiple nodules, nodule growth on consecutive ultrasounds, suspicious nodule by ultrasound or FNA, compressive symptoms, and/or patient preference. The primary outcome was the number of patients who underwent completion thyroidectomy. The secondary outcome was the time to clinically significant progression.

Results: A total of 2,675 lobectomies were included: 852 (31.85%) for MNG, and 1,823 (68.15%) for SN. 394 patients (15%) underwent a reoperation: 261 (30.6%) patients with a previous MNG, and 133 (7.29%) patients with a previous SN ($p<0.0001$). Of the patients with MNG, 80% (n=208) recurred as a MNG. Also, of the patients with a SN, 67.66% (n=90) recurred as a MNG; 3.5% of the recurrences were carcinomas. The mean time to recurrence was 178 months (14.8 years), with no difference between both groups, $p=0.5765$ (mean (IQR): 170 (146) vs 182 (146)). However, patients with MNG had a shorter time to recurrence ($p<0.0001$). Patients with no recurrence were younger than patients with recurrence 47 ± 15 vs 54 ± 13, $p<0.0001$, and male patients were less likely to recur, $p<0.0001$.

Conclusions: Although recurrence rates for MNG compared to SN are higher (30.6% vs 7.29%), lobectomy for unilateral MNG is reasonable and can be regarded as the procedure of choice given the long time to clinically significant recurrence requiring completion thyroidectomy. This approach avoids unnecessarily exposing patients to the complications of total thyroidectomy. However, patients and surgeons should be aware of the need for long-term surveillance.

ABSTRACTS

28. NATURAL HISTORY OF PAPILLARY THYROID MICROCARCINOMA: KINETIC ANALYSES ON THE TUMOR VOLUME DURING ACTIVE SURVEILLANCE AND BEFORE PRESENTATION

Akira Miyauchi[1], Takumi Kudo[2], Yasuhiro Ito[1], Hitomi Oda[1], Masatoshi Yamamoto[1], Hisanori Sasai[3], Takuya Higashiyama[1], Mitsuhiro Fukushima[1], Hiroo Masuoka[1], Minoru Kihara[1], Akihiro Miya[1]

[1]Department of Surgery, Kuma Hospital, [2]Department of Internal Medicine, Kuma Hospital, [3]Department of Head and Neck Surgery, Kuma Hospital

Background: We showed that only 8% of low-risk papillary microcarcinomas (PMCs) enlarged at 10-year active surveillance (AS). Some of PMCs did show tumor shrinkage, indicating change in growth pattern over time. We can analyze the growth during AS. However, the growth before presentation is unknown. Here, we estimated the growth with a hypothesis described in Method. We compared these two growth values.

Methods: From January 2000 to December 2004, 169 patients with low-risk PMC aged from 24 to 79 years were enrolled in AS. Tumor size at presentation ranged from 3 mm to 10 mm (median: 7 mm). Patients were followed for a median of 10.1 years with periodic ultrasound examinations (median: 12 exams). First, we calculated tumor-doubling time (DT) based on the serial tumor size measurements. Then, we calculated what we term 'hypothetical maximum tumor-doubling time' (HM-DT): an estimate of DT before presentation using the patient's age and size of tumor at presentation, presuming that a single 10 μm-dia. cancer cell was present at birth and grew at a constant rate. To solve the discontinuity problem among positive and negative DT values, we transformed the DTs to their inverse so that large, small, and negative values would indicate rapid growth, slow growth, and shrinkage, respectively.

Results: The inverse DTs (1/year) ranged from -12.8 to 0.95 (median: 0.02), and were >0.5, 0.1~0.5, -0.1~0.1, and <-0.1 in 3, 36, 104, and 26 PMCs. Patients older than 60 years had stable or shrinking PMCs significantly more than younger patients did. The inverse HM-DTs ranged from 0.35 to 1.14 (median: 0.50). These values were larger than the inverse DTs in all patients except three.

Conclusions: Using this novel calculation of inverse DT and inverse HM-DT, only 3 (2%) of cancers in this cohort of 169 patients showed rapid growth, 36 (21%) showed very slow growth, 104 (62%) showed almost stable disease, and 26 (15%) showed shrinkage on AS. The comparison of DT to HM-DT strongly suggests that the rapid growth period occurred some time before enrollment in AS, and that slowing in growth rate and shrinkage during AS was very common.

ABSTRACTS

29. PRIMARY HYPERALDOSTERONISM WITH NON-LOCALIZING IMAGING

Heather Wachtel[1], Sonia Bhandari[1], Robert E Roses[1], Debbie L Cohen[2], Scott O Trerotola[3], Douglas L Fraker[1]
[1]Dept. of Surgery, Hospital of the University of Pennsylvania, [2]Dept. of Medicine, Div. of Renal, Electrolytes and Hypertension, Hospital of the University of Pennsylvania, [3]Dept. of Radiology, Div. of Vascular and Interventional Radiology, Hospital of the University of Pennsylvania

Background: Primary aldosteronism (PA) is the most common cause of secondary hypertension. After biochemical diagnosis, patients with adrenal masses on imaging are referred for surgery and patients with non-localizing imaging are presumed to have hyperplasia and managed medically.

Methods: We performed a retrospective analysis of PA patients undergoing adrenalectomy (1997-2017), who were routinely referred for adrenal vein sampling (AVS). Clinical data were analyzed. Standard blood pressure (BP) criteria were used. Patients were classified by imaging as localized (unilateral adrenal mass ≥1.0 cm with a normal contralateral adrenal gland), or non-localized (no mass, or bilateral masses). Cure was defined as normotension off anti-hypertensive medications (AHM). Improvement was defined as postoperative decrease in BP, AHM, or both.

Results: Of 482 PA patients who underwent AVS, 335 lateralized. Of 259 patients who underwent adrenalectomy, 81.5% (n=211) were localized by imaging. Mean age (51.1 versus 50.6 years; p=0.746) and proportion ≤40 years old (localized: 18.0% versus non-localized: 18.8%, p=1.000) were similar. Non-localized patients had higher BMI (34.2 versus 31.3 kg/m2, p=0.010). Although there was no difference between groups in hypokalemia (localized: 75.1% versus non-localized: 77.1%, p=0.775), median aldosterone-renin ratio (localized: 149.5 versus non-localized: 143.0 (ng/dl)/(ng/ml/hr), p=0.651), or median duration of hypertension (10 years for both groups, p=0.127), localized patients were taking significantly fewer AHM (3 versus 4, p=0.010). Median tumor size was larger in localized patients (1.5 versus 1.0 cm, p<0.001). Pathology was adenoma (83.0% versus 83.3%), adenoma in a background of hyperplasia (13.7% versus 8.3%), or hyperplasia (2.8% versus 8.3%), in localized versus non-localized patients, respectively (p=0.224). On follow-up, localized patients had lower BP (mean localized: MAP 96.0 versus non-localized: 101.1 mmHg, p=0.018), and required fewer AHM (1.7 versus 2.4, p=0.020). The majority in both groups experienced improvement (localized: 93.4% versus non-localized: 91.4%, p=0.711), with a minority completely cured (localized: 11.4%, non-localized: 12.5%, p=0.805).

Conclusions: Higher BMI and larger numbers of AHM are associated with non-localizing preoperative imaging. PA patients with non-localizing imaging but lateralizing AVS experience clear benefit from adrenalectomy, with equivalent rates of improvement and cure. Regardless of imaging findings, patients should undergo routine AVS, as they may be eligible for surgical management.

ABSTRACTS

30. OVER EXPRESSION OF CELL-CYCLE DEPENDENT PROTEINS ASSOCIATED WITH LOWER SURVIVAL IN ADRENOCORTICAL CARCINOMA PATIENTS

Chitra Subramanian[1], Thomas J Giordano[2], Mark S Cohen[3]
[1]General Surgery, University of Michigan, [2]Pathology, University of Michigan, [3]General Surgery and Pharmaceutical sciences, University of Michigan

Background: Adrenocortical carcinoma (ACC) is a rare and aggressive malignancy with poor survival. Treatment options are limited for locally advanced ACC with a high risk of relapse, even after major surgical resection. Because of difficulties in early detection, 70% of the ACC patients are present with metastases at the time of diagnosis. Even with surgery or adjuvant treatment (mitotane alone or in multidrug combination(Italian protocol)), survival is poor and durable complete response for advanced disease is not observed, making it paramount to identify improved targets and better therapies. We hypothesize that analyzing the TCGA (The Cancer Genome Atlas) gene expression data could identify important novel biomarkers that correlate with worse prognosis in this disease and represent new opportunities for therapeutic targeting.

Methods: Data mining of University of Alabama UALCAN data base that is an interactive web-portal for in-depth analyses of TCGA gene expression data was used to identify novel biomarkers observed in 79 ACC patients (available mRNA seq data). Identified biomarkers were then examined for prognostic correlation using the cBioportal.

Results: Using the TCGA RNAseq data set at UALCAN, ACC pathways associated with poor survival revealed a significant upregulation in cell-cycle pathway associated genes. Proteins in this pathway such as AURKA, AURKB, CDK1, CDK4, CDK6, PLK1, CHEK1, CHEK2, CDC7, NME1 and NME2 are significantly upregulated ($p<0.001$ each). On outcome correlation, a higher expression levels of all the genes except CDK4 (20 patients) was associated with a significantly worse survival compared with medium or low gene expression levels (59 patients). Probability surviving 1 year=0.15 for high expressors vs 0.6 for low-med expressors,$p<0.0001$) which was independent of age or gender. Consistent with our findings in UALCAN, data mining in cBioportal also revealed upregulation of the cell cycle related genes in 72% of patients with a Z score threshold of 1.5. The highest upregulated genes were CDK4(51%), AURK(35%), and CDK1(23%).

Conclusions: Large data-mining from the TCGA and cBioportal identified cell cycle related genes that are significantly correlated with poorer overall survival for ACC. Further evaluation of cell cycle modulators might represent novel effective therapeutic options for ACC patients in the future.

ABSTRACTS

31. GROWING HUMAN PARATHYROIDS IN A MICROPHYSIOLOGICAL SYSTEM: A NOVEL APPROACH TO UNDERSTANDING AND DEVELOPING NEW TREATMENTS FOR HYPERPARATHYROIDISM

Palaniappan Sethu[1], Thomas A Haglund[1], Aaron J Rodgers[1], Herbert Chen[2], John Porterfield[1], Courtney J Balentine[1]
[1]UAB, [2]Surgery, UAB

Background: Our understanding of hyperparathyroidism and our ability to develop new treatments is limited because existing disease models do not allow robust evaluation of how parathyroid hormone simultaneously affects multiple human organ systems. We developed a novel model for studying parathyroid disease by growing *ex vivo* 3-dimensional human parathyroids as part of a Microphysiological System that mimics human physiology. The system involves growing miniature "pseudoorgans" or "pseudoglands" on chips that are connected with a microvascular and circulatory system that replicates human blood flow and hormonal effects to reproduce critical hormonal interactions within the human body. This allows researchers to evaluate the effects of hormones on multiple human organs (heart, bone, kidneys) without relying on mouse or other animal models. The purpose of this study was to validate the parathyroid portion of the Microphysiological System.

Methods: We prospectively collected tissue from 20 patients treated for hyperparathyroidism and isolated parathyroid cells for growth into pseudoglands on non-adherant 48-well plates. Pseudogland architecture was evaluated via histology and immunofluorescence microscopy. We evaluated calcium responsiveness of pseudoglands via measurement of parathyroid hormone production in response to varying calcium levels.

Results: Following 2 weeks in culture, dispersed cells successfully coalesced into pseudoglands ~ 500-700 µm in diameter that mimicked the appearance of normal parathyroid glands. Functionally, they also appeared similar to intact parathyroids in terms of organization and calcium sensing receptor expression. Immunohistochemical staining for calcium sensing receptor revealed 240-450/cell units of mean fluorescence intensity within the pseudoglands. Finally, the pseudoglands showed varying levels of calcium responsiveness, indicated by decreases in calcium sensing receptor levels in response to increasing calcium levels.

Conclusions: We successfully piloted development of a novel Microphysiological System for studying the effects of hyperparathyroidism on human organ systems. We are currently evaluating the effect of parathyroid hormone on adverse remodeling of tissue engineered cardiac, skeletal and bone tissue within the Microphysiological System.

ABSTRACTS

32. THE EFFECT OF TOTAL THYROIDECTOMY ON THE RECOVERY OF BONE MINERAL DENSITY IN SUBJECTS WITH HYPERTHYROIDISM

Poongkodi Karunakaran[1,2], Premkumar Asokumar[3], Kamaleshwaran Koramadai Karuppusamy[4], Rajasekaran Chockalingam[5], Vijay Sadasivam[6], Chandrasekaran Maharajan[7]

[1]Endocrine Surgery, Government Mohan Kumaramangalam Medical College, Salem, [2]Endocrine Surgery, SKS Hospital, [3]Diabetes, Endocrinology and Metabolism, SKS Hospital, [4]Nuclear Medicine and PET/CT, Kovai Medical Centre and Hospital, [5]General Surgery, Government Mohan Kumaramangalam Medical College and Hospital, [6]Radiology, SKS Hospital, [7]Endocrine Surgery, Madras Medical College, Chennai

Background: Thyrotoxicosis is associated with high bone turnover osteopenia, reduced bone mineral density (BMD) and its recovery after treatment. However, the degree of improvement of BMD with different forms of treatment such as antithyroid therapy, radioactive iodine and operative treatment remains controversial. This prospective study evaluated the improvement in BMD in thyrotoxic subjects undergoing total thyroidectomy (TT) versus ^{131}I radioactive iodine (RAI) therapy.

Methods: Operative cases with new onset hyperthyroidism (Group 1; n= 127; age= mean +/- SD; 37.1+/- 9.8 y) were evaluated for BMD by dual energy X-ray absorptiometry in the hip and spine at the time of diagnosis (Point A), on achieving euthyroidism with antithyroid therapy (Point B) and six months after TT (point C). Thyrotoxic subjects undergoing RAI therapy were included in group 2 (n= 30; age= 45.9 +/- 14.54 y).

Results: In group 1, BMD in the hip and spine were 0.842+/- 9.8 g/cm^2 and 0.97+/- 0.155 g/cm^2 respectively at point A. At point B, BMD in the hip (0.853+/- 0.157 g/cm^2) and spine (0.982+/- 0.155g/cm^2) improved significantly and further improved at point C (hip, 0.91+/- 0.158 g/cm^2 and spine, 1.053+/- 0.161 g/cm^2, each P< 0.001). In group 2, pretreatment BMD were 0.741+/- 0.146 g/cm^2 (vs. posttreatment 0.761+/- 0.168 g/cm^2, P= 0.055) in the hip and 0.823+/- 0.159 g/cm^2 (vs. Posttreatment 0.831+/- 0.159 g/cm^2, P= 0.001) in the spine respectively. Posttreatment BMD was significantly higher in group 1 subjects post-TT than group 2 subjects post-RAI therapy in the hip (P< 0.001) and spine (P< 0.001).

Conclusions: BMD improved significantly after all forms of definitive treatment of thyrotoxicosis, especially in the lumbar vertebra, a cancellous bone. The degree of recovery of bone mass was highest in subjects with hyperthyroidism undergoing TT as early as six months post-surgery.

ABSTRACTS

33. TOTAL VS SUBTOTAL PARATHYROIDECTOMY FOR SECONDARY HYPERPARATHYROIDISM

Martin Almquist[1], Elin Isaksson[1], Kerstin Ivarsson[2], Shahriar Akaberi[3], Andreas Muth[4], Karl-Göran Prutz[5], Naomi Clyne[3], Gunnar Sterner[3]
[1]Dept. of Surgery, Skåne University Hospital, [2]Skåne University Hospital, [3]Dept. of Nephrology, Skåne University Hospital, [4]Dept. of Surgery, Sahlgrenska University Hospital, [5]Dept. of Internal Medicine, Section of Nephrology, Helsingborg Hospital

Background: There are two principally different surgical techniques in parathyroidectomy (PTX) for secondary hyperparathyroidism (sHPT): total and subtotal PTX. It remains unclear which procedure yields the best outcomes. We investigated the risk of mortality, cardiovascular disease, hip fracture and re-PTX after total vs subtotal PTX in patients on renal replacement therapy.

Methods: Using the Swedish Renal Registry, a nationwide, populationbased cohort of patients on dialysis or with a renal transplantat, we identified 848 patients who underwent PTX between 1991 and 2013 by crossmatching with the surgical registry for thyroid- and parathyroid surgery and with the national inpatient register, containing discharge diagnoses and procedures. Information on medical treatment was retrieved by crossmatching with the national prescription registry. Blood levels of calcium, parathyroid homone and phosphate, among others, were extracted from the Swedish Renal Registry. Patients were classified as total (n= 388) or subtotal PTX (n= 436), using procedure codes. Patients were followed from time of surgery until death or incident cardiovascular disease or hip fracture, or until end of follow up, which was 31st December 2013.
We compared levels of parathyroid hormone before and after total and subtotal PTX. We calculated the risk of death and incident cardiovascular disease after total vs subtotal PTX using Cox proportional hazards regression, adjusting for age, sex, cause of renal disease, time with a functioning graft before and after PTX, Charlson comorbidity index, year of surgery, prevalent CVD, time on dialysis, renal transplantation at PTX and treatment with calcimimetics before PTX.

Results: Patients who underwent total PTX had higher levels of PTH before surgery, but lower levels after surgery, than patients who underwent subtotal PTX.
There was no difference in mortality or risk of incident hip fracture between groups. The adjusted hazard ratio (95% confidence interval) for CVD was 0.56 (0.37-0.86) after subtotal PTX compared with total PTX. The adjusted hazard ratio (95% confidence interval) of re-PTX was 2.68 (1.35-5.32) after subtotal PTX compared with total PTX.

Conclusions: There was a higher risk of cardiovascular disease in patients after total PTX compared with subtotal PTX, but a lower risk of re-PTX.

ABSTRACTS

34. INNOVATIVE SURGICAL GUIDANCE FOR LABEL-FREE REAL-TIME PARATHYROID IDENTIFICATION.

Giju Thomas[1,2], Melanie A McWade[1,2], John Q Nguyen[1,2], Melinda E Sanders[3], Naira Baregamian[4], Carmen C Solorzano[4], Anita Mahadevan-Jansen[1,2]
[1]Vanderbilt Biophotonics Center, Vanderbilt University, [2]Department of Biomedical Engineering, Vanderbilt University, [3]Department of Pathology, Microbiology and Immunology, Vanderbilt University Medical Center, [4]Division of Surgical Oncology and Endocrine Surgery, Vanderbilt University Medical Center

Background: Difficulty in identifying parathyroid glands during neck surgeries often leads to accidental parathyroid excisions and eventual post-surgical hypocalcemia. This necessitates time-consuming frozen section biopsies for parathyroid identification. A projection Overlay Tissue Imaging System (OTIS) was built to provide spatial information regarding parathyroid glands. The OTIS detects near infra-red auto-fluorescence (NIRAF) from parathyroid glands and back-projects its location using visible green light directly onto the surgical field of view (FOV) to enhance visibility of the gland to the surgeon's eyes with operation room (OR) lights switched off. In parallel, a clinical prototype - PTEye - was designed with a reusable surgical probe and a user-friendly interface to guide parathyroid identification as OR lights remain switched on. We sought to determine accuracy of these systems for intraoperative parathyroid identification

Methods: The OTIS was assessed for parathyroid visualization in 15 patients who underwent thyroidectomy or parathyroidectomy, whereas the PTEye was concurrently evaluated in another set of 20 patients. For each OTIS measurement, the surgeon positioned the 'projector' above the surgical FOV. If the tissue had relatively high NIRAF counts as observed in parathyroid glands, the system back-projects visible green light directly onto the tissue-of-interest. The PTEye system was tested by placing the surgical probe on tissue and measuring the corresponding NIRAF counts. Accuracy of both the OTIS and PTEye was ascertained by correlating the acquired data with either visual confirmation by surgeons for *in situ* parathyroid glands or histopathology report for excised parathyroid glands.

Results: The OTIS was able to successfully visualize parathyroid glands with a 91.7% detection rate. Concurrently, the PTEye achieved 97.4% accuracy in parathyroid identification, despite ambient OR lights. Both the OTIS and PTEye did not require fluorescent dyes and provided real-time results.

Conclusions: The OTIS could enable surgeons to visualize parathyroid glands more clearly within the surgical FOV itself in a label-free manner, without requiring a remote display monitor. The intuitive interface of PTEye and its ability to identify parathyroid despite ambient OR lights, could further aid in rapid parathyroid identification without contrast agents. These two innovative technologies possess high accuracy and can be a valuable adjunct during challenging neck surgeries.

POSTER DISPLAYS

♦ *Denotes Resident/Fellow Research Award Competition Poster*

*NOTE: Author listed in **BOLD** is the presenting author*

POSTER DISPLAYS

01. DEVELOPMENT OF ANTIBODY-DRUG CONJUGATES FOR NEUROENDOCRINE CANCER THERAPY

Jason Whitt[1], Jianfa Ou[2], X. Margaret Liu[2], Tolulope Aweda[3], Suzanne E. Lapi[3], Zviadi Aburjania[1], Herbert Chen[1], Renata Jaskula-Sztul[1]
[1]Surgery, University of Alabama at Birmingham, [2]Biomedical Engineering, University of Alabama at Birmingham, [3]Radiology, University of Alabama at Birmingham

♦ **02. EIGHTH EDITION AJCC STAGING SYSTEM AND FOLLICULAR THYROID CARCINOMA: ONE SIZE DOES NOT FIT ALL**

Huan Yan[1], Chi-Hsiung Wang[2], Yoko Nakazato[1], David J Winchester[1], Richard Prinz[1], Tricia Moo-Young[1]
[1]Surgical Oncology, NorthShore University HealthSystem, [2]NorthShore University Research Institute

♦ **03. MET AS POTENTIAL TARGET FOR MOLECULAR FLUORESCENCE GUIDED SURGERY IN PAPILLARY THYROID CARCINOMA**

Pascal Jonker[1,2], Mark Sywak[1], Dianne Leeuw[2], Gooitzen van Dam[2,3], Anthony Gill[4], Paul van Diest[5], Sjoukje Oosting[6], Rudolf Fehrmann[6], Schelto Kruijff[2]
[1]Endocrine Surgery and Surgical Oncology, Royal North Shore Hospital, [2]Surgical Oncology, University of Groningen, University Medical Center Groningen, [3]Nuclear and Molecular Imaging, Intensive Care, University of Groningen, University Medical Center Groningen, [4]Anatomical Pathology, Royal North Shore Hospital, [5]Pathology, University Medical Center Utrecht, [6]Medical Oncology, University of Groningen, University Medical Center Groningen

♦ **04. EFFECTIVENESS OF INDOCYANINE GREEN FLUORESCENCE IN PREDICTING PARATHYROID VASCULARIZATION AFTER THYROID SURGERY: DO WE NEED TO PERFORM UNNECESSARY AUTOTRANSPLANTATION?**

Alexander Razavi[1], Kareem Ibraheem[1], Antoine Haddad[1], Lachin Saparova[1], Emad Kandil[1]
[1]Tulane University School of Medicine

♦ **05. SCIENTIFIC PRODUCTIVITY AND NATIONAL INSTITUTES OF HEALTH FUNDING OF ENDOCRINE SURGEONS: WHERE DO WE STAND?**

Kareem Ibraheem [1], Mahmoud Farag[1], Antoine B. Haddad[1], Marcus A. Hoof [1], David C. Nguyen[1], Christopher J. Carnabatu [1], Leon J. Wang[1], Mary Killackey[1], Emad Kandil[1]
[1]Tulane University

POSTER DISPLAYS

♦ 06. PRIMARY TUMOR MORBIDITY IN PATIENTS WITH METASTATIC WELL-DIFFERENTIATED MIDGUT NEUROENDOCRINE TUMORS

Janet WY Li[1], David A Kleiman[1], Kelvin Memeh[1], Omobalaji O Akala[2], Nitya Raj[2], Diane Reidy-Lagunes[2], Brian R. Untch[1]
[1]Surgery, Memorial Sloan Kettering Cancer Center, [2]Medicine, Memorial Sloan Kettering Cancer Center

♦ 07. EXIT VAGUS TESTING DURING THYROIDECTOMY OBVIATES THE NEED FOR POSTOPERATIVE LARYNGOSCOPY

Lindsay Kuo[1], Brenessa Lindeman[2], Nancy Cho[1], Atul Gawande[1], Francis Moore, Jr[1], Gerard Doherty[1], Matthew Nehs[1]
[1]Brigham and Women's Hospital, [2]University of Alabama

POSTER DISPLAYS

♦ 08. CLINICAL OUTCOMES AFTER UNILATERAL ADRENALECTOMY FOR PRIMARY ALDOSTERONISM: A LARGE, WORLDWIDE AND RECENTLY OPERATED COHORT OF 435 PATIENTS.

Wessel M.C.M. Vorselaars[1], Sjoerd Nell[1], Emily L. Postma[1,2], Rasa Zarnegar[2], Frederick T. Drake[3,4], Quan-Yang Duh[3], Stephanie D. Talutis[4], David B. McAneny[4], Catherine McManus[5], James A. Lee[5], Scott B. Grant[6], Raymon H. Grogan[6], Minerva A. Romero Arenas[7], Nancy D. Perrier[7], Ben J. Peipert[8], Michael N. Mongelli[8], Tanya Castelino[9], Elliot J. Mitmaker[9], David N. Parente[10], Jesse D. Pasternak[10], Anton F. Engelsman[11], Mark Sywak[11], Gerardo D'Amato[12], Marco Raffaelli[12], Valérie Schuermans[13], Nicole D. Bouvy[13], Hasan H. Eker[14], H. Jaap Bonjer[14], Nina M. Vaarzon Morel[15], Els J.M. Nieveen van Dijkum[15], Otis M. Vrielink[16], Schelto Kruijff[16], Wilko Spiering[17], Inne H.M. Borel Rinkes[1], Gerlof D. Valk[18], Menno R. Vriens[1]

[1]Department of Surgical Oncoloy and Endocrine Surgery, University Medical Center Utrecht, [2]Department of Surgery, Weill Cornell Medical College, [3]Department of Surgery, University of California San Francisco, [4]Department of Surgery, Boston University School of Medicine and Department of Graduate Medical Sciences, [5]Department of Endocrine Surgery, New York-Presbyterian-Columbia University, [6]Department of Surgery, University of Chicago Medical Center, [7]Department of Surgery, University of Texas MD Anderson Cancer Center, [8]Department of Surgery, Northwestern University Feinberg School of Medicine, [9]Steinberg-Bernstein Centre for Minimally Invasive Surgery and Innovation, McGill University Health Centre, [10]Department of Surgery, University Health Network-Toronto General Hospital, [11]Department of Surgery, Royal North Shore Hospital, [12]Department of Endocrine and Metabolic Surgery, Policlinico Unversitario ''A Gemelli''-Universita Cattolicà Del Sacro Cuore, [13]Department of Surgery, Maastricht University Medical Center+, [14]Department of Surgery, VU Medical Center, [15]Department of Surgery, Academic Medical Center, [16]Department of Surgery, University Medical Center Groningen, [17]Department of Vascular Medicine, University Medical Center Utrecht, [18]Department of Endocrine Oncology, University Medical Center Utrecht

♦ 09. INTRA-OPERATIVE PARATHYROID HORMONE MONITORING IS NECESSARY IN PATIENTS WITH TWO CONCORDANT PREOPERATIVE LOCALIZATION STUDIES

Vivek Sant[1], Hunter J Underwood[1], Jennifer Ogilvie[1], Kepal N Patel[1]
[1]Surgery, NYU Langone Medical Center

POSTER DISPLAYS

10. PROSPECTIVE EVALUATION OF BONE MINERAL DENSITY AND BONE-SPECIFIC ALKALINE PHOSPHATASE AS BIOMARKERS OF POST-OPERATIVE HYPOCALCEMIA AFTER TOTAL THYROIDECTOMY IN SUBJECTS WITH HYPERTHYROIDISM

Poongkodi Karunakaran[1,2], Premkumar Asokumar[3], Chandrasekaran Maharajan[4], Rajasekar Manickam[5]
[1]Endocrine Surgery, Government Mohan Kumaramangalam Medical College,Salem, [2]Endocrine Surgery, SKS Hospital, [3]Diabetes, Endocrinology and Metabolism, SKS Hospital, [4]Endocrine Surgery, Madras Medical College, Chennai, [5]General Surgery, Government Mohan Kumaramangalam Medical College and Hospital

♦ 11. PRIMARY TUMOR SITE IS NOT ASSOCIATED WITH SURVIVAL IN PATIENTS WITH NEUROENDOCRINE TUMOR LIVER METASTASES

John F Tierney[1], Jennifer Poirier[1], Sam G Pappas[1], Erik Schadde[1], Xavier M Keutgen[1]
[1]Surgery, Rush University Medical Center

♦ 12. FACTORS INFLUENCING SURGEONS' TREATMENT RECOMMENDATIONS FOR LOW-RISK PAPILLARY THYROID CARCINOMA

Alexandria D McDow[1], Juan P Brito[2], J Linn Jennings[1], Megan C Saucke[1], Corrine I Voils[1], Benjamin R Roman[3], Susan C Pitt[1]
[1]University of Wisconsin - Madison, [2]Mayo Clinic, [3]Memorial Sloan Kettering Cancer Center

♦ 13. THE VALIDITY OF CALCIUM CREATININE CLEARANCE RATIO IN 1,000 CONSECUTIVE PATIENTS WITH PRIMARY HYPERPARATHYROIDISM

Edwina C Moore[1], Vikram Krishnamurthy[1], Judy Jin[1], Joyce Shin[1], Eren Berber[1], Allan Siperstein[1]
[1]Endocrine and Metabolim Institute, Section of Endocrine Surgery, The Cleveland Clinic

♦ 14. INTRAOPERATIVE PARATHYROID LOCALIZATION BY AUTOFLUORESCENCE DETECTION IN PATIENTS WITH PRIMARY HYPERPARATHYROIDISM

Malcolm H Squires[1], Rachel Jarvis[1], Lawrence A Shirley[1], John E Phay[1]
[1]The Ohio State University Wexner Medical Center

POSTER DISPLAYS

15. COMPARISON OF SURGICAL OUTCOMES OF TRANSORAL ROBOTIC THYROIDECTOMY VERSUS CONVENTIONAL OPEN THYROIDECTOMY

Hoon Yub Kim[1], Ji Young You[1], Hong Kyu Kim[1]
[1]KUMC Thyroid Center, Korea University Hospital, Korea University College of Medicine

16. HEAD TO HEAD COMPARISON OF THE ATA AND TI-RADS ULTRASOUND SCORING SYSTEMS

Sara Ahmadi[1], Taofik Oyekunle[1], Xiaoyin Sara Jiang[1], Jennifer Perkins[1], Randall P Scheri[1], Michael T Stang[1], Samantha Thomas[1], Sanziana A Roman[2], Julie A Sosa[2]
[1]University of California San Francisco

♦ **17. GENETIC CHARACTERIZATION OF CHILDHOOD SURVIVORS OF THE CHERNOBYL ACCIDENT WITH MEDULLARY THYROID CANCER**

Sarah B Fisher[1], Gilbert Cote[2], Jacqueline Bui-Griffith[2], Wei Lu[3], Ximing Tang[3], Tao Ha[2], Michelle D Williams[4], Ignacio I Wistuba[3], Kevin E Fisher[5], Steven G Waguespack[2], Clark Dorman[6], Michelle S Ludwig[7], Paul Graham[1], Nancy D Perrier[1], Jeffrey E Lee[1], Elizabeth G Grubbs[1]
[1]Department of Surgical Oncology, MD Anderson Cancer Center, [2]Department of Endocrine Neoplasia and Hormonal Disorders, MD Anderson Cancer Center, [3]Department of Translational Molecular Pathology, MD Anderson Cancer Center, [4]Department of Pathology, MD Anderson Cancer Center, [5]Department of Pathology & Immunology, Baylor College of Medicine, [6]University of Texas Medical School, [7]Department of Radiation Oncology, Baylor College of Medicine

♦ **18. INFLUENCE OF FINAL INTRAOPERATIVE PARATHYROID HORMONE LEVELS ON LONG-TERM RECURRENCE AFTER PARATHYROIDECTOMY**

Natalie Luehmann[1], Jennifer Cirino[1], Wesley Barnes[1], Peter Czako[1], Sapna Nagar[1]
[1]Beaumont Hospital

♦ **19. UTILITY OF EXOME SEQUENCING DATABASES IN VALIDATING GENETIC VARIANTS ASSOCIATED WITH MULTIPLE ENDOCRINE NEOPLASIA**

Tyler J Mouw[1], **Alexander Balmaceda[1]**, Peter J DiPasco[1]
[1]General Surgery, University of Kansas Medical Center

POSTER DISPLAYS

♦ 20. CLINICAL FEATURES OF PATIENTS WITH ADRENAL INCIDENTALOMAS AND SUB-CLINICAL CUSHING'S SYNDROME

Alex Rosenberg[1], Patricia Friedmann[1], Haejin In[1,2], Noah Bloomgarden[1,3], John C McAuliffe[1,2], Steven K Libutti[4,5], Amanda M Laird[4,5]
[1]Albert Einstein College of Medicine, [2]Surgery, Montefiore Medical Center, [3]Medicine, Montefiore Medical Center, [4]Surgical Oncology, Rutgers Cancer Institute of New Jersey, [5]Surgery, Rutgers Robert Wood Johnson Medical School

♦ 21. NOT ALL ADRENAL INCIDENTALOMAS REQUIRE BIOCHEMICAL ANALYSIS TO EXCLUDE PHEOCHROMOCYTOMA

Veljko Strajina[1], Geoffrey B Thompson[1], David R Farley[1], Melanie L Lyden[1], Irina Bancos[1], William F Young[1], Travis J McKenzie[1]
[1]Mayo Clinic, Rochester, MN

♦ 22. FAILURE TO DIAGNOSE AND TREAT HYPERPARATHYROIDISM AMONG PATIENTS WITH HYPERCALCEMIA: OPPORTUNITY FOR INTERVENTION AT PATIENT AND PHYSICIAN-LEVEL TO INCREASE SURGICAL REFERRAL

Ammar Asban[1], Alex Dombrowsky[1], Reema Mallick[1], Rongbing Xie[2], James K Kirklin[3], Raymond Grogan[4], David F Schneider[5], Herbert Chen[1], Courtney J Balentine[1]
[1]Department of Surgery, University of Alabama at Birmingham, [2]Kirklin Institute for Research in Surgical Outcomes, University of Alabama at Birmingham, [3]Department of Cardiovascular Surgery, University of Alabama at Birmingham, [4]Department of Surgery, The University of Chicago Medicine, [5]Department of Surgery, University of Wisconsin School of Medicine and Public Health

♦ 23. PARATHYROIDECTOMY OUTCOMES IN AN INTEGRATED HEALTHCARE SYSTEM: THE IMPACT OF SURGEON VOLUME AND SPECIALTY

Cassandre Benay[1], Iuliana Dit Bobanga[1], Sarah Choi[1], Raha Hassan[2], Judy Jin[1], Joyce Shin[1], Eren Berber[1], Allan Siperstein[1], Vikram Krishnamurthy[1]
[1]Endocrine Surgery, Cleveland Clinic, [2]Cleveland Clinic

POSTER DISPLAYS

♦ 24. PRACTICE TRENDS AND OUTCOMES OF ADRENAL SURGEONS: A COMPARISON OF DATA FROM CESQIP AND NSQIP

Colleen M Kiernan[1], Carmen C Solorzano[2], Barbra S Miller[3], Nancy D Perrier[1], Jeffrey E Lee[1], Paul G Gauger[3], Elizabeth G Grubbs[1], Tracy S Wang[4]
[1]Surgical Oncology, MD Anderson Cancer Center, [2]Division of Surgical Oncology & Endocrine Surgery, Vanderbilt University, [3]Division of Endocrine Surgery, University of Michigan, [4]Section of Endocrine Surgery, Medical College of Wisconsin

25. LAPAROSCOPIC TUMOR ABLATION AS A FIRST-LINE SURGICAL TREATMENT OPTION IN PATIENTS WITH NEUROENDOCRINE LIVER METASTASES: A 20-YEAR EXPERIENCE

Emin Kose[1,2], Bora Kahramangil[2], Hideo Takahashi[3], Federico Aucejo[3], Allan Siperstein[2], Eren Berber[2]
[1]General Surgery, University of Health Science - Okmeydani Education and Research Hospital, [2]Endocrine Surgery, Cleveland Clinic, [3]General Surgery, Cleveland Clinic

26. THE PRESENTATION AND DETECTION OF DISTANT METASTASIS IN DTC PATIENTS

Linwah Yip[1], Kelly L McCoy[1], Raja R Seethala[2], Yuri E Nikiforov[2], Sally E Carty[1]
[1]Surgery, University of Pittsburgh, [2]Pathology, University of Pittsburgh

27. INTRA-OPERATIVE DETECTION OF PARATHYROID GLANDS: A NOVEL APPROACH USING AUTOFLUORESCENCE LIFETIME IMAGING

Shamira Sridharan[1], Hanna Kim[1], Jakob Unger[1], Richard Bold[2], Laura Marcu[1], Michael J Campbell[2]
[1]Biomedical Engineering, University of California, Davis, [2]Surgery, University of California, Davis

♦ 28. PATTERNS IN INTRAOPERATIVE NERVE MONITORING USE DURING THYROIDECTOMY AND ITS ASSOCIATION WITH RECURRENT LARYNGEAL NERVE INJURY

Jessica Y Liu[1,2], Jason B Liu[1,3], Mark E Cohen[1], Bruce L Hall[1,4], Jyotirmay Sharma[2]
[1]American College of Surgeons, [2]Department of Surgery, Emory University, [3]Department of Surgery, University of Chicago Medicine, [4]Department of Surgery, Washington University in St Louis

POSTER DISPLAYS

♦ 29. UTILITY OF EARLY POST-OPERATIVE UNSTIMULATED THYROGLOBULIN IN INFLUENCING DECISION-MAKING IN PAPILLARY THYROID CARCINOMA

Alexandria D McDow[1], Cynthia M Shumway[1], Oyinda Fawole[1], Susan C Pitt[1], David F Schneider[1], Rebecca S Sippel[1], Kristin L Long[1]
[1]University of Wisconsin – Madison

♦ 30. NATURAL LANGUAGE PROCESSING OF THYROID CYTOLOGY REPORTS: UNLOCKING VALUABLE DATA FROM UNSTRUCTURED TEXT

Joseph R Imbus[1], Yiqiang Song[1], Nick Zaborek[1], Kristin L Long[1], Eneida A Mendonca[1], David F Schneider[1]
[1]University of Wisconsin, Madison

31. THYROIDECTOMY AND PARATHYROIDECTOMY UTILIZING A TRANSORAL VESTIBULAR APPROACH AT A US TEACHING HOSPITAL

Jon Russell[1], Elya Vasiliou[1], Christopher Razavi[1], Ralph Tufano[1]
[1]Johns Hopkins Hospital

32. ULTRASOUND IMAGE ANALYSIS USING ARTIFICIAL INTELLIGENCE FOR THE DIAGNOSIS OF THYROID NODULES

Young Jun Chai[1], Ralph Tufano[2], Joon-Hyop Lee[3], Hiroo Masuoka[4], Akira Miyauchi[4]
[1]Seoul National University Boramae Medical Center, [2]Johns Hopkins University Hospital, [3]Surgery, Gil Medical Center, [4]Kuma Hospital

♦ 33. PREOPERATIVE CT CHANGES SURGICAL MANAGEMENT IN CLINICALLY LOW-RISK DIFFERENTIATED THYROID CANCER

Pim J Bongers[1], Raoul Verzijl[1], Michael Dzingala[1], Menno R Vriens[2], Eugene Yu[3], Jesse D Pasternak[1], Lorne E Rotstein[1]
[1]General Surgery, University Health Networks, Toronto, Canada, [2]Surgery, University Medical Center Utrecht, [3]Radiology, University Health Networks, Toronto, Canada

34. AFRICAN AMERICANS SUFFER DISPARITIES IN ACCESS TO PARATHYROID SURGERY: AN OPPORTUNITY FOR INTERVENTIONS TO PROMOTE EQUITY AND IMPROVE OUTCOMES

Reema Mallick[1], Rongbing Xie[1,2], James K Kirklin[1,2], Herbert Chen[1], Courtney Balentine[1,3,4]
[1]University of Alabama Birmingham, [2]Kirklin Institute for Research in Surgical Outcomes, [3]Institute for Cancer Outcomes and Survivorship, University of Alabama at Birmingham, [4]Birmingham/Tuscaloosa VA Health Services Research and Development

POSTER DISPLAYS

♦ 35. VALIDATION OF INTRA-OPERATIVE PARATHYROID HORMONE 20 MIN AFTER TOTAL THYROIDECTOMY: TRACING HYPOCALCEMIA-PRONE PATIENTS AND ADJUSTING A PROTOCOL FOR POSTOPERATIVE CALCIUM SUPPLEMENTATION. A PROSPECTIVE COHORT STUDY.

Nathalie Chereau[1], Shabtail Ganon[2], Gaelle Godiris-Petit[2], Severine Noullet[2], Sophie Tezenas du Montcel[2], Fabrice Menegaux[2]
[1]Hopital PITIE Salpetriere, [2]PITIE Salpetriere, PARIS

♦ 36. SURGEON VOLUME AND SPECIALTY ARE ASSOCIATED WITH BETTER PHEOCHROMOCYTOMA OUTCOMES AND SURVEILLANCE

Janeil M. Mitchell[1], Kia J. Nicholson[1], Kelly L. McCoy[1], Sally E. Carty[1], Linwah Yip[1]
[1]Division of Endocrine Surgery, Department of Surgery, University of Pittsburgh School of Medicine

37. T4 SUPPRESSION THERAPY PER KG LEAN BODY WEIGHT AND BMI UNIT AFTER TOTAL THYROIDECTOMY FOR CANCER DEPENDS ON ASIAN OR NON-ASIAN ETHNICITY

Raoul A. Droeser[1], Roger J. Tabah[2], Jacques How[3], Elliot Mitmaker[2]
[1]General Surgery, University Hospital Basel, [2]Department of Surgery, McGill University Health Centre, [3]Department of Endocrinology, McGill University Health Centre

♦ 38. ADRENALECTOMY VOLUME-RELATED OUTCOMES OF CESQIP-PARTICIPATING SURGEONS

Colleen M Kiernan[1], Carmen C Solorzano[2], Barbra S Miller[3], Nancy D Perrier[1], Jeffrey E Lee[1], Paul G Gauger[3], Elizabeth G Grubbs[1], Tracy S Wang[4]

[1]Surgical Oncology, MD Anderson Cancer Center, [2]Division of Surgical Oncology & Endocrine Surgery, Vanderbilt University, [3]Division of Endocrine Surgery, University of Michigan, [4]Section of Endocrine Surgery, Medical College of Wisconsin

♦ 39. RISK SCORE OF NECK HEMATOMA. HOW TO SELECT PATIENTS FOR AMBULATORY THYROID SURGERY?

Fabrice Menegaux[1], Nathalie Chereau[1], Gaelle Godiris-Petit[1], Severine Noullet[1], Sophie Di Maria[1], Sophie Tezenas du Montcel[1]
[1]PITIE Salpetriere, PARIS

POSTER DISPLAYS

♦ 40. THE CLINICAL CONSEQUENCE OF FUNCTIONAL ADRENAL UPTAKE WITH ABSENCE OF CROSS-SECTIONAL MASS ON FDG-PET/CT

Pim J Bongers[1], Raoul Verzijl[1], Wouter P Kluijfhout[1], Lorne E Rotstein[1], Ur Metser[2], Patrick Veit-Haiback[2], Jesse D Pasternak[1]
[1]General Surgery, University Health Networks, Toronto, Canada, [2]Joint Department of Medical Imaging, University Health Networks, Toronto, Canada

♦ 41. DIVERSITY DOES NOT ALWAYS MEAN INCLUSION: AN ANALYSIS OF AAES MEMBERSHIP AND LEADERSHIP TRENDS, 2007-2017

Lindsay Kuo[1], Sareh Parangi[2], Matthew Nehs[1], Atul Gawande[1], Francis Moore, Jr[1], Nancy Cho[1]
[1]Brigham and Women's Hospital, [2]Massachusetts General Hospital

♦ 42. WHAT HAVE WE LEARNED FROM THYROID AND PARATHYROID SURGICAL MALPRACTICE CLAIMS? A 30 MILLION DOLLAR QUESTION.

Rajshri Mainthia[1], Jordan Bloom[1], Sareh Parangi[1], Richard Hodin[1], Courtney DeRoo[2], Antonia E Stephen[1], Vinod Narra[1], Carrie C Lubitz[1], Elizabeth Mort[1]
[1]Massachusetts General Hospital, Harvard Medical School, [2]CRICO Risk Management Foundation

♦ 43. NORMAL BASELINE INTRAOPERATIVE PTH IS ASSOCIATED WITH MORE EXTENSIVE SURGERY AND UNIQUE KINETICS IN PATIENTS WITH PRIMARY HYPERPARATHYROIDISM

Hunter J Underwood[1], Vivek Sant[1], Jennifer Ogilvie[1], Kepal N Patel[1]
[1]Surgery, NYU Langone Medical Center

♦ 44. THE OPERATIVE MANAGEMENT OF PAPILLARY THYROID CANCER OVER TIME

Benjamin C James[1], **Ryan Graham[2]**, Timsina Lava[2], David Haggstrom[3]
[1]Surgery, Beth Israel Deaconess Medical Center, [2]Surgery, Indiana University, [3]Medicine, Indiana University

POSTER DISPLAYS

45. ROLE OF BILATERAL ADRENALECTOMY IN THE MANAGEMENT OF PATIENTS WITH ACTH-DEPENDENT CUSHING SYNDROME

Laura De Marinis[1], Antonio Bianchi[1], Carmela De Crea[1], Gerardo D'Amato[1], Sabrina Chiloiro[1], Antonella Giampietro[1], Carlo A Rota[1], Salvatore M Corsello[1], Celestino P Lombardi[1], Alfredo Pontecorvi[1], Rocco Bellantone[1], Marco Raffaelli[1]
[1]Università Cattolica del Sacro Cuore - Policlinico Universitario A. Gemelli

46. TOTAL THYROIDECTOMY IS A SAFE AND EFFECTIVE OPTION FOR AMIODARONE INDUCED THYROTOXICOSIS: A SERIES OF 44 CASES

Gabriele Materazzi[1], Daniele Cappellani[2], Piermarco Papini[1], Claudio Urbani[2], Luca Manetti[2], Fausto Bogazzi[2]
[1]Department of Surgical, Medical, Molecular Pathology and Critical Area, University of Pisa, [2]Department of Endocrinology, University of Pisa

♦ **47. QUANTIFYING ACADEMIC ENDOCRINE SURGERY PRACTICE CASE COMPLEXITY**

Salman K Alsafran[1], Scott K Sherman[1], Fadi S Dahdaleh[1], Brian Ruhle[1], Edwin Kaplan[1], Peter Angelos[1], Raymon H Grogan[1]
[1]Endocrine Surgery Research Program, University of Chicago

♦ **48. VITAMIN D STATUS DOES NOT AFFECT IOPTH KINETICS: A GENERALIZED LINEAR MIXED MODEL ANALYSIS**

Claire E. Graves[1], Catherine M. McManus[1], John A. Chabot[1], James A. Lee[1], Jennifer H. Kuo[1]
[1]Columbia University Medical Center

POSTER DISPLAYS

♦ 49. ACTIVE SURVEILLANCE IN VON HIPPEL-LINDAU-ASSOCIATED PANCREATIC NEUROENDOCRINE TUMORS IS ASSOCIATED WITH LOWER DISEASE-SPECIFIC MORTALITY

Patience Green[1], Amit Tirosh[1,2], Samira Sadowski[3], Electron Kebebew[1,4]
[1]Endocrine Oncology Branch, National Cancer Institute, [2]Sackler Faculty of Medicine, Tel Aviv University, [3]Endocrine and Thoracic Surgery, University Hospitals of Geneva, [4]Department of Surgery, The George Washington University, School of Medicine and Health Science

♦ 50. RAPID RELIEF- THYROIDECTOMY IS A QUICKER CURE THAN RADIOACTIVE IODINE ABLATION (RAI) IN PATIENTS WITH HYPERTHYROIDISM

James R Davis[1], Alan P Dackiw[1], Fiemu E Nwariaku[1], Shelby A Holt[1], Sarah C Oltmann[1]
[1]UT Southwestern

GEOGRAPHICAL MEMBERSHIP DIRECTORY

2017-2018

GEOGRAPHICAL MEMBERSHIP DIRECTORY

Brazil

Curitiba
Vasconcelos, Evandro Cezar

Porto Alegre
Molinari, Alberto S.

Sao Paulo
Aun, Frederico

Canada

ALBERTA
Calgary
Harvey, Adrian M.
Mack, Lloyd
Mills, Jane Kathleen
Pasieka, Janice Lynn

Edmonton
McMullen, Todd Patrick William

BRITISH COLUMBIA
Vancouver
Bugis, Samuel P.
Melck, Adrienne Lara
Schmidt, Nis
Stuart, Heather
Wiseman, Sam Michael

ONTARIO
Toronto
Devon, Karen M.
Pasternak, Jesse David
Rosen, Irving Bernard
Rotstein, Lorne E.

QUEBEC
Montreal
Tabah, Roger John
Madani, Amin
Mitmaker, Elliot Jonathan

Outremont
Benay, Cassandre Elie

Chile

Santiago
Costa, Eduardo A.
Silva, Angelica

Colombia

Cali
Perez, Maria Victoria

Envigado
Duenas, Juan Pablo

Guatemala

Guatemala
Cordon, Carlos Rene

Guatemala City
Penalonzo, Marco Antonio

Mexico

Merida
Fajardo-Cevallos, Rafael Enrique

Mexico City
Montalvo-Hernandez, Jorge
Pantoja, Juan Pablo
Rivera Robledo, Carlos
Sierra-Salazar, Mauricio
Velázquez Fernández, David

GEOGRAPHICAL MEMBERSHIP DIRECTORY CONTINUED

United States

ALABAMA

Birmingham
Chen, Herbert
Diethelm, Arnold G.
Porterfield, John
Rose, J. Bart
Sperling, David
Wang, Thomas Nien-Tsu

Vestavia Hills
Lindeman, Brenessa

ARKANSAS

Little Rock
Mancino, Anne T.
Slotcavage, Rachel L.

ARIZONA

Chandler
Vazquez, Bianca J.

Phoenix
Cance, William G.
Coan, Kathryn
Cronin, Patricia
Flynn, Stuart D.
Harding, Richard
Milas, Mira
Schlinkert, Richard T.

Scottsdale
Khokhar, Mamoona
Van Lier Ribbink, Jeffrey

Tucson
Guerrero, Marlon A.
Memeh, Kelvin
Morris-Wiseman, Lilah F.

CALIFORNIA

Beverly Hills
Katz, Alfred D.

Davis
Wolfman, Earl

Duarte
Ituarte, Philip H. G.
Yim, John

Encino
Zuckerbraun, Lionel

Fremont
Karipineni, Farah

Fresno
Lee, Elaine
Maser, Christina
Rahbari, Reza

Hillsborough
Lim, Robert C.

La Jolla
Sanford, Arthur

Los Altos
Allo, Maria D.

Los Angeles
Assadipour, Yasmine
Giuliano, Armando E.
Haigh, Philip I.
Harari, Avital
Hines, Oscar J.
Isorena, Jennifer

GEOGRAPHICAL MEMBERSHIP DIRECTORY CONTINUED

Kuo, Eric
Wu, James X.
Yeh, Michael W.
Zanocco, Kyle
Zheng, Feibi

Newport Beach
Demeure, Michael J.

Northstar-Truckee
Danto, Lawrence A.

Orange
Elfenbein, Dawn
Harness, Jay

Palo Alto
Kebebew, Electron

Pomona
Basa, Johanna

Richmond
Park, Judith J.

Sacramento
Campbell, Michael

San Diego
Block, Melvin A.
Boganey, Anthony
Bouvet, Michael
Clark, Gary C.
Greenblatt, David

San Francisco
Chen, Yufei
Chomsky-Higgins, Kathryn
Clark, Orlo
Debas, Haile T.
Duh, Quan-Yang
Gosnell, Jessica
Hunt, Thomas K.
Nwaogu, Iheoma
Roman, Sanziana A.
Seib, Carolyn
Shen, Wen
Sosa, Julie Ann
Suh, Insoo
Yutan, Elaine U.

Santa Barbara
Latimer, Ronald G.

Santa Cruz
Lee, Louis C.

Santa Monica
Goldfarb, Melanie

Stanford
Cisco, Robin
Greco, Ralph S.
Lin, Dana T.
Norton, Jeffrey

Ventura
Nguyen, Chau

COLORADO

Aurora
Albuja-Cruz, Maria B.
McIntyre, Robert C.
Raeburn, Christopher D.

Colorado Springs
Grant, Clive S.

GEOGRAPHICAL MEMBERSHIP DIRECTORY CONTINUED

Denver
Carsello, Carrie
Chan, Tyler
Vanderveen, Kimberly

St. Aurora
Ademichael, Eden

CONNECTICUT
Bloomfield
Raphael, Rachel

Bronx
Sivarajah, Maheshwaran

New Haven
Callender, Glenda G.
Carling, Tobias
Donovan, Patricia
Erinjeri, Neeta
Foster, Roger S.
Gibson, Courtney

DISTRICT OF COLUMBIA
Washington
Felger, Erin
Geelhoed, Glenn W.
Noureldine, Salem I.
Rosen, Jennifer

FLORIDA
Bonita Springs
Freier, Duane T.

Coral Gables
Irvin, George L.

Fort Myers
Patwardhan, Nilima

Gainesville
Shaw, Christiana M.

Hollywood
Bimston, David
Edwards, Courtney

Jacksonville
Adkisson, Cameron D.

Miami
Farra, Josefina
Lew, John I.
Mao, Melissa
Marcadis, Andrea
Ortiz, Diana
Rodgers, Steven E.
Rubio, Gustavo
Udelsman, Robert

Miami Beach
Dembrow, Victor D.

Safety Harbor
Schmidt, Rick J.

Stuart
Vopal, James J.

Tallahassee
Watkins, Lucas

Tampa
Boone, Deva
Hodes, Ashley

GEOGRAPHICAL MEMBERSHIP DIRECTORY CONTINUED

Norman, James G.
Politz, Douglas E.
Ruan, Daniel T.

Wesley Chapel
Mitchell, Jamie

Weston
Metzger, Rosemarie

GEORGIA
Atlanta
Patel, Snehal
Sharma, Jyotirmay
Weber, Collin J.

Augusta
Mansberger, Arlie R.
Terris, David J.

Decatur
McGill, Julie F.

Marietta
Underwood, Robert A.

Savannah
Jillard, Christa
Yeager, E. Stephen

HAWAII
Honolulu
Wong, Livingston
Woodruff, Stacey

IOWA
Iowa City
Gurll, Nelson J.
Howe, James R.
Lal, Geeta
Sugg, Sonia L.
Weigel, Ronald J.

ILLINOIS
Aurora
Bloom, Allen D.

Burr Ridge
Patel, Subhash

Chicago
Abadin, Shabirhusain
Alsafran, Salman
Angelos, Peter
Elaraj, Dina
Fredland, Allan J.
Heiden, Katherine
Kaplan, Edwin L.
Keutgen, Xavier
Lee, Frances T.
Pickleman, Jack
Sturgeon, Cord
White, Michael

Crystal Lake
Yoo, Jenny

Evanston
Moo-Young, Tricia
Prinz, Richard
Winchester, David
Yan, Huan

Hinsdale
Paloyan, Edward

Maywood
De Jong, Steven A.
Kabaker, Adam

GEOGRAPHICAL MEMBERSHIP DIRECTORY CONTINUED

North Chicago
Zdon, Michael J.

Oaklawn
Hopkins, William M.

Palos Heights
Rajjoub, Samer

Park Ridge
Hann, Sang E.

Indianapolis
Broadie, Thomas
Miskulin, Judiann
Mitchell, Janeil M.
Ritter, Hadley

Zionsville
Swearingen, Andrew

KANSAS
Kansas City
DiPasco, Peter

Lake Quivera
Hermreck, Arlo S.

Wichita
Gates, Clint

KENTUCKY
Lexington
Lee, Cortney
Randle, Reese
Sloan, David

Louisville
Quillo, Amy R.

Kenner
Boudreaux, J. Philip
Woltering, Eugene A.

New Orleans
Garstka, Meghan
Jaffe, Bernard M.
Kandil, Emad
Opoku-Boateng, Adwoa S.

MASSACHUSETTS
Auburndale
Silen, William

Boston
Beazley, Robert
Brooks, David C.
Doherty, Gerard M.
Drake, Frederick Thurston
Gawande, Atul
Hasselgren, Per-Olof J.
Hodin, Richard
James, Benjamin
Kuo, Lindsay
Lubitz, Carrie C.
Mainthia, Rajshri
McAneny, David
Moore, Francis
Nehs, Matthew
Pai, Sara Isabel
Parangi, Sareh
Phitayakorn, Roy
Randolph, Gregory
Stephen, Antonia E.

GEOGRAPHICAL MEMBERSHIP DIRECTORY CONTINUED

Brookline
Cady, Blake
Mowschenson, Peter M.
Rochefort, Holly

Burlington
Brams, David M.
Wei, John P.

Cambridge
LoGerfo, Frank

Danvers
Narra, Vinod

Newton
Holm, Tammy

Springfield
Jabiev, Azad A.

Weston
Aliapoulios, Menelaos A.

MARYLAND
Baltimore
Gann, Donald S.
Marohn, Michael R.
Mathur, Aarti
Olson, John A.
Quintana, Doris
Tufano, Ralph P.
Turner, Joel
Vasiliou, Elya

Bethesda
El Lakis, Mustapha
Nilubol, Naris
Patel, Dhaval
Wells, Samuel A.

Elkton
Press, Danielle

MAINE
Bangor
Starks, Michael

Portland
Goldfarb, Walter B.
MacGillivray, Dougald
Radke, Frederick
Wu, Leslie S.

Vinalhaven
Kinder, Barbara K.

MICHIGAN
Ann Arbor
Burney, Richard E.
Cohen, Mark
Gauger, Paul G.
Hughes, David
Miller, Barbra S.

Bloomfield Hills
Saxe, Andrew W.

Detroit
Singer, Michael
Talpos, Gary B.

Frankfort
Griffen, Ward O.

GEOGRAPHICAL MEMBERSHIP DIRECTORY CONTINUED

Franklin
Hamburger, Stuart W.

Kalamazoo
Bly, Ryan

Lansing
McLeod, Michael K.
Mitchell, Bradford K.

Midland
Sequeira, Melwyn

Royal Oak
Czako, Peter F.
Nagar, Sapna

Saginaw
Ghanem, Maher

MINNESOTA
Minneapolis
Delaney, John P.
Evasovich, Maria
Najarian, John S.

Robbinsdale
Cerny, Joseph C.

Rochester
Carney, J. Aidan
Dy, Benzon
Farley, David R.
Hay, Ian D.
Lyden, Melanie L.
McKenzie, Travis J.
Pandian, TK
Service, F. John
Strajina, Veljko
Thompson, Geoffrey Bruce
Young, William F.

St Paul
Fox, Amy Catherine
Sneider, Mark S.

MISSOURI
Columbia
Koivunen, Debra G.

Saint Louis
Brunt, L. Michael
Gillanders, William E.
Hall, Bruce L.
Shieber, William

MISSISSIPPI
Jackson
Parent, Andrew D.

Tupelo
Bowlin, John W.

NORTH CAROLINA
Apex
Leight, George S.

Asheville
Humble, Ted H.
Rhodes, Drew Brice

Chapel Hill
Croom, Robert D.
Kim, Lawrence T.
Yeh, Jen Jen

GEOGRAPHICAL MEMBERSHIP DIRECTORY CONTINUED

Charlotte
Kercher, Kent W.
Wagner, Kristin

Durham
Scheri, Randall P.
Stang, Michael T
Kazaure, Hadiza

Greenville
Pofahl, Walter E.
Pories, Walter J.

Pittsboro
Starling, James R.

Raleigh
Faust, Kirk B.
Park, Paul
Stang, Michael T.

Wilmington
Versnick, Mark

Winston Salem
Albertson, David A.
Cannon, Jennifer
Gallagher, Scott F.

NORTH DAKOTA
Fargo
Traynor, Michael

NEBRASKA
Omaha
Fingeret, Abbey

NEW HAMPSHIRE
Lebanon
Sorensen, Meredith J.

NEW JERSEY
Basking Ridge
Davidov, Tomer

Morristown
Whitman, Eric D.

Neptune
Shifrin, Alexander L.
Sullivan, Michael

New Brunswick
Laird, Amanda
Libutti, Steven K.
Trooskin, Stanley

Plainsboro
Kahn, Steven P.

Ridgewood
Kundel, Anna

Vineland
Kushnir, Leon

NEW MEXICO
Albuquerque
Alkhalili, Eyas
Nockel, Pavel

Hobbs
Konstantinidis, Agathoklis

GEOGRAPHICAL MEMBERSHIP DIRECTORY CONTINUED

NEVADA

Rio Rancho
Miscall, Brian G.

Reno
Cardenas, Alex

NEW YORK

Albany
Applewhite, Megan K.
Beyer, Todd D.

Bronx
Kim, Ki Won
Smith, Jonathan

Brooklyn
Arora, Shalini
Beninato, Toni

Fayetteville
Dhir, Mashaal
Kort-Glowaki, Kara C.

Forest Hills
Babic, Bruna

Ithaca
Foster, Cory

Lake Success
Dubner, Sanford

Mineola
Allendorf, John D.

New Hyde Park
Yozawitz, Justin

New York
Aronova, Anna
Brennan, Murray F.
Chabot, John A.
Fahey III, Thomas J.
Fernandez Ranvier, Gustavo G.
Finnerty, Brendan M.
Ganly, Ian
Heller, Keith
Inabnet, William B.
Kraus, Dennis H.
Kuo, Jennifer
Lee, Denise
Lee, James
Marti, Jennifer
Ogilvie, Jennifer B.
Patel, Kepal N.
Patel, Snehal
Shah, Jatin P.
Shaha, Ashok R.
Strong, Vivian E.
Suh, Hyunsuk
Taye, Aida
Tuttle, Robert M.
Untch, Brian
Wilson, Melissa
Zarnegar, Rasa

Rochester
Moalem, Jacob

Somers
Grant, Scott

Syracuse
Albert, Scott
Gutnick, Jesse
Numann, Patricia J.

GEOGRAPHICAL MEMBERSHIP DIRECTORY CONTINUED

White Plains
Weber, Kaare

OHIO
Akron
Horattas, Mark C.
Van Fossen, Victoria L.

Cincinnati
Steward, David

Cleveland
Berber, Eren
Esselstyn, Caldwell B.
Jin, Judy
Krishnamurthy, Vikram D.
Mansour, Edward G.
McHenry, Christopher R.
Shin, Joyce J.
Siperstein, Allan
Wilhelm, Scott

Columbus
Ellison, Christopher
Lee, Grace
Phay, John E.
Shirley, Lawrence

South Euclid
Monteiro, Rosebel

Toledo
Brunicardi, Francis Charles
Wharry, Laura I.

OKLAHOMA
Norman
Connally, Tom
Lewis, Amanda

OREGON
Lake Oswego
Lim, James

Portland
Aliabadi, Shaghayegh
Jamison, Richard
Pommier, Rodney F.
Raaf, John H.
Sheppard, Brett C.
Yu, Kelvin

Springfield
Folek, Jessica

PENNSYLVANIA
Allentown
Hartzell, George W.

Bryn Mawr
Carter, Bradford

Danville
Blansfield, Joseph A.
Strodel, William E.

Darby
Ranganath, Rohit

Greensburg
Treter, Sarah D.

Harrisburg
Yang, Harold C.

GEOGRAPHICAL MEMBERSHIP DIRECTORY CONTINUED

Hershey
Boltz, Melissa
Kauffman, Gordon L.
Saunders, Brian D.

Meadowbrook
Kukora, John S.

Philadelphia
Fraker, Douglas L.
Frenkel, Catherine
Kairys, John C.
Kelz, Rachel
Lango, Miriam
LiVolsi, Virginia
Ridge, John A.
Wachtel, Heather
Yeo, Charles J.

Pittsburgh
Bartlett, David Lawrence
Carty, Sally E.
LaFay, Lisa
McCoy, Kelly
Yip, Linwah

Saxonburg
Stremple, John F.

Sayre
Trostle, Doug

RHODE ISLAND
Providence
Cotton, Travis
Mazzaglia, Peter Joseph
Monchik, Jack

SOUTH CAROLINA
Charleston
Carneiro-Pla, Denise
Javid, Mahsa

Columbia
Brown, J. Jeffrey

Greenville
Lokey, Jonathan S.

Rock Hill
Dhiman, Shamly V.

Seabrook Island
van Heerden, Jon

Spartanburg
Orr, Richard

SOUTH DAKOTA
Sioux Falls
Murphy, Emily

TENNEESSEE
Chattanooga
Giles, Wesley
Roe, Michael

Knoxville
Beasley, Mariah
Harrell, David
Mancini, Matthew
Nelson, Henry
Zirkle, Kevin

GEOGRAPHICAL MEMBERSHIP DIRECTORY CONTINUED

Memphis
King Jr., William

Nashville
Abumrad, Naji N.
Baregamian, Naira
Broome, James
Mims, Michele
Prasertvit, Sirinya
Solórzano, Carmen

Tazewell
Wilmoth, Robert J.

TEXAS
Austin
Brady, Bridget
Kroeker, Teresa R.
Long, Samuel

Dallas
Calcatera, Natalie
Dackiw, Alan
Davis, James
Holt, Shelby
Landry, Christine S.
Nwariaku, Fiemu E.
Oltmann, Sarah
Rabaglia, Jennifer
Steckler, Robert M.
Wallace, Lucy
Wang, Yi Zarn

Edinburg
Reinhart, Henry
Romero Arenas, Minerva
Snyder, Samuel K.

Galveston
Tyler, Douglas S.

Houston
Clayman, Gary
Graham, Paul
Grogan, Raymon H.
Grubbs, Elizabeth
Islam, Ana
Jackson, Gilchrist L.
Lee, Jeffrey E.
Makris, Konstantinos
Perrier, Nancy D.
Suliburk, James W.
Zagzag, Jonathan

Round Rock
Govednik, Cara

San Antonio
Duperier, Frank
Kitano, Mio
Santillan, Alfredo A.

Temple
Campbell, Rebekah
Lairmore, Terry C.
Milan, Stacey

Wichita Falls
Sutton, Beth H.

VIRGINIA
Arlington
Broughan, Thomas A.
Lai, Victoria

GEOGRAPHICAL MEMBERSHIP DIRECTORY CONTINUED

Charlottesville
Hanks, John B.
Smith, Philip
Zeiger, Martha

Norfolk
Hughes, Marybeth

Portsmouth
Johnston, Michael

Richmond
Grover, Amelia C.
Khokar, Amna
Merrell, Ronald
Newsome, Heber H.
Phan, Giao
Shah, Syed

VERMONT
Burlington
Wrenn, Sean

WASHINGTON
Kirkland
Hakkarainen, Timo

Seattle
Zern, Nicole

Veradale
Sinha, Renu

WISCONSIN
Madison
Bates, Maria
Long, Kristin
Mack, Eberhard A.
Matzke, Greg M.
Pasupuleti, Latha
Pitt, Susan Clare
Schaefer, Sarah
Schneider, David F.
Sippel, Rebecca S.
Wenger, Ronald

McFarland
McDow, Alexandria

Milwaukee
Campbell, Bruce H.
Carr, Azadeh A.
Cayo, Ashley
Evans, Douglas B.
Glenn, Jason
Krzywda, Elizabeth
Kunnimalaiyaan, Muthusamy
Mazotas, Ioanna
Misustin, Sarah
Wang, Tracy S.
Wilson, Stuart D.
Yen, Tina

WEST VIRGINIA
Charleston
Richmond, Bryan K.

Morgantown
LoPinto, Melissa

GEOGRAPHICAL MEMBERSHIP DIRECTORY CONTINUED

CORRESPONDING COUNTRIES OF THE AAES

Australia

Beecroft
Reeve, Thomas S.

Footscray
Chin-Lenn, Laura

Melbourne
Miller, Julie
Serpell, Jonathan
Yeung, Meei J.

St Leonards
Sywak, Mark

Sydney
Delbridge, Leigh W.
Sidhu, Stan

Waroona
Edis, Anthony J.

Austria

Vienna
Niederle, Bruno

Belgium

Aalst
Van Slycke, Sam

China

Shanghai City
Fan, Youben

France

Clermont-Ferrand
Kauffmann, Philippe R.

Lille Cedex
Carnaille, Bruno Marie

Marseilles
Sebag, Frederic N.

Pierre Benite
Mercier, Frederic

Poitiers
Kraimps, Jean

Strasbourg
Mutter, Didier

Vandoeuvre les Nancy
Brunaud, Laurent

Germany

Duisburg
Simon, Dietmar

Dusseldorf
Roeher, Hans-Dietrich

Essen
Walz, Martin K.

Mainz
Musholt, Thomas J.
Weber, Theresia

Rostock
Klar, Ernst

GEOGRAPHICAL MEMBERSHIP DIRECTORY CONTINUED

Greece

Athens
Linos, Dimitrios A.
Moraitis, Dimitrios G.

Thessaloniki
Koutelidakis, Ioannis

India

Lucknow
Agarwal, Gaurav
Mishra, Saroj K.

Israel

Hadera
Krausz, Michael M.

Haifa
Mekel, Michal

Herzliya
Schachter, Pinhas P.

Jerusalem
Mazeh, Haggi

Italy

Bari
Testini, Mario

Genoa
Minuto, Michele N.

Padova
Iacobone, Maurizio

Padua
Favia, Gennaro

Pisa
Miccoli, Paolo

Rome
Bellantone, Rocco
De Crea, Carmela
Raffaelli, Marco

Japan

Kobe
Miyauchi, Akira

Nagoya
Imai, Tsuneo

Oita
Noguchi, Shiro

Osaka
Imamura, Masayuki

Tokyo
Iihara, Masatoshi
Obara, Takao
Sugitani, Iwao

Malaysia

Mahamad, Sadhana

Netherlands

Amsterdam
Engelsman, Anton

Groningen
Kruijff, Schelto

GEOGRAPHICAL MEMBERSHIP DIRECTORY CONTINUED

Utrecht
Borel Rinkes, Inne H. M.
Vriens, Menno

New Zealand
Auckland
Patel, Rajeshbhai

Norway
Bergen
Varhaug, Jan E.

Poland
Krakow
Barczynski, Marcin

Russia
Saint Petersburg
Romanchishen, Anatoly

Saudi Arabia
Riyadh
Al Sobhi, Saif
Alhefdhi, Amal

Serbia
Belgrade
Paunovic, Ivan

South Korea
Seoul
Lee, Kyu
Youn, Yeo-Kyu

Spain
Barcelona
Moreno Llorente, Pablo

Sweden
Linkoping
Gimm, Oliver

Stockholm
Dural, Ahmet Cem
Hamberger, Bertil
Kouvaraki, Maria

Uppsala
Skogseid, Britt M.

Switzerland
Geneva
Sadowski, Samira

Taiwan
Taipei
Lee, Chen-Hsen

Turkey
Istanbul
Duren, Mete
Tezelman, Serdar

Ukraine
Kiev
Kvachenyuk, Andrey

United Kingdom
Exeter
Pearse, A. G. E.

London
Christakis, Ioannis
Frilling, Andrea

Oxford
Dudley, Nicholas E.

ABSTRACTS

NOTES

ABSTRACTS

NOTES

ABSTRACTS

NOTES

ABSTRACTS

NOTES

ABSTRACTS

NOTES

ABSTRACTS

NOTES

ABSTRACTS

NOTES

ABSTRACTS

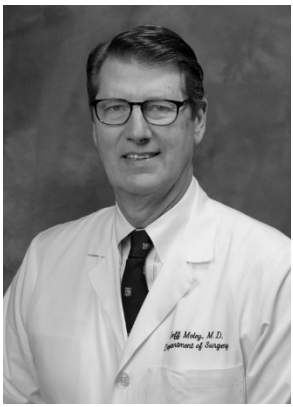
NOTES

ABSTRACTS

NOTES

IN MEMORIAM

Jeffrey Moley, MD



On October 19, 2017, Dr. Jeffrey Moley passed away suddenly Sunday evening at his home in St. Louis, Missouri.

Dr. Moley has been a pivotal member of our organization and of the field of Endocrine Surgery. He is a world expert in the treatment of medullary thyroid cancer and his research has helped to shape the way that we care for our patients. He was a Professor of Surgery at Washington University and his passion for the field of Endocrine Surgery helped to inspire many among us to choose a career in Endocrine Surgery. He has been a member of the AAES since 1995 and has served our organization as Vice President in 2008 and as a Council member and Chair of the research committee from 2001-2004.

Dr. Moley was world-renowned for his scientific research and expertise in the endocrine surgical field. He was Professor of Surgery and Chief of the Section of Endocrine and Oncologic Surgery at Washington University in St. Louis. He was also an Associate Director of the Siteman Cancer Center, and the Chief of Surgical Services at the VA Hospital. He was well-known in the St. Louis Medical community and was a highly respected teacher and role model to his medical trainees. Everyone within our organization will feel this loss. He will be missed greatly.

Jan Erik Varhaug, MD

On December 14, 2017 we learned of the passing of our fellow endocrine surgical colleague, Professor Jan Erik Varhaug, at the age of 75.

Dr. Varhaug served as an endocrine surgeon and professor at Haukeland University Hospital, Bergen, Norway for several decades before retiring five years ago. He was a valued member of the IAES. He contributed significantly, both nationally and internationally, to the field of endocrine surgery. His friendly and personal approach, combined with his extensive clinical knowledge, experience and his operative skills, were valued greatly by all his friends and fellow surgeons, and patients alike. He will be missed. Our thoughts, prayers and condolences go out to his family at this time.

AMERICAN ASSOCIATION OF ENDOCRINE SURGEONS

AAES 40TH Annual Meeting

APRIL 7–9 | LOS ANGELES

Local Arrangements Chair: Michael Yeh, MD

AMERICAN ASSOCIATION OF ENDOCRINE SURGEONS

201 EAST MAIN ST., SUITE 1405, LEXINGTON, KY 40507
T: 859-402-9810 | F: 859-514-9166
E: INFO@ENDOCRINESURGERY.ORG
WWW.ENDOCRINESURGERY.ORG